OMRON

OMRON Corporation
FA Systems Division H.Q.

Cat. No. Q103-E1-7

Note: Specifications subject to change without notice.

OMRON

CompoBus/S

CompoBus/S

New Products

- Programmable Slaves
- SYSMAC CPM2C CPU Units with CompoBus/S Master Functions
- Waterproof Terminals
- Sensor Terminals
- Remote I/O Modules

Cat. No. Q103-E1-7

Complicated and Time-consuming Wiring,...,

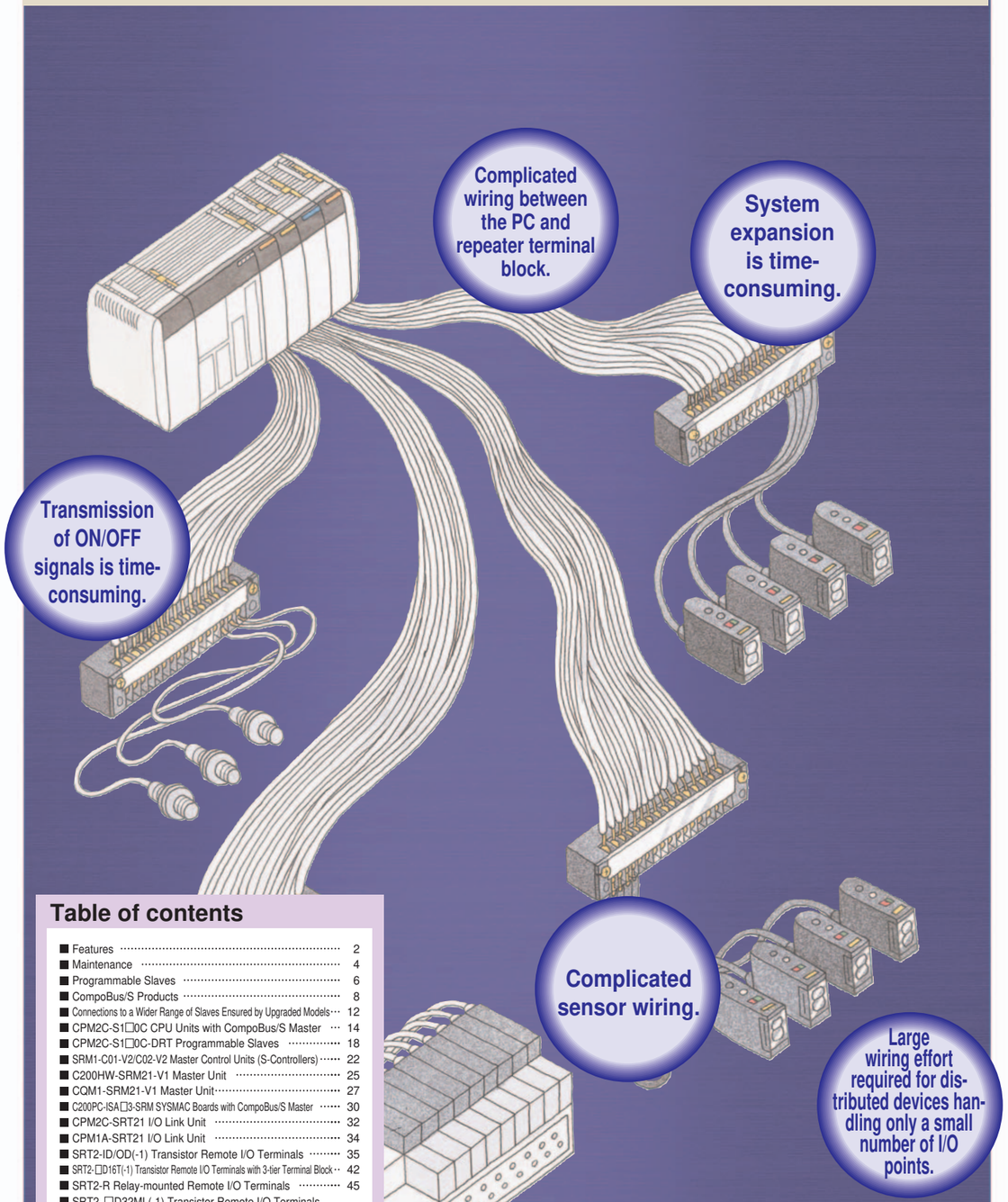


Table of contents

Now Easier and Quicker

Maximum Communications Cycle Time of Only 1 ms

(High-speed Communications Mode)
Exchanges 256 I/O points of data with a maximum of 32 Slaves at a maximum communications cycle time of only 1 ms per point.

Connects through a single dedicated cable, thus greatly saving wiring effort.

Cabtire or flat cable is selectable.

- Cabtire cable is available for multi-drop, T-branch, or multi-branch lines.
- Flat cable connects to T-branch connectors, thus ensuring ease of system expansion.

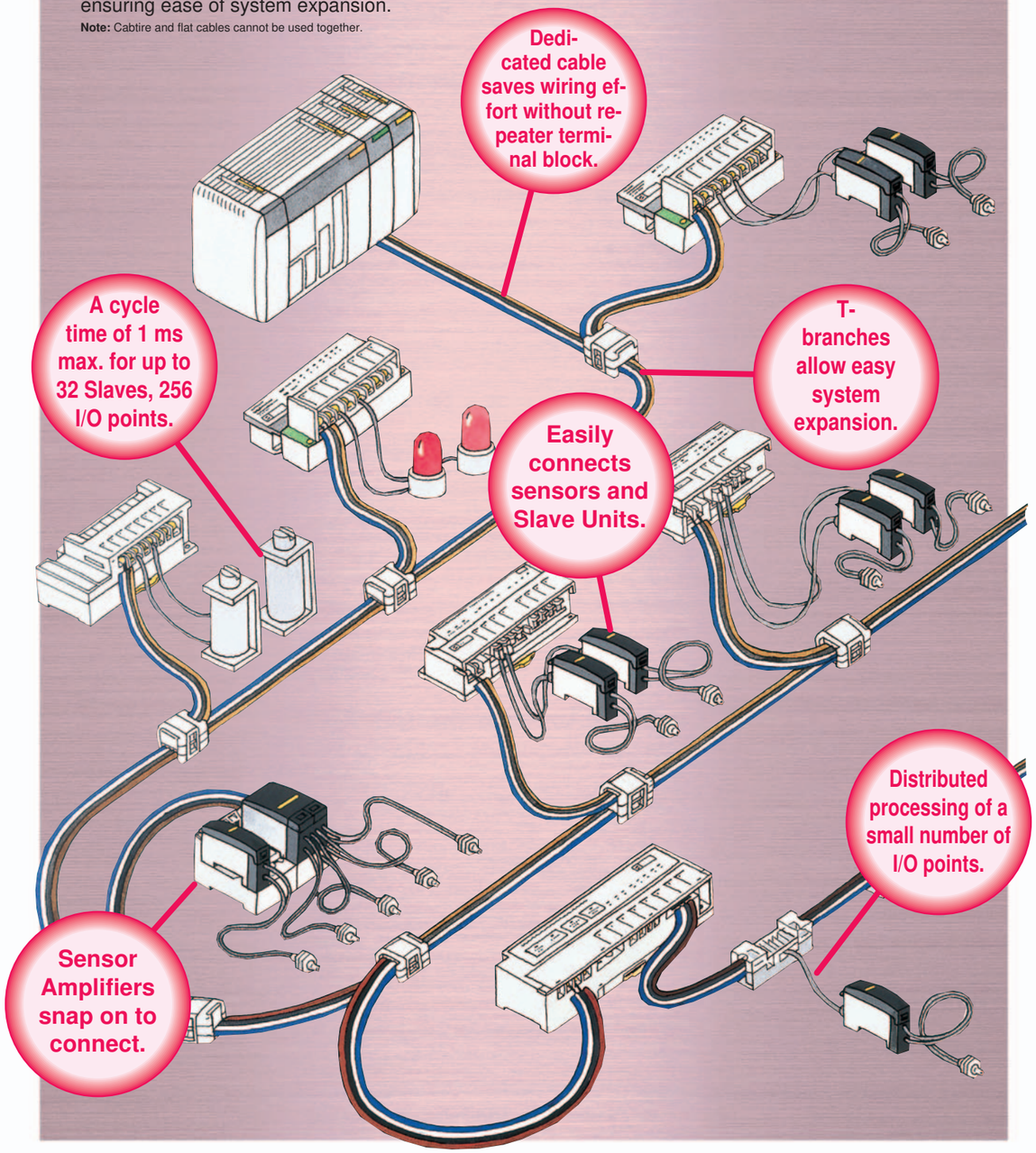
Note: Cabtire and flat cables cannot be used together.

Long-distance Communications Mode

With a trunk line length of 500 m and a total branch line length of 100 m (2-conductor VCTF cable), you can branch in any way required using a special flat cable or a 4-conductor VCTF cable as long as the total wiring length is 200 m or less. Communicate at a cycle time of only 6 ms.

*The Long-distance Communications Mode is not supported by the SRT1 Series.

An Analog Input Terminal with four points and an Analog Output Terminal with two points are available.

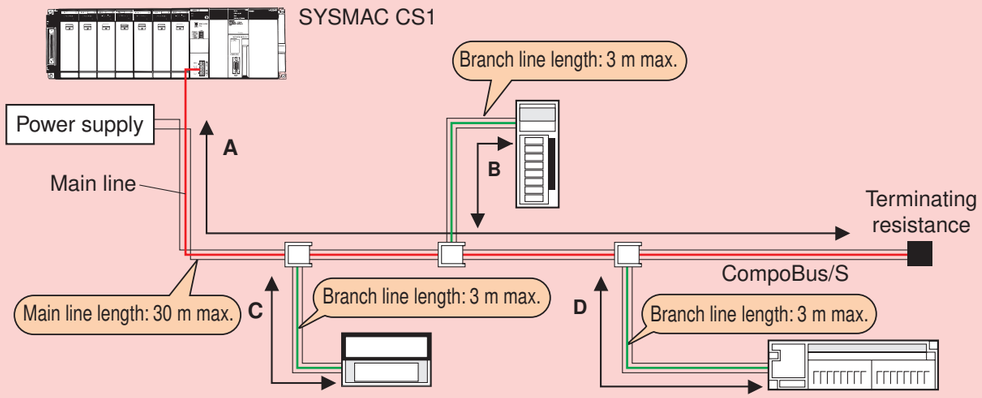


Long-distance Communications Mode Eliminates Wiring Restrictions for More Efficient System Design

System Design

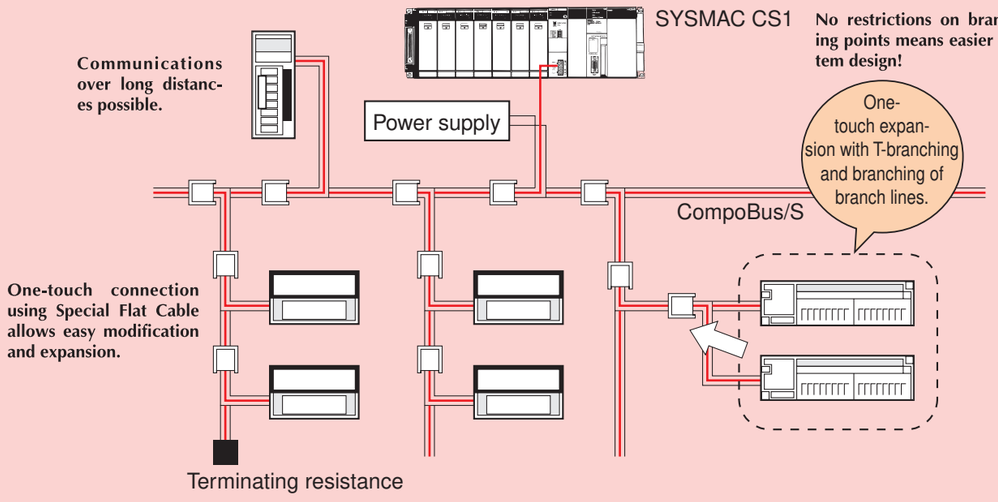
With conventional High-speed Communications Mode, the following restrictions on the number of branching points and cable length had to be considered when designing the system.

With a Special Flat Cable or a 4-conductor VCTF cable:
Main line length A: 30 m max. Branch line lengths B, C, and D: 3 m max. Total branch line length B + C + D: 30 m max.



* Baud rate: 750 kbps (in High-speed Communications Mode)
* With 2-conductor VCTF cable (in High-speed Communications Mode), main line length: 100 m max.

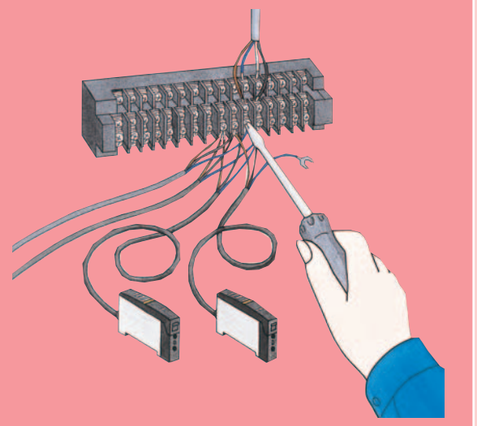
Using CompoBus/S Long-distance Communications Mode (with a Special Flat Cable or a 4-conductor VCTF cable) removes restrictions on main and branch line lengths. Branch freely up to a total cable length of 200 m.



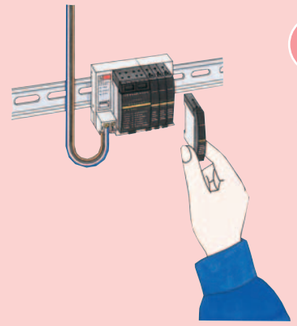
* Baud rate: 93.75 kbps
* Connect a terminating resistance at the end of the cable furthest from the Master.
* With 2-conductor VCTF cable (in Long-distance Communications Mode), main line length: 500 m max.

Greatly Saves Wiring and Installation Effort and Time for System Maintenance and Expansion

Maintenance

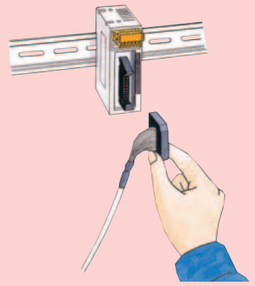


Individual wires must be replaced when using repeater terminal blocks.



1

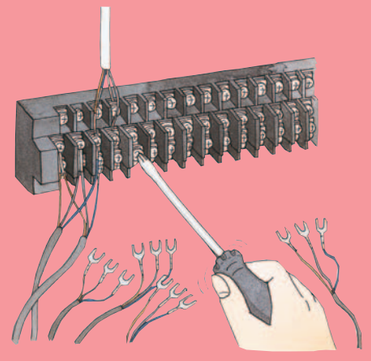
Sensor Amplifier Terminals allow easy replacement of sensors through a snap-on attachment.



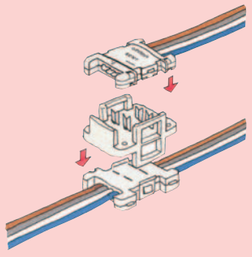
2

CompoBus/S connector models allow snap-on attachment.

Expansion

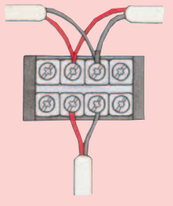


Repeater terminal blocks must be added and wired for I/O expansion.



1

Flat cable can be used with T-branch connectors which allow an increase in the number of Slaves.



2

2-conductor VCTF cable allows multi-branching, thus easily allowing an increase in the number of Slaves.

Programmable Slaves

A slave with the complex functional ity needed for distributed blocks.

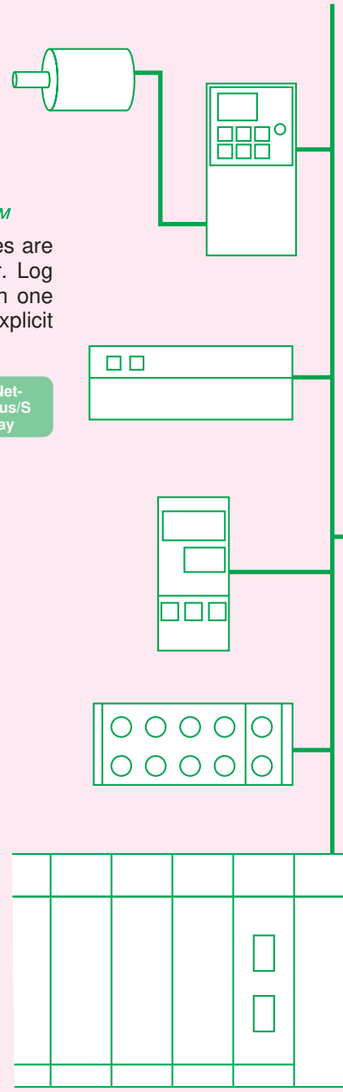
Programmable Slaves combine devices, such as sensors and actuators, into one functional unit that is treated as a DeviceNet slave.

Programmable Slaves greatly facilitate device distribution and functional organization. They help standardize programming between units and reduce the amount of programming required at the master. I/O and operational checks can be performed for each functional unit, rather than waiting for final system assembly, as with conventional distributed I/O systems.

● Functions

OMRON Programmable Slaves function as DeviceNet slaves, yet they provide PLC functionality to enable easy system expansion and create new potential.

- 2-ms Cycle Time (for 500 Steps)
- High-speed Counter
- Pulse Output
- Interrupt Inputs
- 256 Timers/ Counters
- Calendar/ Clock



DeviceNet™

Multiword I/O links and explicit messages are used to control slaves from the master. Log data for communications can be sent in one operation whenever necessary using explicit messages.

- 1,024-point I/O Links
- Explicit Messages
- DeviceNet-CompoBus/S Gateway

RS-232C

Connected to bar code readers, Programmable Terminals, and other devices, the Programmable Slave processes data locally to reduce the load on the master.

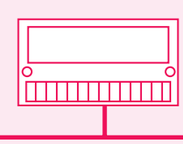
- No-protocol Communications
- NT Links
- Host Links

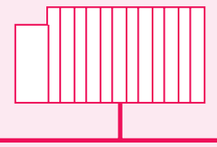
Expansion Units

(3 max.)

Just one Unit is required for each distributed block, reducing the number of interfaces for multipoint communications to, in turn, reduce costs.

- Discrete I/O
- Relay Output
- Analog I/O
- Temperature Control
- Power Supply Unit





CompoBus/S

Less wiring is required for terminal block expansions, connections to remote devices (such as signal lights or pushbutton switches), and connections to pneumatic valves and other non-OMRON products.

- 256-point (128/128) Expansion
- High-speed Mode (0.8 ms, 100 m)
- Long-distance Mode (6 ms, 500 m)
- VCTF or Special Flat Cables
- Complete Product Line

CompoBus/S Products

Master Units

CPU Units with CompoBus/S Master

Programmable Slaves

CPM2C-S100C
CPM2C-S110C

CPM2C-S100C-DRT
CPM2C-S110C-DRT

CompoBus/S Master Control Units

Without RS-232C port

SRM1-C01-V2

With RS-232C port

SRM1-C02-V2

CompoBus/S Master Units

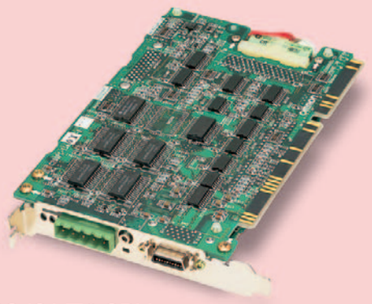
Master Unit with 256 points

C200HW-SRM21-V1

Master Unit with 128 points

CQM1-SRM21-V1

SYSMAC Board with CompoBus/S Master Functions



C200PC-ISA□3-SRM

Slave Units

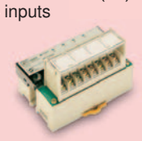
I/O Link Units

CPM2C-SRT21

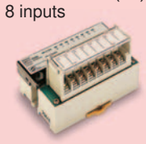
CPM1A-SRT21

Transistor Remote I/O Terminals (NPN/PNP Output)

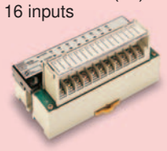
SRT2-ID04(-1)
4 inputs



SRT2-ID08(-1)
8 inputs

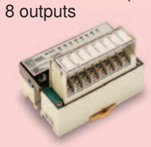


SRT2-ID16(-1)
16 inputs

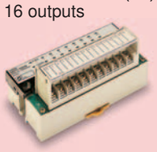


SRT2-OD04(-1)
4 outputs

SRT2-OD08(-1)
8 outputs

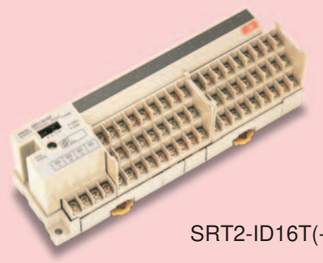


SRT2-OD16(-1)
16 outputs



Note: SRT2-□□□□ indicates NPN models and SRT2-□□□□-1 indicates PNP models.

Transistor Remote I/O Terminals with 3-tier Terminal Block

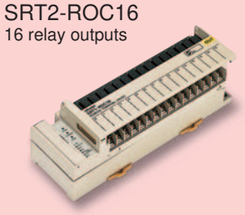


SRT2-ID16T(-1)

Relay-mounted Remote I/O Terminals

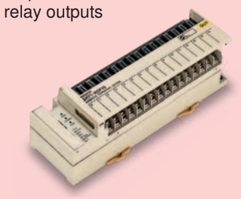
SRT2-ROC08
8 relay outputs

SRT2-ROC16
16 relay outputs



SRT2-ROF08
8 power MOS FET
relay outputs

SRT2-ROF16
16 power MOS FET
relay outputs



Transistor Remote I/O Terminals with Connectors

SRT2-□D32ML(-1)
32 I/O points

SRT2-V□D08S(-1)
8 I/O points

SRT2-V□D16ML(-1)
16 I/O points

CompoBus/S Products

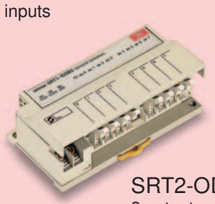
Slave Units

Waterproof Terminals

SRT2-□D04CL(-1) SRT2-□D08CL(-1)

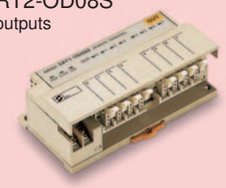
Sensor Terminals

SRT2-ID08S
8 inputs



SRT2-ND08S
4 inputs/4 outputs

SRT2-OD08S
8 outputs



Sensor Amplifier Terminals

SRT1-TID04S
Communications Unit

SRT1-TKD04S
Communications Unit

SRT1-XID04S
Expansion Unit

SRT1-XKD04S
Expansion Unit

Connector Units (Photoelectric Sensors)

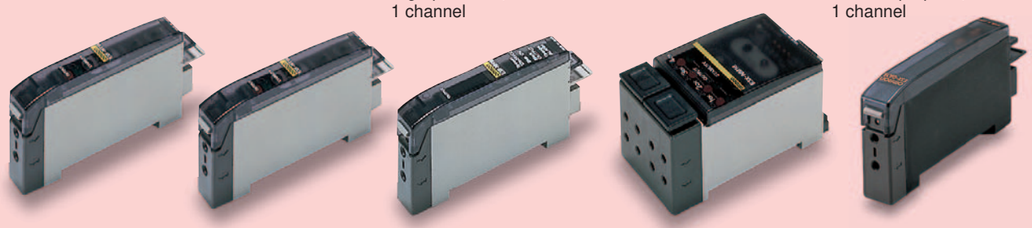
E3X-NT16
E3X-N Connector
General-purpose,
1 channel

E3X-NT26
E3X-N Connector
Multi-functional,
1 channel

E3X-NH16
E3X-N Connector
Long-distance,
High-precision,
1 channel

E3X-NM16
E3X-N Connector
Multi-functional,
4 channels

E3X-DA16
E3X-DA Connector
Digital,
General-purpose,
1 channel



Connector Unit (Terminal Block Unit)

E39-JID01
One input

Connector Units (Proximity Sensors)

E2CY-T16
Aluminum-detecting Proximity Sensor
E2CY-T Connector

E2C-T16
Teaching Proximity Sensor
E2C-T Connector

Slave Units

Analog Input Terminals

SRT2-AD04
4 inputs

SRT2-DA02
2 outputs

Remote I/O Modules

SRT2-ID16P
16 inputs
(For NPN: +common)

SRT2-OD16P
16 outputs
(For NPN: -common)

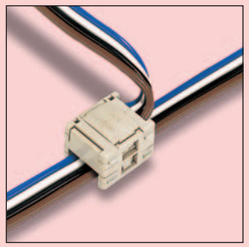
CompoBus/S Position Driver

FND-X□-SRT

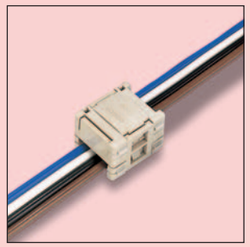
Peripheral Devices

Connectors

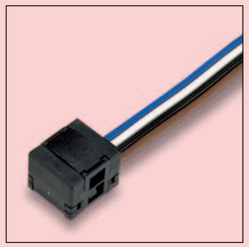
SCN1-TH4
Branch Connector



SCN1-TH4E
Extension Connector

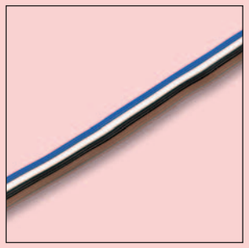


SCN1-TH4T
Connector Terminator



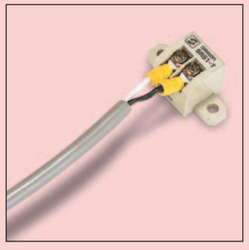
Flat Cable

SCA1-4F10



Terminal Block Terminator

SRS1-T



T-branch Connector
(for VCTF Cable)

XS2R-D427-5

Connector Terminator
(for 4-conductor VCTF Cable)

SRS2-1

Connections to a Wider Range of Slaves Ensured by Upgraded Models

Slave		Master: Conventional models: C200HW-SRM21, CQM1-SRM21, SRM1-C01, SRM1-C02, SRM1-C01-V1, SRM1-C02-V1, C200PC-ISA02-SRM, C200PC-ISA12-SRM	New models: C200HW-SRM21-V1, CQM1-SRM21-V1, SRM1-C01-V2, SRM1-C02-V2, C200PC-ISA03-SRM, C200PC-ISA13-SRM, CPM2C-S100C (NEW), CPM2C-S110C (NEW), CPM2C-S100C-DRT (NEW), CPM2C-S110C-DRT (NEW)	
		NKE-made Uniwire CompoBus/S Send Unit SDD-CS1	Communications mode	
			High-speed communications mode	Long-distance communications mode
	SRT1 Series	Yes	Yes	No
	FND-X□-SRT	Yes	Yes	No
Existing product	SRT2-AD04	Yes	Yes	Yes
	SRT2-DA02	Yes	Yes	Yes
	SRT2-V□08S(-1)	Yes	Yes	Yes
	SRT2-□D08S(-1)	Yes	Yes	Yes
	SRT2-□D16ML(-1)	Yes	Yes	Yes
	SRT2-RO□16	Yes	Yes	Yes
	SRT2-V□08S(-1)	Yes	Yes	Yes
	SRT2-□D16(-1)	Yes	Yes	Yes
	SRT2-RO□08	Yes	Yes	Yes
	CPM2C-SRT21	Yes	Yes	Yes
	SRT2-□D32ML(-1)	Yes	Yes	Yes
	CPM1A-SRT21	Yes	Yes	Yes
New product	SRT2-ID04CL(-1)	Yes	Yes	Yes
	SRT2-OD04CL(-1)	Yes	Yes	Yes
	SRT2-ID08CL(-1)	Yes	Yes	Yes
	SRT2-OD08CL(-1)	Yes	Yes	Yes
	SRT2-ID08S	Yes	Yes	Yes
	SRT2-ND08S	Yes	Yes	Yes
	SRT2-OD08S	Yes	Yes	Yes
	SRT2-ID16P	Yes	Yes	Yes
	SRT2-OD16P	Yes	Yes	Yes

Note: 1. In high-speed communications mode, the maximum transmission distance is 100 m at a baud rate of 750 kbps. In long-distance communications mode (i.e., a newly available mode), the maximum transmission distance is 500 m at a baud rate of 93.75 kbps.

2. The SRT2-AD04 and SRT2-DA02 are available for 16-bit synchronous communications.

Company	Product	Model number	Communications mode	
			High-speed communications mode	Long-distance communications mode
CKD	Solenoid valve for saving wiring effort	4TB1/2/3/4 Series	Yes	Yes (See note.)
		4G Series	Yes	Yes (See note.)
		MN4SO Series	Yes	Yes (See note.)
	Parect regulator	SDA-C	Yes	Yes
SMC	Solenoid valve for SI manifold use	VQ, SY, SX, SQ, SZ Series	Yes	Yes (See note.)
Koganei	F-series solenoid valve	YS2A1, YS2A2	Yes	Yes
	X80M/X88M Series	YS1A1, YS1A2	Yes	Yes
	JA-series solenoid valve	YS5A1, YS5A2	Yes	Yes
	PA, PB-series solenoid valve	YS4A1, YS4A2	Yes	Yes

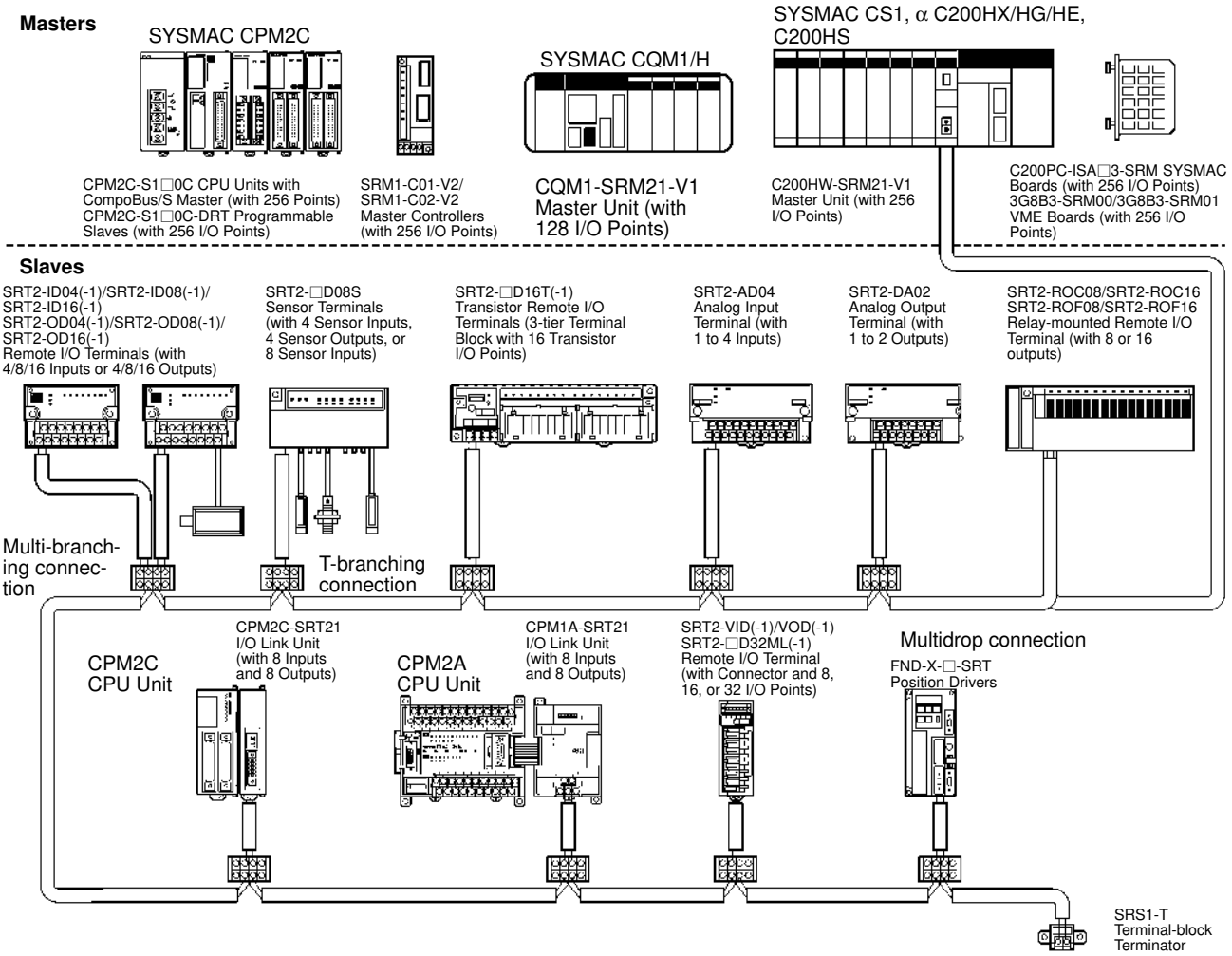
Note: Refer to the maker for information on long-distance communications mode.

CompoBus/S Connection Examples

High-speed ON/OFF Bus Communications in Remote I/O Systems

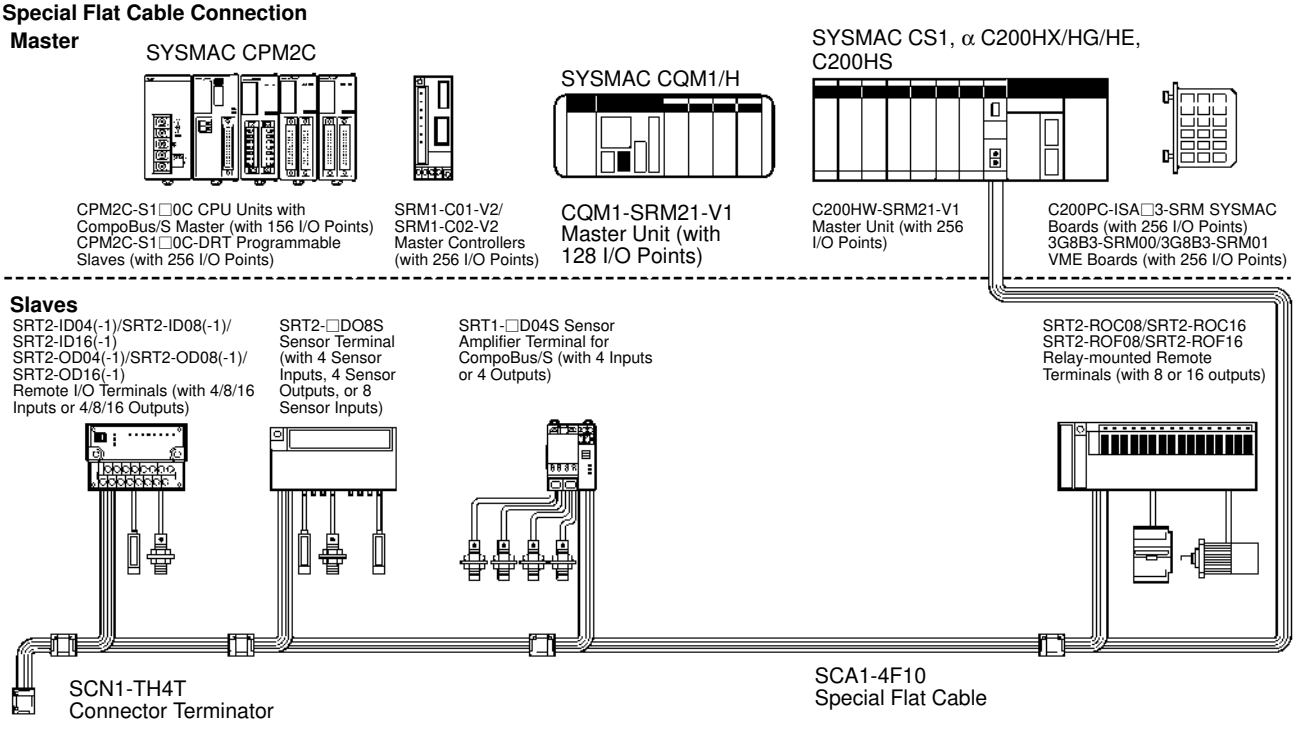
Cabtire Cable Connections

Masters



Special Flat Cable Connection

Master



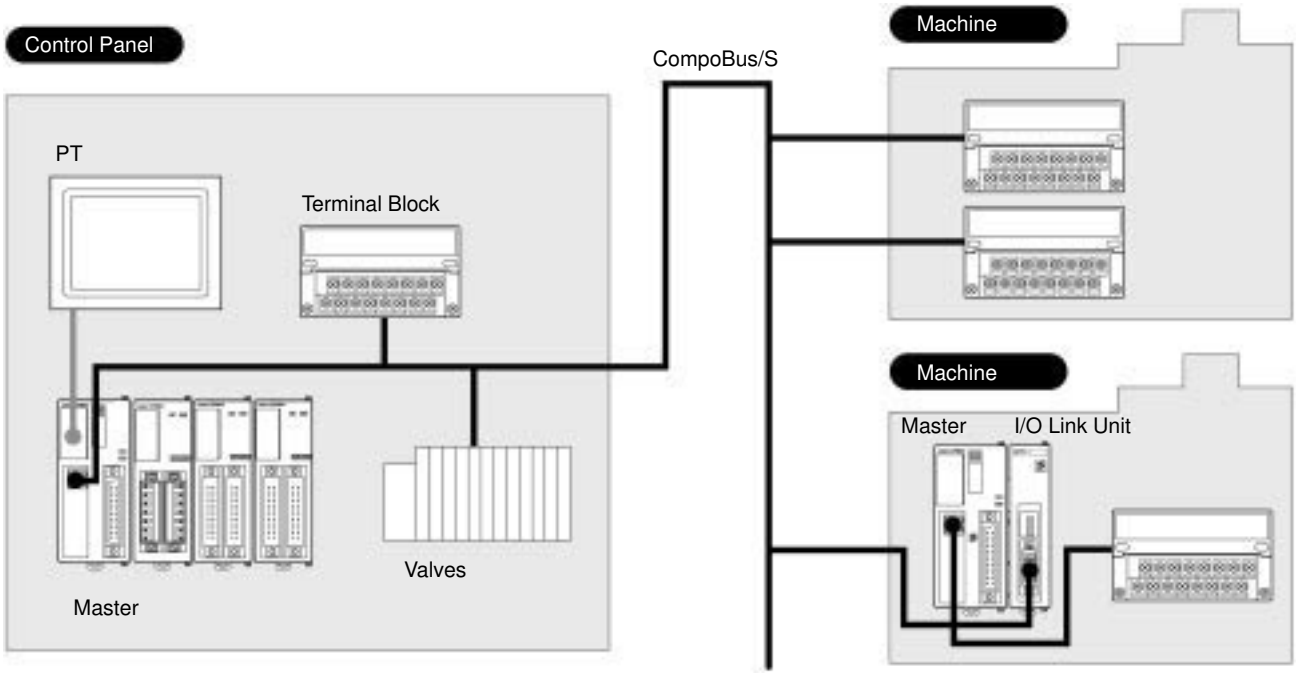
Note: Cabtire cable and flat cable cannot be used together.

OMRON

CPU Units with CompoBus/S Master | CPM2C-S1□0C

Ultra-compact, Thin-profile CPM2C CPU Unit with CompoBus/S Master Offering High-speed Bus Communications with No Complicated Wiring

- Ultra-compact, thin-profile design ideal for on-site applications
  Ultra-compact at 40 x 90 x 65 mm (W x H x D) with 10 I/O points and CompoBus/S Master offers versatile expandability to construct systems meeting on-site needs.
- A large number of expansion I/O points reduces system construction cost.
  Up to three Expansion Terminals can be connected. Furthermore, CompoBus/S Remote Terminals can be used for expansion I/O points.
  Not only in-panel wiring but also external wiring is simplified. Furthermore, the miniaturization of the control panel reduces cable, terminal block, and wiring costs.
- Easy System Designing, Modification, and Expansion
  CompoBus/S Remote Terminals with high-speed bus communications and no complicated wiring can be used as expansion terminal blocks with minimal modifications as long as room for expansion is reserved at the designing stage.
- A calendar/clock ensures easy machinery control, including data collection and error logs with date and time stamps. This functionality can be used as a weekly timer as well.



Ordering Information

Unit		Inputs	Outputs	Clock	Model
10 points (6 inputs/4 outputs)	Connector model	6 points at 24 VDC	4 transistor sinking outputs	Yes	CPM2C-S100C
			4 transistor sourcing outputs	Yes	CPM2C-S110C

Specifications

■ General Specifications

Item		Specification
Control method		Stored program method
I/O control method		Cyclic scan method (Immediate refreshing can be performed with IORF(97).)
Programming language		Ladder diagram
Instruction length		1 step per instruction 1 to 5 words per instruction
Instructions	Basic instructions	14
	Special instructions	105 instructions, 185 variations
Execution time	Basic instructions	0.64 μs (LD instruction)
	Special instructions	7.8 μs (MOV instruction)
Program capacity		4,096 words
Max. I/O capacity		CPU Unit only: 10 points Expansion I/O Unit: 96 points (32-point Expansion I/O Unit x 3) (Up to 3 Expansion Units can be connected.) CompoBus/S: 256 points (362 points in total)
Input bits		IR 00000 to IR 00915 (Bits not used for input bits can be used for work bits.)
Output bits		IR 01000 to IR 01915 (Bits not used for output bits can be used for work bits.)
CompoBus/S input bits		128 bits: IR 02000 to IR 02715 (words IR 020 to IR 027)
CompoBus/S output bits		128 bits: IR 03000 to IR 03715 (words IR 030 to IR 037)
Work bits		672 bits: IR 02800 to IR 02915 (words IR 028 to IR 029) IR 03800 to IR 03915 (words IR 038 to IR 039) IR 04000 to IR 04915 (words IR 040 to IR 049) IR 20000 to IR 22715 (words IR 200 to IR 227)
Special bits (SR area)		440 bits: SR 22800 to SR 25507 (words SR 228 to SR 255)
Temporary bits (TR area)		8 bits: (TR 0 to TR 7)
Holding bits (HR area)		320 bits: HR 0000 to HR 1915 (words HR 00 to HR 19)
Auxiliary bits (AR area)		384 bits: AR 0000 to AR 2315 (words AR 00 to AR 23) These include CompoBus/S slave status flags (words AR 04 to AR 07).
Link bits (LR area)		256 points: LR 0000 to LR 1515 (words LR 00 to LR 15)
Timers/Counters		256 timers/counters: TIM/CNT 000 to TIM/CNT 255 1-ms timers: TMHH (--) 10-ms timers: TIMH (15) 100-ms timers TIM 1-s/10-s timers: TIML (--) Decrementing counters: CNT Reversible counters: CNTR (12)
Data memory	Read/Write	2,048 words (DM 0000 to DM 2047) The Error Log is contained in DM 2000 to DM 2021.
	Read only	456 words (DM 6144 to DM 6599)
	PC Setup	56 words (DM 6600 to DM 6655)
Basic interrupt functions	Interrupt inputs	2 interrupts (Used for both counter mode interrupts inputs and quick-response inputs.
	Scheduled interrupts	1 interrupt

Item		Specification
High-speed counter functions	High-speed counters	1 counter (single phase at 20 kHz or 2 phases at 5 kHz)
	Counter interrupts	1 interrupt (set value comparison or set-value range comparison)
	Interrupt inputs (counter mode)	2 interrupts (Used for both external interrupts inputs and quick-response inputs.)
	Count-up interrupts	2 interrupts (Used for both external interrupts inputs and quick-response inputs.)
Quick-response inputs		2 points (Used for both external interrupts inputs and counter mode interrupt inputs.) Min. input pulse width: 50 μs max.
Pulse output		2 points with no acceleration/deceleration, 10 Hz to 10 kHz each, and no direction control: 1 point with trapezoid acceleration/deceleration, 10 Hz to 10 kHz with direction control: or 2 points with variable duty-ratio outputs
Synchronized pulse control		1 point
Input time constant (ON response time = OFF response time)		Can be set for CPU Unit inputs and Expansion Unit inputs only (1, 2, 3, 5, 10, 20, 40, or 80 ms)
Clock		Equipped with clock (built-in RTC)
Communications functions		Peripheral port: Supports Host Link, peripheral bus, no-protocol communications, and Programming Console connections. RS-232C port: Supports Host Link, no-protocol communications, 1-to-1 Link, or 1-to-1 NT Link connections.
Power failure backup function		Data in HR, AR, Counter (CNT), and Data Memory (DM) areas is held.
Memory backup		Non-volatile (flash) memory: Program, read-only DM area, and PC Setup
		Memory backup (lithium battery: 2 years lifetime): DM area, HR area, AR area, and counter values
Self-diagnostic functions		CPU error (watchdog timer), memory errors, communications errors, setting errors, battery errors, and expansion I/O bus errors
Program check		No END instruction, programming errors (checked when operation is started)
Programming devices	Programming Console	C200H-PRO27, CQM1-PRO01, or CQM1H-PRO01
	SSS	IBM PC/AT or compatible (SYSMAC Support Software version 1.1 or higher)
	CPT	Windows
	CX-P	Windows

Note: Connecting Cable (CPM2C-CN111, CS1W-CN114, or CS1W-CN118) is required to connect to the communications peripheral /RS-232C port.

■ Communications Specifications

Communications method		Special CompoBus/S protocol
Coding method		Manchester coding
Connection form		Combination of multi-drop method and T-branch connections (see note 1)
Baud rate		High-speed Communications Mode: 750 kbps Long-distance Communications Mode: 93.75 kbps (see note 2)
Communications cycle time	**High-speed Communications Mode**	0.5 ms (with 8 input and 8 output slaves connected)
		0.8 ms (with 16 input and 16 output slaves connected)
	Long-distance Communications Mode	4.0 ms (with 8 input and 8 output slaves connected)
		6.0 ms (with 16 input and 16 output slaves connected)
Communications media		2-conductor cable (VCTF 0.75 x 2), 4-conductor cable (VCTF 0.75 x 4), or Special Flat Cable
Communications distance	**High-speed Communications Mode**	2-conductor VCTF cable: Main line length: 100 m max. Branch line length: 3 m max. Total branch line length: 50 m max. Special Flat Cable, 4-conductor VCTF cable: Main line length: 30 m max. Branch line length: 3 m max. Total branch line length: 30 m max. (When Special Flat Cable is used to connect fewer than 16 Slaves, the main line can be up to 100 m long and the total branch line length can be up to 50 m.)
	Long-distance Communications Mode	2-conductor VCTF cable: Main line length: 500 m max. Branch line length: 6 m max. Total branch line length: 120 m max. Special Flat Cable, 4-conductor VCTF cable: Variable branch wiring (total cable length 200 m max.) (There are no limits on the branching format or main, branch, or total line lengths. The terminator must be connected to the point in the system farthest from the master.)
Maximum number of nodes		32
Error control checks		Manchester code check, frame length check, and parity check

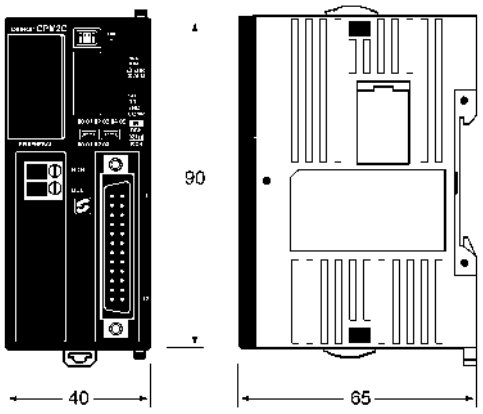
Note: 1. A terminator must be connected to the point in the system farthest from the Master.

2. The baud rate is switched using DM settings (default setting is 750 kbps).

Dimensions

Note: All units are in millimeters unless otherwise indicated.

CPM2C-S100C
CPM2C-S110C



Note: Refer to *CPM2C-S Programmable Controller Operation Manual* (W377) for detailed specifications.

OMRON

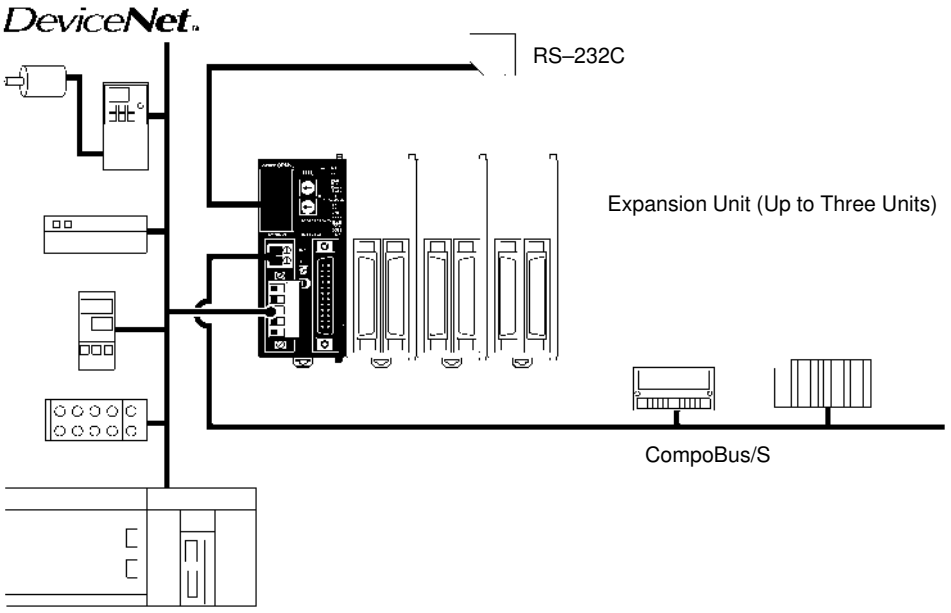
Programmable Slaves

CPM2C-S1□0C-DRT

Multi-functional Slave for Distributed Blocks

An entire installation consisting of sensors and actuators is handled as a DeviceNet slave.
Powerfully supports the device distribution and production of standard units while standardizing programs and decreasing the load on the master. Conventional distributed I/O control networks do not allow I/O checks or operation checks until all devices on the networks are assembled and connected. Programmable Slaves, however, allow I/O and operation checks on any distributed unit independently.

- DeviceNet Slave Functions
  Supports multi-word I/O Links and message communications, making it possible for the master to control the data of all the slaves on the network. Data that does not need immediate transmission, such as log data, can be transmitted in blocks using message communications.
- CompoBus/S Master Functions
  Connects to remote signal lights, pushbutton switches, terminal blocks, and pneumatic valves from other companies over VCTF or easy-to-branch flat cable.
- RS-232C Communications
  Connects to the BCRs and PTs to process data, alleviating the load on the master.
- Expansion Unit (Up to Three Units)
  A single node is used to control distributed blocks and decrease the size of the communications block in multi-point operation, thus making the cost reduction of the system possible.



Ordering Information

Unit		Inputs	Outputs	Clock	Model
10 points (6 inputs/4 outputs)	Connector model	6 points at 24 VDC	4 transistor sinking outputs	Yes	CPM2C-S100C-DRT
			4 transistor sourcing outputs	Yes	CPM2C-S110C-DRT

Specifications

■ General Specifications

Item		Specification
Control method		Stored program method
I/O control method		Cyclic scan method (Immediate refreshing can be performed with IORF(97).)
Programming language		Ladder diagram
Instruction length		1 step per instruction 1 to 5 words per instruction
Instructions	Basic instructions	14
	Special instructions	105 instructions, 185 variations
Execution time	Basic instructions	0.64 μs (LD instruction)
	Special instructions	7.8 μs (MOV instruction)
Program capacity		4,096 words
Max. I/O capacity		CPU Unit only: 10 points Expansion I/O Unit: 96 points (32-point Expansion I/O Unit x 3) (Up to 3 Expansion Units can be connected.) CompoBus/S: 256 points (362 points in total)
Input bits		IR 00000 to IR 00915 (Bits not used for input bits can be used for work bits.)
Output bits		IR 01000 to IR 01915 (Bits not used for output bits can be used for work bits.)
CompoBus/S input bits		128 bits: IR 02000 to IR 02715 (words IR 020 to IR 027)
CompoBus/S output bits		128 bits: IR 03000 to IR 03715 (words IR 030 to IR 037)
Work bits		672 bits: IR 02800 to IR 02915 (words IR 028 to IR 029) IR 03800 to IR 03915 (words IR 038 to IR 039) IR 04000 to IR 04915 (words IR 040 to IR 049) IR 20000 to IR 22715 (words IR 200 to IR 227)
Special bits (SR area)		440 bits: SR 22800 to SR 25507 (words SR 228 to SR 255)
Temporary bits (TR area)		8 bits: (TR 0 to TR 7)
Holding bits (HR area)		320 bits: HR 0000 to HR 1915 (words HR 00 to HR 19)
Auxiliary bits (AR area)		384 bits: AR 0000 to AR 2315 (words AR 00 to AR 23) These include CompoBus/S slave status flags (words AR 04 to AR 07).
Link bits (LR area)		256 points: LR 0000 to LR 1515 (words LR 00 to LR 15)
Timers/Counters		256 timers/counters: TIM/CNT 000 to TIM/CNT 255 1-ms timers: TMHH (--) 10-ms timers: TIMH (15) 100-ms timers TIM 1-s/10-s timers: TIML (--) Decrementing counters: CNT Reversible counters: CNTR (12)
Data memory	Read/Write	2,048 words (DM 0000 to DM 2047) The Error Log is contained in DM 2000 to DM 2021.
	Read only	456 words (DM 6144 to DM 6599)
	PC Setup	56 words (DM 6600 to DM 6655)
DeviceNet slave functions		DeviceNet Remote I/O Link No. of I/O Link points: 1,024 max. Explicit message communications Any PC data area can be accessed from the master.
Basic interrupt functions	Interrupt inputs	2 interrupts (Used for both counter mode interrupts inputs and quick-response inputs.
	Scheduled interrupts	1 interrupt

Item			Specification
High-speed counter functions	High-speed counters		1 counter (single phase at 20 kHz or 2 phases at 5 kHz)
		Count er interrupts	1 interrupt (set value comparison or set-value range comparison)
	Interrupt inputs (counter mode)		2 interrupts (Used for both external interrupts inputs and quick-response inputs.)
		Count-up interrupts	2 interrupts (Used for both external interrupts inputs and quick-response inputs.)
Quick-response inputs			2 points (Used for both external interrupts inputs and counter mode interrupt inputs.) Min. input pulse width: 50 μs max.
Pulse output			2 points with no acceleration/deceleration, 10 Hz to 10 kHz each, and no direction control: 1 point with trapezoid acceleration/deceleration, 10 Hz and 10 kHz with no direction control: or 2 points with variable duty-ratio outputs
Synchronized pulse control			1 point
Input time constant (ON response time = OFF response time)			Can be set for CPU Unit inputs and Expansion Unit inputs only (1, 2, 3, 5, 10, 20, 40, or 80 ms)
Clock			Equipped with clock (built-in RTC)
Communications functions			Peripheral port: Supports Host Link, peripheral bus, no-protocol communications, and Programming Console connections. RS-232C port: Supports Host Link, no-protocol communications, 1-to-1 Link, or 1-to-1 NT Link connections.
Power failure backup function			Data in HR, AR, Counter (CNT), and Data Memory (DM) areas is held.
Memory backup			Non-volatile (flash) memory: Program, read-only DM area, and PC Setup
			Memory backup (lithium battery: 2 years lifetime): DM area, HR area, AR area, and counter values
Self-diagnostic functions			CPU error (watchdog timer), memory errors, communications errors, setting errors, battery errors, and expansion I/O bus errors
Program check			No END instruction, programming errors (checked when operation is started)
Programming devices	Programming Console		C200H-PRO27, CQM1-PRO01, or CQM1H-PRO01
	SSS		IBM PC/AT or compatible (SYSMAC Support Software version 1.1 or higher)
	CPT		Windows
	CX-P		Windows

Note: Connecting Cable (CPM2C-CN111, CS1W-CN114, or CS1W-CN118) is required to connect to the communications peripheral /RS-232C port.

■ Communications Specifications

DeviceNet

Communications protocol		DeviceNet
Connection form		Combination of multi-drop and T-branch connections (see note 1)
Baud rate		500, 250, or 125 kbps (switchable)
Communications media		Special 5-conductor cable (2 signal lines, 2 power supply lines, and 1 shield line)
Communications distance	**Baud rate**	500 kbps: Max. network length (see note 2): 100 m max. (see note 3) Main line length: 6 m max. Total branch line length: 39 m max. 250 kbps: Max. network length (see note 2): 250 m max. (see note 3) Main line length: 6 m max. Total branch line length: 78 m max. 125 kbps: Max. network length (see note 2): 500 m max. (see note 3) Main line length: 6 m max. Total branch line length: 156 m max.
Max. number of connecting nodes		64 (63 slaves and 1 master)
Error control checks		CRC error, node address duplication check, and scan list verification

Note: 1. A terminator must be connected to the point in the system farthest from the Master.

2. The maximum network length is the distance from the master to the farthest node.

3. When Thin Cable is used for the main line, the main line must be 100 m or less in length.

CompoBus/S

Communications method		Special CompoBus/S protocol
Coding method		Manchester coding
Connection form		Combination of multi-drop method and T-branch connections (see note 1)
Baud rate		High-speed Communications Mode: 750 kbps Long-distance Communications Mode: 93.75 kbps (see note 2)
Communications cycle time	**High-speed Communications Mode**	0.5 ms (with 8 input and 8 output slaves connected)
		0.8 ms (with 16 input and 16 output slaves connected)
	Long-distance Communications Mode	4.0 ms (with 8 input and 8 output slaves connected)
		6.0 ms (with 16 input and 16 output slaves connected)
Communications media		2-conductor cable (VCTF 0.75 x 2), 4-conductor cable (VCTF 0.75 x 4), or Special Flat Cable
Communications distance	**High-speed Communications Mode**	2-conductor VCTF cable: Main line length: 100 m max. Branch line length: 3 m max. Total branch line length: 50 m max. Special Flat Cable, 4-conductor VCTF cable: Main line length: 30 m max. Branch line length: 3 m max. Total branch line length: 30 m max. (When Special Flat Cable is used to connect fewer than 16 Slaves, the main line can be up to 100 m long and the total branch line length can be up to 50 m.)
	Long-distance Communications Mode	2-conductor VCTF cable: Main line length: 500 m max. Branch line length: 6 m max. Total branch line length: 120 m max. Special Flat Cable, 4-conductor VCTF cable: Variable branch wiring (total cable length 200 m max.) (There are no limits on the branching format or main, branch, or total line lengths. The terminator must be connected to the point in the system farthest from the master.)
Maximum number of nodes		32
Error control checks		Manchester code check, frame length check, and parity check

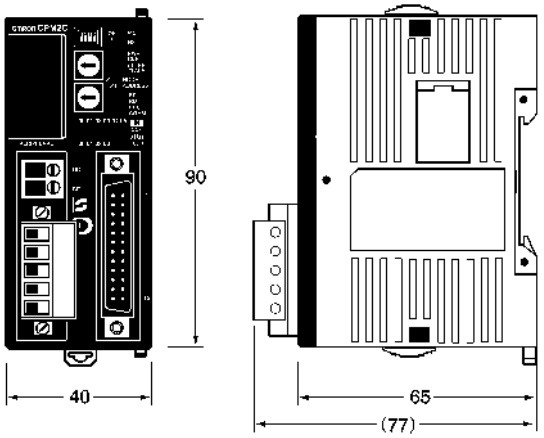
Note: 1. A terminator must be connected to the point in the system farthest from the Master.

2. The baud rate is switched using DM settings (default setting is 750 kbps).

Dimensions

Note: All units are in millimeters unless otherwise indicated.

CPM2C-S100C-DRT
CPM2C-S110C-DRT



Note: Refer to *CPM2C-S Programmable Controller Operation Manual* (W377) for detailed specifications.

OMRON

Master Control Units (S-Controllers)

SRM1-C01-V2/C02-V2

Subminiature, Stand-alone Model with CompoBus/S Master and SYSMAC Controller Functions

- Maximum number of Remote I/O points per Master: 256
- Maximum number of Slaves per Master: 32
- Communications cycle time: 0.5 ms max. (at baud rate 750 kbps).
- Communications distance: Extended to 500 m max. (at baud rate 93.75 kbps).
- Additional instructions (PID, SCL, NEG, ZCP) ensure analog compatibility.
- RS-232C port incorporated (SRM1-C02-V2).

Ordering Information

Specifications		Model
Built-in stand-alone controller functions	Without RS-232C	SRM1-C01-V2
	With RS-232C	SRM1-C02-V2

Specifications

■ Master Specifications

Number of I/O points	256 points (128 inputs/128 outputs) 128 points (64 inputs/64 outputs) Selectable by DM setting. The default setting is 256 points.
Max. number of Slaves per Master	256 points: 32 128 points: 16
I/O words	Input words: 000 to 007 Output words: 010 to 017
Programming language	Ladder diagram
Types of instruction	14 basic and 81 special instructions (125 instructions in total)
Execution time	LD instruction: 0.97 μs MOV instruction: 9.1 μs
Program capacity	4,096 words
Data memory	2,022 + 512 (read-only) words
Timers/Counters	128 timers/counters
Work bits	640 bits
Memory backup	Flash memory (without battery): User programs Lithium battery: Data memory etc. (Battery life: 10 years min. at an ambient temperature of 25°C.)
Peripheral port	1 point
RS-232C port	1 point (SRM1-C02 only) Host Link, NT Link, 1:1 Link, or no protocol
Programming tool	Programming Consoles: CQM1-PRO01-E, C200H-PRO27-E CX-Programmer (Supported for versions 2 or later.) WS02-CXP1-E SYSMAC Support Software (MS-DOS version): C500-ZL3AT1-E

■ Communications Specifications

Communications method		CompoBus/S protocol
Coding method		Manchester coding method
Connection method		Multi-drop method and T-branch method (see note 1)
Communications baud rate		750,000 bps/93,750 bps (see note 2)
Communications cycle time	**High-speed communications mode**	0.5 ms with 8 Slaves for inputs and 8 Slaves for outputs
		0.8 ms with 16 Slaves for inputs and 16 Slaves for outputs
	Long-distance communications mode	4.0 ms with 8 Slaves for inputs and 8 Slaves for outputs
		6.0 ms with 16 Slaves for inputs and 16 Slaves for outputs
Communications cable		2-conductor VCTF cable (0.75 x 2), 4-conductor VCTF cable (0.75 x 4) Dedicated flat cable
Communications distance	**High-speed communications mode**	2-conductor VCTF cable: Main line length: 100 m max. Branch line length: 3 m max. Total branch line length: 50 m max. Flat cable, 4-conductor VCTF cable: Main line length: 30 m max. Branch line length: 3 m max. Total branch line length: 30 m max. (When flat cable is used to connect fewer than 16 Slaves, the main line can be up to 100 m long and the total branch line length can be up to 50 m.)
	Long-distance communications mode	2-conductor VCTF cable: Main line length: 500 m max. Branch line length: 6 m max. Total branch line length: 120 m max. Flat cable, 4-conductor VCTF cable: Variable branch wiring (total cable length 200 m max.) (There are no limits on the branching format or main, branch, or total line lengths. The terminator must be connected to the point in the system farthest from the master.)
Max. number of connecting nodes		32
Error control checks		Manchester code check, frame length check, and parity check

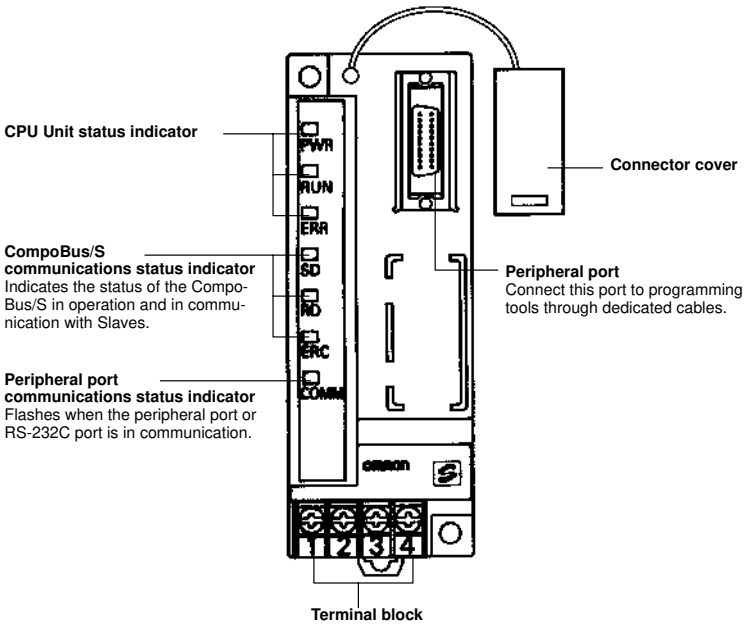
Note: 1. A terminator must be connected to the point in the system farthest from the Master.
2. The communications baud rate is switched using DM settings (default setting is 750,000 bps).

■ General Specifications

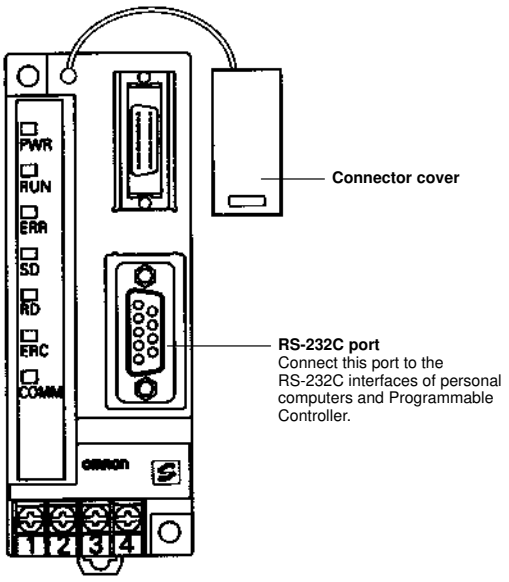
Supply voltage	24 VDC
Allowable supply voltage	20.4 to 26.4 VDC
Power consumption	3.5 W max.
Inrush current	12.0 A max.
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8 m/s^2 in X, Y, and Z directions for 80 minutes each (Time coefficient; 8 minutes × coefficient factor 10 = total time 80 minutes)
Shock resistance	147 m/s^2 three times each in X, Y, and Z directions
Ambient temperature	Operating: 0°C to 55°C Storage: –20°C to 75°C
Humidity	10% to 90% (with no condensation)
Atmosphere	Must be free from corrosive gas.
Terminal screw size	M3
Power interrupt time	DC type: 2 ms min.
Weight	150 g max.

Nomenclature

SRM1-C01-V2



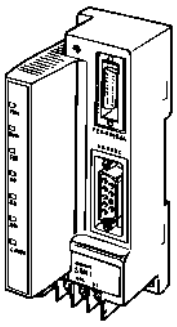
SRM1-C02-V2

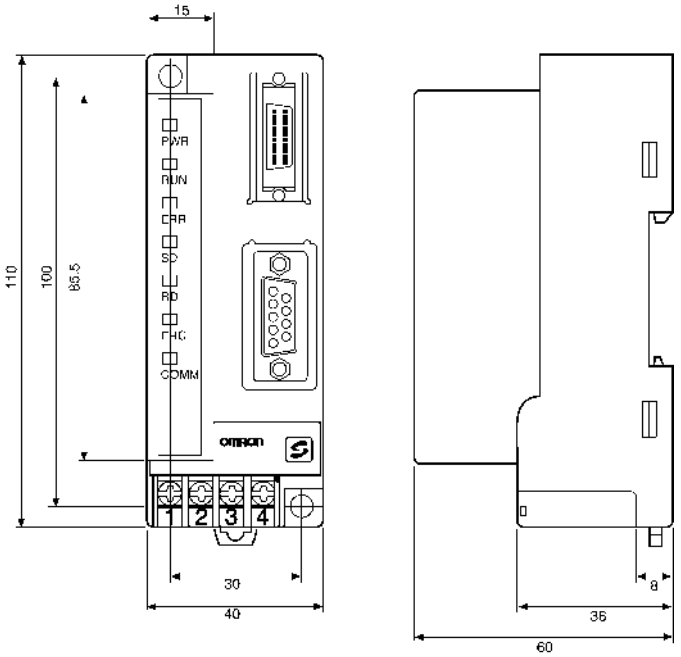


Dimensions

Note: All units are in millimeters unless otherwise indicated.

SRM1-C01/C02-V2





The above dimensions apply to the SRM1-C02-V2. The SRM1-C01-V2 has no RS-232C port.

Precautions

For details on safety precautions, refer to the *CompoBus/S Master Control Units Operation Manual* (W318).

OMRON

Master Unit

C200HW-SRM21-V1

Master Unit for CS1, C200HX, C200HG, C200HE, and C200HS

- A maximum of 256 I/O points available.
- Connects to a maximum of 32 Slaves.
- Communications cycle time: 0.5 ms max. (at baud rate 750 kbps).
- Communications distance: Extended to 500 m max. (at baud rate 93.75 kbps).
- Connection to Analog Terminals now supported.

Ordering Information

PC	Max. number of I/O points	Model
C200HX (-Z), C200HG (-Z), C200HE (-Z), C200HS, CS1	256 points (128 inputs/128 outputs)	C200HW-SRM21-V1

Specifications

■ Communications Specifications

Communications method		CompoBus/S protocol
Coding method		Manchester coding method
Connection method		Multi-drop method and T-branch method (see note 1)
Communications baud rate		750,000 bps, 93,750 bps (see note 2)
Communications cycle time	**High-speed communications mode**	0.5 ms with 8 Slaves for inputs and 8 Slaves for outputs
		0.8 ms with 16 Slaves for inputs and 16 Slaves for outputs
	Long-distance communications mode	4.0 ms with 8 Slaves for inputs and 8 Slaves for outputs
		6.0 ms with 16 Slaves for inputs and 16 Slaves for outputs
Communications cable		2-conductor VCTF cable (0.75 x 2), 4-conductor VCTF cable (0.75 x 4) Special Flat Cable
Communications distance	**High-speed communications mode**	2-conductor VCTF cable: Main line length: 100 m max. Branch line length: 3 m max. Total branch line length: 50 m max. Special Flat Cable, 4-conductor VCTF cable: Main line length: 30 m max. Branch line length: 3 m max. Total branch line length: 30 m max. (When Special Flat Cable is used to connect fewer than 16 Slaves, the main line can be up to 100 m long and the total branch line length can be up to 50 m.)
	Long-distance communications mode	2-conductor VCTF cable: Main line length: 500 m max. Branch line length: 6 m max. Total branch line length: 120 m max. Special Flat Cable, 4-conductor VCTF cable: Variable branch wiring (total cable length 200 m max.) (There are no limits on the branching format or main, branch, or total line lengths. The terminator must be connected to the point in the system farthest from the master.)
Max. number of connecting nodes		32
Error control checks		Manchester code check, frame length check, and parity check

Note: 1. A terminator must be connected to the point in the system farthest from the Master.

2. The communications baud rate is switched with the DIP switch.

■ Unit Specifications

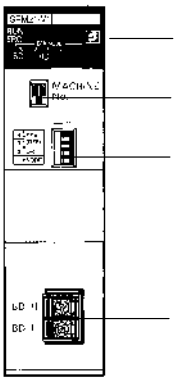
Current consumption		150 mA max. at 5 VDC
Number of I/O points		256 points (128 inputs/128 outputs), 128 points (64 inputs/64 outputs) (switchable)
Number of occupied words		256 points: 20 words (8 input words/8 output words, 4 status data) 128 points: 10 words (4 input words/4 output words, 2 status data)
PLC		CS1, C200HX (-ZE), C200HG (-ZE), C200HE (-ZE), C200HS
Number of Master Units mountable	**C200HE**	128 points: 10, 256 points: 5
	C200HG-CPU33/43	128 points: 10, 256 points: 5
	C200HG-CPU53/63	128 points: 16, 256 points: 8
	C200HX-CPU34/44	128 points: 10, 256 points: 5
	C200HX-CPU54/64	128 points: 16, 256 points: 8
	C200HS	128 points: 10, 256 points: 5
	CS1	128 points: 16, 256 points: 8
Number of points per node number		8 points
Max. number of Slaves per Master		32
Status data		Communications Error Flag and Active Slave Node (see note)
Weight		200 g max.
Approved standards		UL 508 (E95399), CSA C22.2 No. 142 (LR51460)

Note: These flags use the AR area.

■ Ratings

The ratings of the Unit are the same as those of the CS1, C200HX, C200HG, C200HE, and C200HS.

Nomenclature



Indicators
Indicates the operating status of the Master Unit and the status of communications with the Slaves.

Rotary Switch
This switch sets the Master's one-digit hexadecimal unit number.

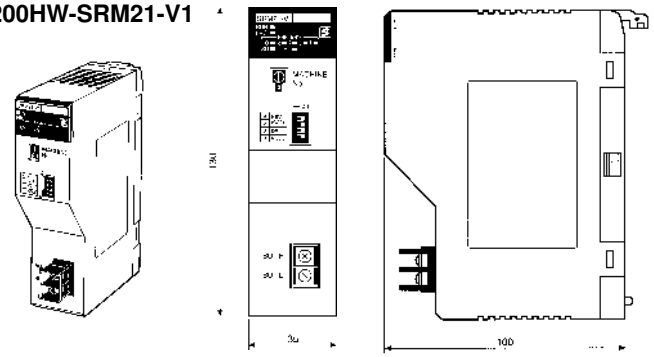
DIP Switch
These pins have the following functions:
Pin 1: Max. number of Slaves setting
Pin 2: Baud rate setting
Pins 3 to 4: Reserved (Always OFF.)

Communications Terminals
Connect the Slaves' transmission cable to these terminals.

Dimensions

Note: All units are in millimeters unless otherwise indicated.

C200HW-SRM21-V1



Note: Refer to the *C200HX, C200HG, C200HE, C200HS*, or *CS1 Operation Manual* for details on the dimensions when the Master Unit is installed in the PC's Backplane.

Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

OMRON

Master Unit

CQM1-SRM21-V1

Master Unit for CQM1/CQM1H

- A maximum of 128 I/O points available (Possible to set 32, 64, or 128 I/O points).
- Connects to a maximum of 16/32 Slaves.
- Communications cycle time: 0.5 ms max. (at baud rate 750 kbps).
- Communications distance: Extended to 500 m max. (at baud rate 93.75 kbps).
- Connection to Analog Terminals now supported.

Ordering Information

PLC	Max. number of I/O points	Model
CQM1-series PLC	128 points (64 inputs/64 outputs)	CQM1-SRM21-V1

Specifications

■ Communications Specifications

Communications method		CompoBus/S protocol
Coding method		Manchester coding method
Connection method		Multi-drop method and T-branch method (see note 1)
Communications baud rate		750,000 bps, 93,750 bps (see note 2)
Communications cycle time	**High-speed communications mode**	0.5 ms with 8 Slaves for inputs and 8 Slaves for outputs
		0.8 ms with 16 Slaves for inputs and 16 Slaves for outputs
	Long-distance communications mode	4.0 ms with 8 Slaves for inputs and 8 Slaves for outputs
		6.0 ms with 16 Slaves for inputs and 16 Slaves for outputs
Communications cable		2-conductor VCTF cable (0.75 x 2), 4-conductor VCTF cable (0.75 x 4) Special Flat Cable
Communications distance	**High-speed communications mode**	2-conductor VCTF cable: Main line length: 100 m max. Branch line length: 3 m max. Total branch line length: 50 m max. Special Flat Cable, 4-conductor VCTF cable: Main line length: 30 m max. Branch line length: 3 m max. Total branch line length: 30 m max. (When Special Flat Cable is used to connect fewer than 16 Slaves, the main line can be up to 100 m long and the total branch line length can be up to 50 m.)
	Long-distance communications mode	2-conductor VCTF cable: Main line length: 500 m max. Branch line length: 6 m max. Total branch line length: 120 m max. Special Flat Cable, 4-conductor VCTF cable: Variable branch wiring (total cable length 200 m max.) (There are no limits on the branching format or main, branch, or total line lengths. The terminator must be connected to the point in the system farthest from the master.)
Max. number of connecting nodes		32
Error control checks		Manchester code check, frame length check, and parity check

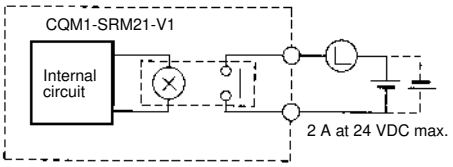
Note: 1. A terminator must be connected to the point in the system farthest from the Master.

2. The communications baud rate is switched with the DIP switch.

■ Unit Specifications

Current consumption	180 mA max. at 5 VDC
Number of I/O points	128 points (64 inputs/64 outputs), 64 points (32 inputs/32 outputs), 32 points (16 inputs/16 outputs) (switchable)
Number of occupied words	128 points: 4 input words/4 output words 64 points: 2 input words/2 output words 32 points: 1 input word/1 output word
PC	128 points: CQM1-CPU41-EV1/CPU42-EV1/CPU43-EV1/CPU44-EV1 64 points: CQM1-CPU11-E/CPU21-E/CPU41-EV1/CPU42-EV1/CPU43-EV1/CPU44-EV1 32 points: CQM1-CPU11-E/CPU21-E/CPU41-EV1/CPU42-EV1/CPU43-EV1/CPU44-EV1
Number of points per node number	4/8 points (switchable)
Max. number of Slaves per Master	32 (4 points per node number)
Status data	Alarm terminal output
Weight	200 g max.
Approved standards	UL 508 (E95399), CSA C22.2 No. 142 (LR51460)

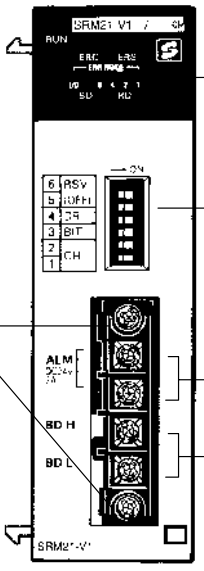
■ Alarm Output Specifications

Maximum switching capacity	2 A at 24 VDC
Minimum switching capacity	10 mA at 5 VDC
Relay	G6D-1A
Minimum ON time	100 ms
Circuit configuration	

■ Ratings

The ratings of the Unit are the same as those for the CQM1.

Nomenclature



Terminal block screws

These screws attach the terminal block. The terminal block can be removed when these screws are loosened.

Indicators

Indicates the operating status of the Master Unit and the status of communications with the Slaves.

DIP Switch

These pins have the following functions:
Pins 1 and 2: PC word allocation setting
Pin 3: Number of points setting
Pin 4: Baud rate setting
Pins 5 to 6: Reserved (Always OFF.)

Alarm Output Terminals

These terminals are shorted when an error occurs. Connect to a warning device.

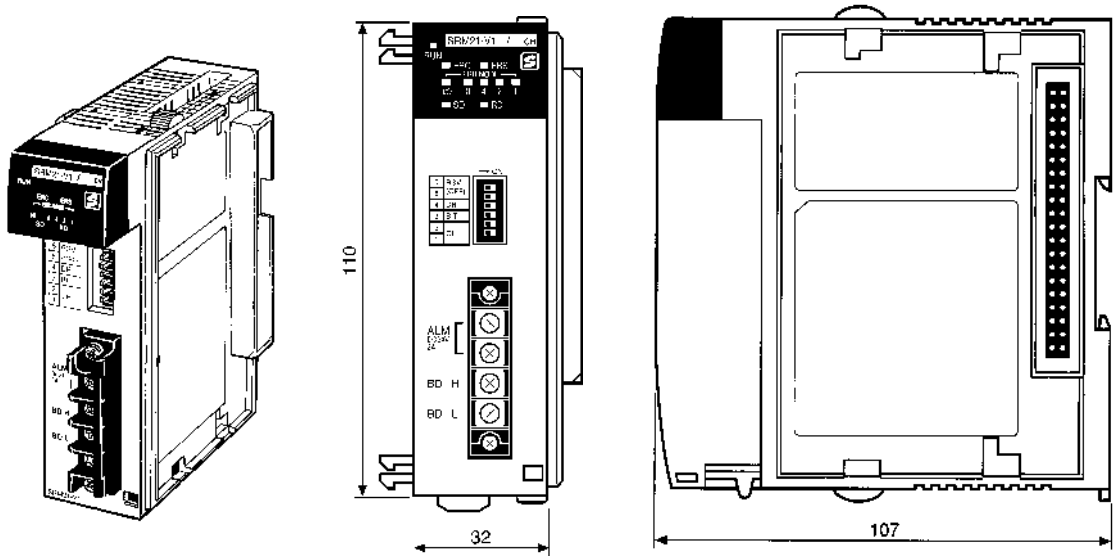
Communications Terminals

Connect the Slaves' transmission cable to these terminals.

Dimensions

Note: All units are in millimeters unless otherwise indicated.

CQM1-SRM21-V1



Note: Refer to the *CQM1 Operation Manual* for details on the dimensions when the Master Unit is installed in the PC's Backplane.

Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

OMRON

SYSMAC Boards with CompoBus/S Master

C200PC-ISA□3-SRM

Intelligent Computer Board that Integrates SYSMAC C200HX/HG/HE and CompoBus/S Master Functions Equipped with Backup Power Supply System

- Can be mounted to an ISA bus, the standard bus for IBM compatible computers, thus contributing to the downsizing of installations using computers.
- Communications between the SYSMAC Board and the computer are performed via an ISA bus, enabling a communications speed much higher than with RS-232C communications.
- Incorporates CompoBus/S communications functions. Simply connect a CompoBus/S Slave to enable distributed control of I/O in remote locations.
- A power supply sub-board is also available. This makes it possible to provide power externally, and allows control to be continued even when the computer power supply is interrupted.
- Data settings at CompoBus/S Slaves are reflected automatically.
- Enables communications at a maximum distance of 500 m (at a baud rate of 93.75 kbps).
- Conforms to EC Directives.

Ordering Information

PLC	Max. number of I/O points	Model
C200HG-CPU43	256 points (128 inputs/128 outputs)	C200PC-ISA03-SRM
C200HX-CPU64		C200PC-ISA13-SRM

Specifications

■ Communications Specifications

Communications method		CompoBus/S protocol
Coding method		Manchester coding method
Connection method		Multi-drop method and T-branch method (see note)
Communications baud rate		750,000 bps, 93,750 bps
Communications cycle time		0.5 ms with 8 Slaves for inputs and 8 Slaves for outputs 0.8 ms with 16 Slaves for inputs and 16 Slaves for outputs
Communications cable		2-conductor VCTF cable (0.75 x 2), 4-conductor VCTF cable (0.75 x 4) Special Flat Cable
Communications distance	**High-speed communications mode**	2-conductor VCTF cable: Main line length: 100 m max. Branch line length: 3 m max. Total branch line length: 50 m max. Special Flat Cable, 4-conductor VCTF cable: Main line length: 30 m max. Branch line length: 3 m max. Total branch line length: 30 m max. (When Special Flat Cable is used to connect fewer than 16 Slaves, the main line can be up to 100 m long and the total branch line length can be up to 50 m.)
	Long-distance communications mode	2-conductor VCTF cable: Main line length: 500 m max. Branch line length: 6 m max. Total branch line length: 120 m max. Special Flat Cable, 4-conductor VCTF cable: Variable branch wiring (total cable length 200 m max.) (There are no limits on the branching format or main, branch, or total line lengths. The terminator must be connected to the point in the system farthest from the master.)
Max. number of connecting nodes		32
Error control checks		Manchester code check, frame length check, and parity check

Note: A terminator must be connected to the point in the system farthest from the Master.

■ Unit Specifications

Power supply voltage	4.875 to 5.25 VDC
Current consumption	0.5 A max. (see note 1)
Number of I/O points	256 points (128 inputs/128 outputs), 128 points (64 inputs/64 outputs), (switchable)
Number of occupied words	256 points: 20 words (8 input words, 8 output words, and 4 status data words) (see note 2) 128 points: 10 words (4 input words, 4 output words, and 2 status data words)
Number of points per node number	8 points
Max. number of Slaves per Master	32
Status data	Communications Error Flag and Active Slave Node (see note 2)
Weight	350 g max.

Note: 1. The current consumption will be 0.8 A max. if the Programming Console is connected through the optional Expansion Board.
2. The occupied words are in the IR area.

I/O Link Unit

CPM2C-SRT21

I/O Link Unit for CPM2C

- Operates as a Slave of the CompoBus/S Master Unit.
- Exchanges eight inputs and eight outputs with the Master.
- Bears the CE marking.

Ordering Information

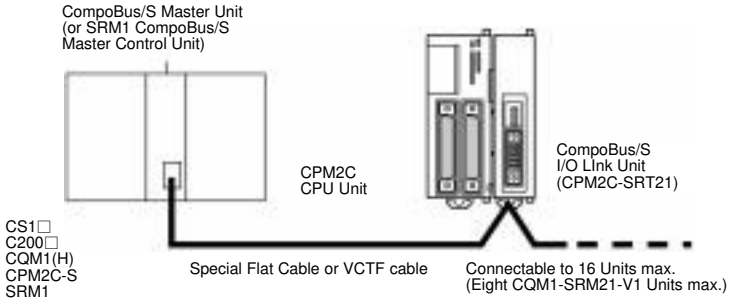
CompoBus I/O Link Unit

Name	Specifications	Model
CompoBus/S I/O Link Unit	Number of points for I/O links: 8 inputs and 8 outputs	CPM2C-SRT21

Application Examples

■ Conveyor Line

Processing speed can be increased and system setup labor reduced by creating a distributed system with a CPM2C at each conveyor.



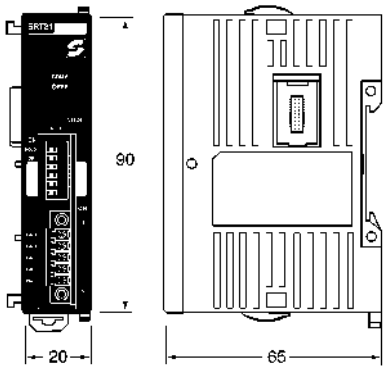
Specifications

Item	CPM2C-SRT21
Master/Slave	CompoBus/S Slave
Number of I/O points	8 inputs and 8 outputs
Number of words occupied in CPM2C's I/O memory	1 input word and 1 output word (allocated in the same way as for other Expansion Units)
Node address setting	DIP switch
Power consumption	1 W
Weight	150 g

Note: For details of CPM2C PLCs, refer to the CPM2C catalog (Cat. No. P049).

Dimensions

CPM2C-SRT21

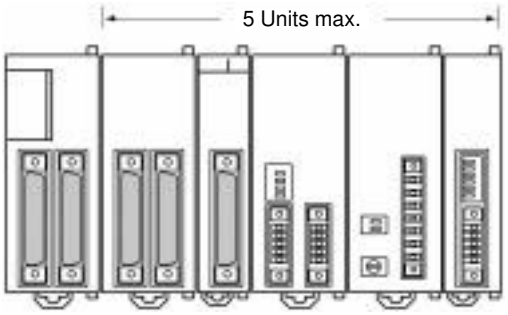


Installation

■ Number of I/O Units Connectable

Up to 5 Expansion Units can be connected to CPM2C PLCs. There are, however, only 9 input words and 9 output words that can be allocated to Expansion I/O Units: words IR 001 to IR 009 for inputs (the CPU Unit's inputs are allocated to IR 001) and words IR 011 to IR 019 for outputs (the CPU Unit's outputs are allocated to IR 010). Use Expansion I/O Units within these ranges. I/O words are allocated from the leftmost Unit.

Example



I/O Link Unit

CPM1A-SRT21

I/O Link Unit for CPM2A/CPM1A

- Operates as a Slave of the CompoBus/S Master Unit.
- Exchanges eight inputs and eight outputs with the Master.
- Approved by UL and CSA standards, and bears the CE marking.

Specifications

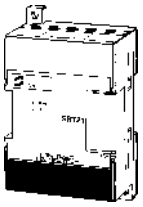
Master/Slave	CompoBus/S Slave
Number of I/O points	8 inputs and 8 outputs
Number of words occupied in CPM2A's I/O memory	1 input word and 1 output word (allocated in the same way as for other Expansion Units)
Node address setting	DIP switch

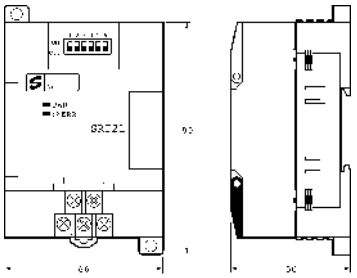
Note: For details of CPM1A PLCs, refer to the CPM1A catalog (Cat. No. P039). For details of CPM2A PLCs, refer to the CPM2A catalog (Cat. No. P049).

Dimensions

Note: All units are in millimeters unless otherwise indicated.

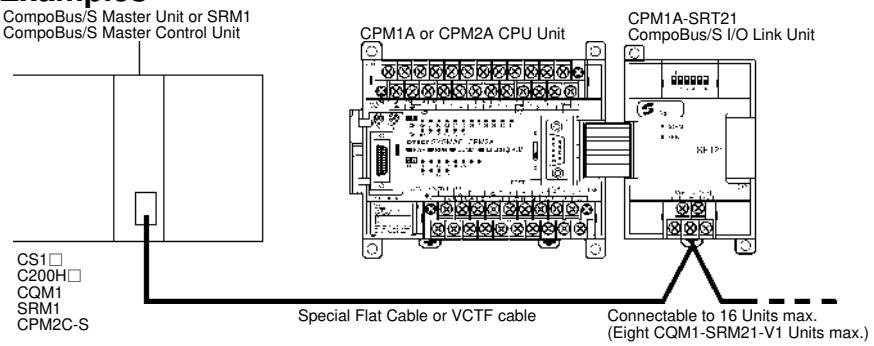
CPM1A-SRT21





Installation

■ Connection Examples



Note: A single CompoBus/S I/O Link Unit together with a maximum of two other Expansion I/O Units can be connected to the CPM1A or CPM2A CPU Unit.

OMRON

Transistor Remote I/O Terminals

SRT2-ID/OD(-1)

Long-distance Communications Supported by SRT2 Models (Long-distance/High-speed Communications Selection)

- Ultra-compact at 80 x 48 x 50 (W x H x D) mm for 4-point and 8-point terminals and 105 x 48 x 50 (W x H x D) mm for 16-point terminals.
- Two independent power supplies can be used because the I/O terminals are insulated from the internal circuits.
- DIN track mounting and screw mounting are both supported.

Ordering Information

I/O classification	Internal I/O circuit common	I/O points	Rated voltage	I/O rated voltage	Model
Input	NPN (+ common)	4	24 VDC	24 VDC	SRT2-ID04
	PNP (– common)				SRT2-ID04-1
Output	NPN (– common)				SRT2-OD04
	PNP (+ common)				SRT2-OD04-1
Input	NPN (+ common)	8			SRT2-ID08
	PNP (– common)				SRT2-ID08-1
Output	NPN (– common)				SRT2-OD08
	PNP (+ common)				SRT2-OD08-1
Input	NPN (+ common)	16			SRT2-ID16
	PNP (– common)				SRT2-ID16-1
Output	NPN (– common)				SRT2-OD16
	PNP (+ common)				SRT2-OD16-1

Note: For more details about connections supported by the Master Unit, refer to page 25.

Specifications

■ Ratings

Inputs

Input current	6 mA max./point
ON delay time	1.5 ms max.
OFF delay time	1.5 ms max.
ON voltage	15 VDC min. between each input terminal and V
OFF voltage	5 VDC max. between each input terminal and V
OFF current	1 mA max.
Insulation method	Photocoupler
Input indicators	LED (yellow)

Outputs

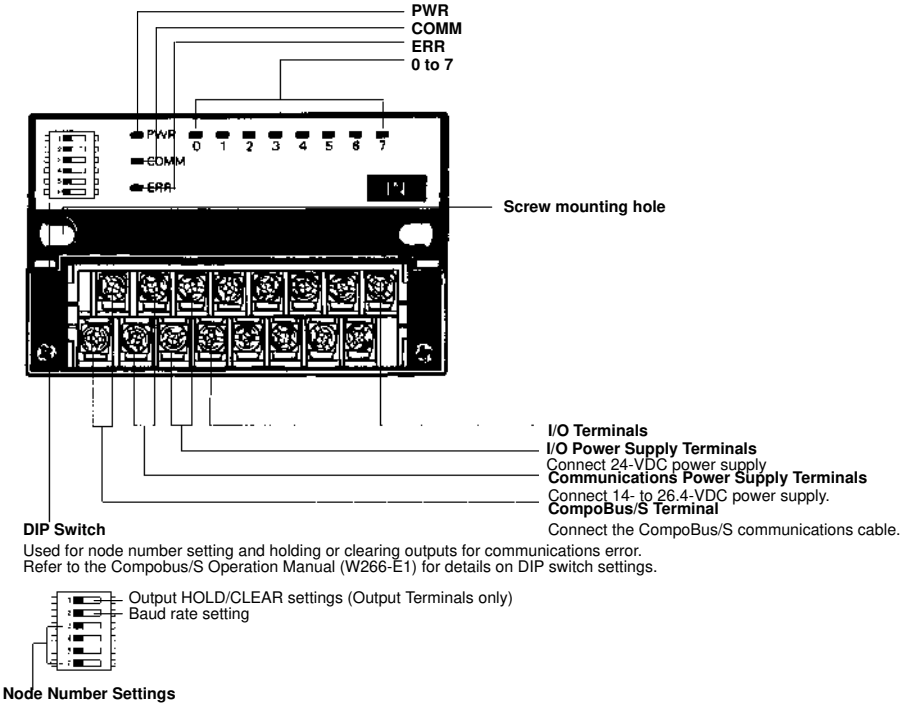
Rated output current	0.3 A/point
Residual voltage	0.6 V max.
Leakage current	0.1 mA max.
Insulation method	Photocoupler
Output indicators	LED (yellow)

■ Characteristics

Communications power supply voltage	14 to 26.4 VDC
I/O power supply voltage	24 VDC $^{+10\%}_{-15\%}$
I/O power supply current	1 A max.
Current consumption (see note)	50 mA max. at 24 VDC
Connection method	Multi-drop method and T-branch method
Connecting Units	4-point and 8-point Terminals: 16 Input Terminals and 16 Output Terminals per Master 16-point Terminals: 8 Input Terminals and 8 Output Terminals per Master
Dielectric strength	500 VAC for 1 min (1-mA sensing current between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction: 200 m/s^2 Destruction: 300 m/s^2
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions
Terminal strength	No damage when 50 N pull load was applied for 10 s
Screw tightening torque	0.6 to 1.18 N • m
Ambient temperature	Operating: 0°C to 55°C (with no icing or condensation) Storage: –20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating: 35% to 85%
Weight	4-point and 8-point Terminals: 80 g max. 16-point Terminals: 110 g max.
Approved standards (4/8 points)	UL 508, CSA C22.2 No. 14

Note: The above current consumption is the value with all 4 and 8 and 16 points turned ON excluding the current consumption of the external sensor connected to the input Remote Terminal and the current consumption of the load connected to the output Remote Terminal.

Nomenclature



Indicators

Indicator	Display	Color	Meaning
PWR	Lit	Green	The communications power supply is ON.
	Not lit		The communications power supply is OFF.
COMM	Lit	Yellow	Normal communications
	Not lit		A communications error has occurred or the Unit is in standby status.
ERR	Lit	Red	A communications error has occurred.
	Not lit		Normal communications or the Unit is in standby status.
0 to 7	Lit	Yellow	The corresponding I/O signal is ON.
	Not lit		The corresponding I/O signal is OFF.

Output HOLD/CLEAR Mode

Mode	Pin 1	Setting
HOLD	ON	Output status is maintained.
CLEAR	OFF	Output status is cleared when a communications error occurs.

Note: 1. Pin 1 is factory-set to OFF.

2. This function is available to Output Terminals only.

Node Number Settings

Node number	Pin 3	Pin 4	Pin 5	Pin 6
	8	4	2	1
0	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF
7	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON
10	ON	OFF	ON	OFF
11	ON	OFF	ON	ON
12	ON	ON	OFF	OFF
13	ON	ON	OFF	ON
14	ON	ON	ON	OFF
15	ON	ON	ON	ON

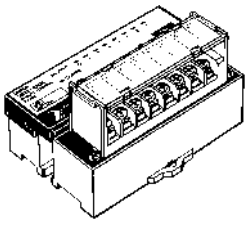
Note: 1. The node number is factory-set to 0.

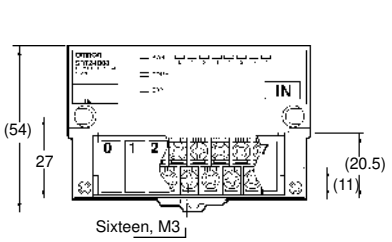
2. For node number settings, refer to the *CompoBus/S Operation Manual (W266-E1).*

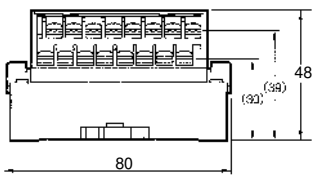
Dimensions

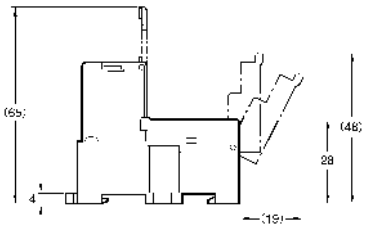
Note: All units are in millimeters unless otherwise indicated.

SRT2-ID04 (-1)
SRT2-OD04 (-1)
SRT2-ID08 (-1)
SRT2-OD08 (-1)

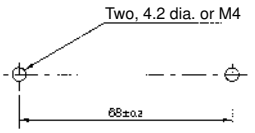




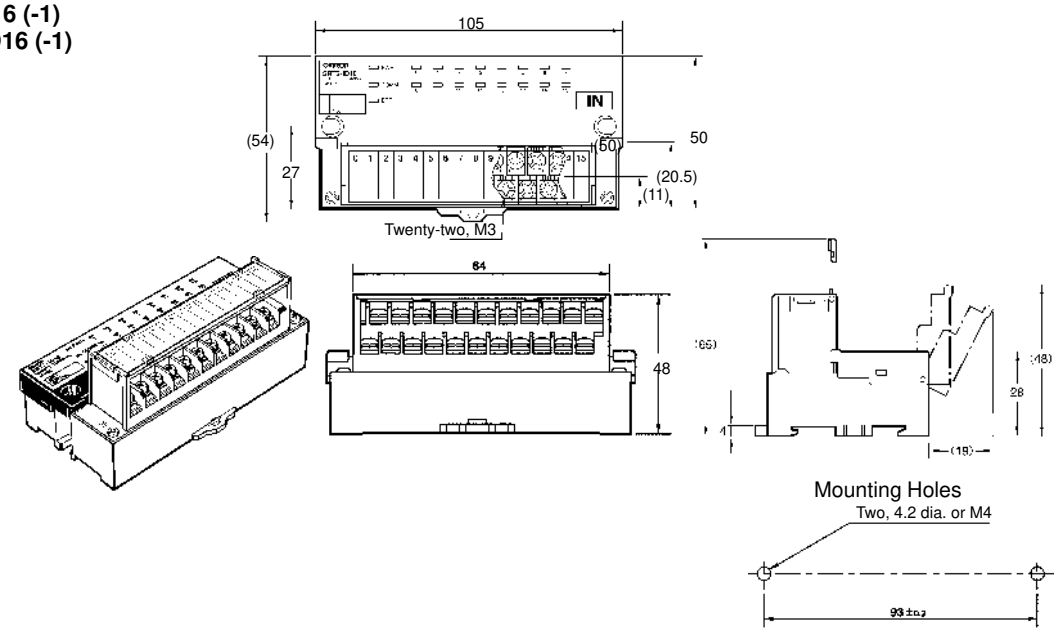




Mounting Holes



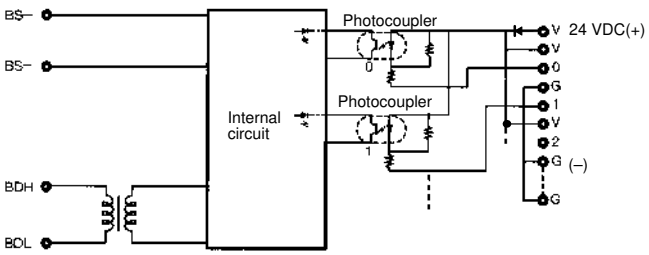
SRT2-ID16 (-1)
SRT2-OD16 (-1)



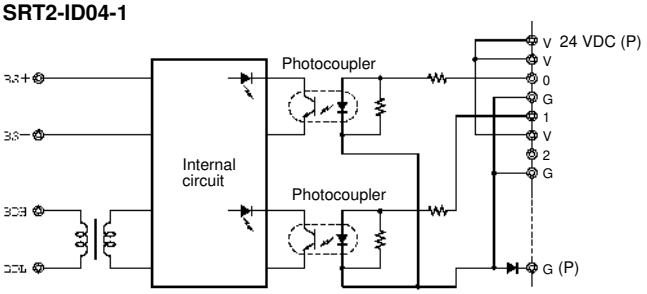
Installation

■ Internal Circuit Configuration

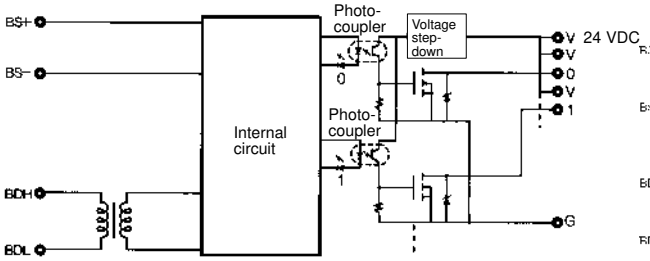
SRT2-ID04



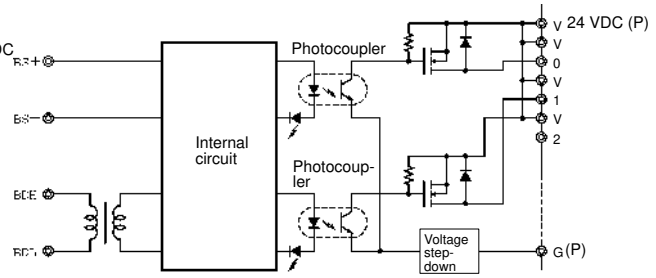
SRT2-ID04-1



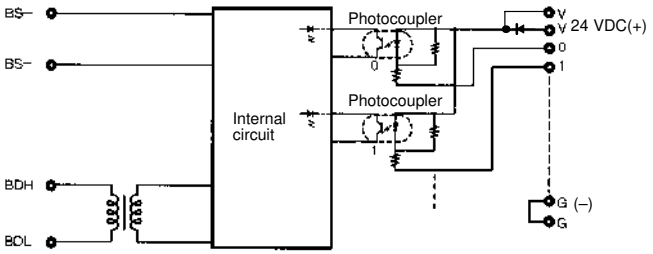
SRT2-OD04



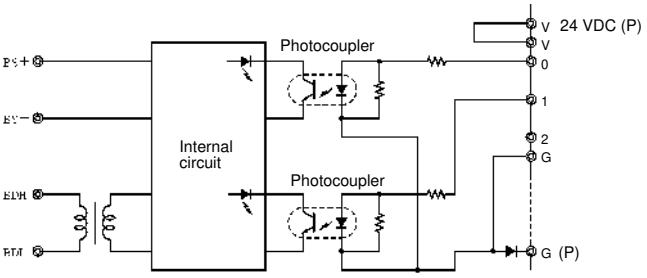
SRT2-OD04-1



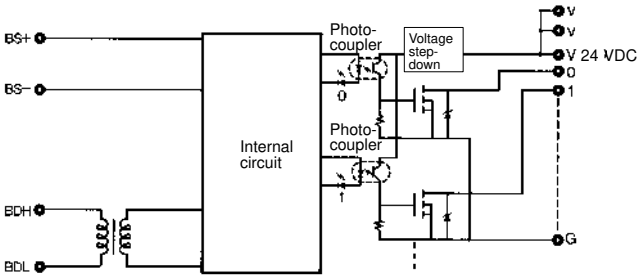
SRT2-ID08



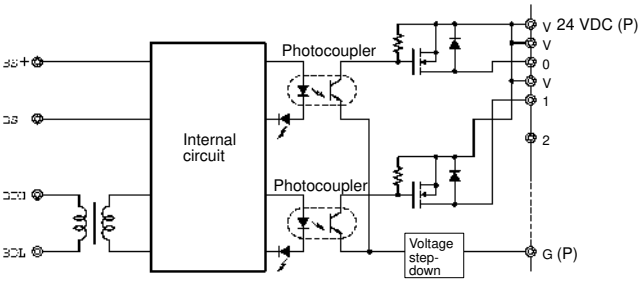
SRT2-ID08-1



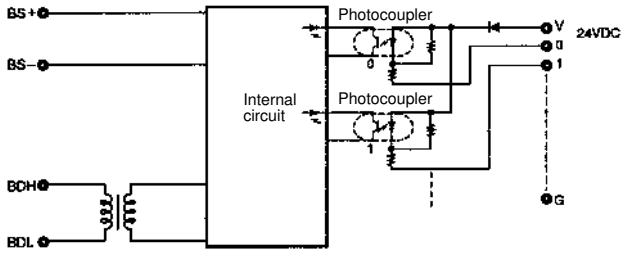
SRT2-OD08



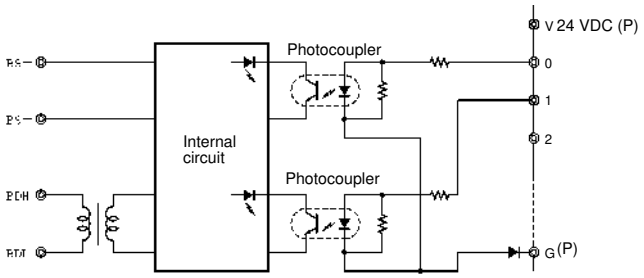
SRT2-OD08-1



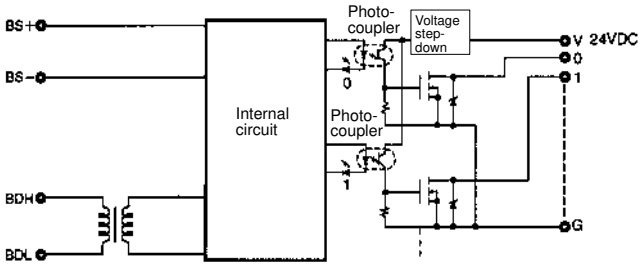
SRT2-ID16



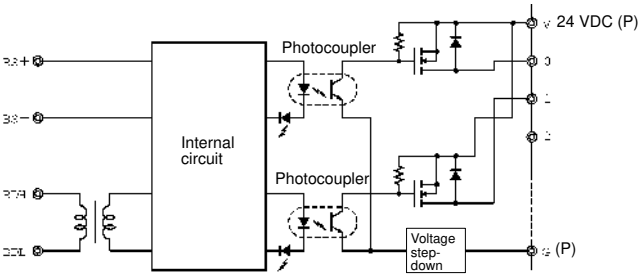
SRT2-ID16-1



SRT2-OD16



SRT2-OD16-1

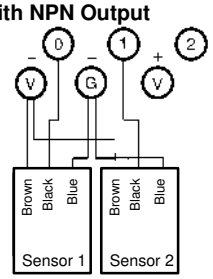


■ External Connections (NPN Models)

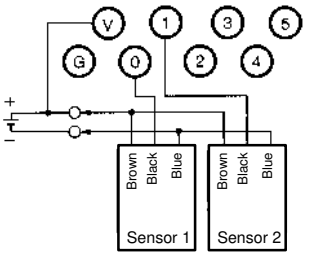
Input

Three-wire Sensors

SRT2-ID04 with NPN Output

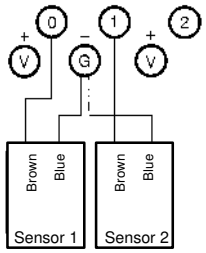


SRT2-ID08 and SRT2-ID16 with NPN Output

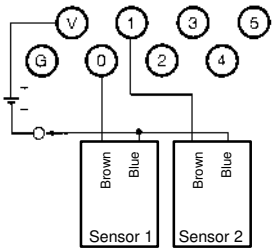


Two-wire Sensors

SRT2-ID04

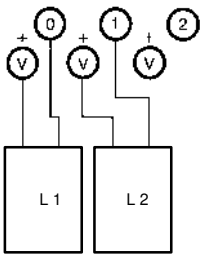


SRT2-ID08 and SRT2-ID16

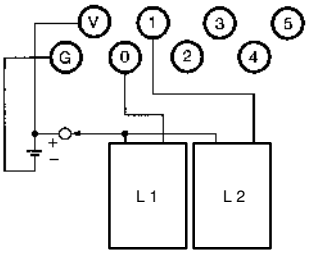


Output

SRT2-OD04



SRT2-OD08 and SRT2-ID16

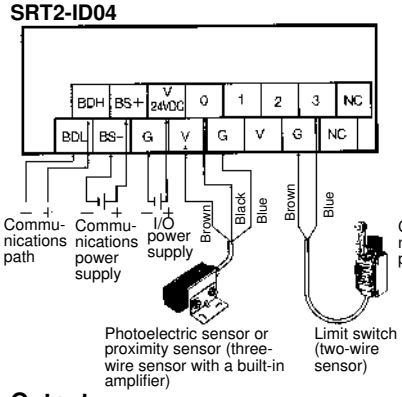


■ Terminal Arrangement and I/O Device Connection Example (PNP Models)

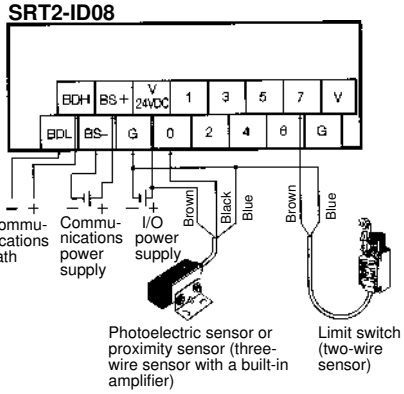
Note: The connections examples shown are for PNP models.

Input

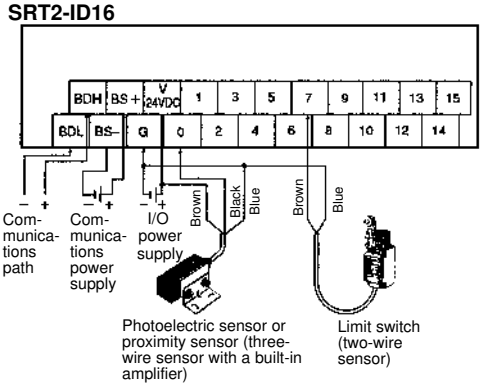
SRT2-ID04



SRT2-ID08

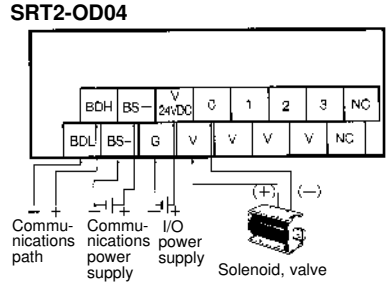


SRT2-ID16

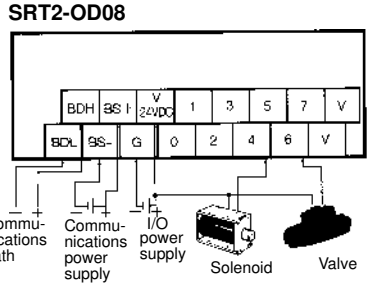


Output

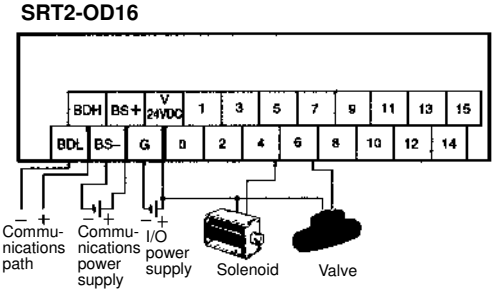
SRT2-OD04



SRT2-OD08



SRT2-OD16

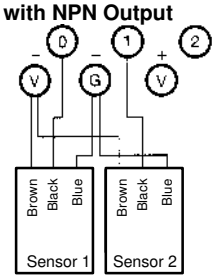


■ External Connections (PNP Models)

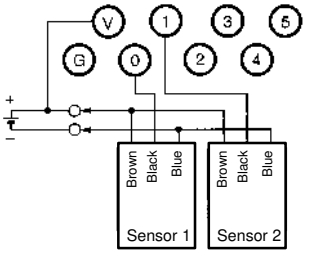
Input

Three-wire Sensors

SRT2-ID04-1 with NPN Output

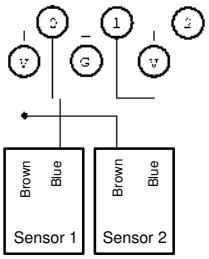


SRT2-ID08-1 and SRT2-ID16-1 with NPN Output

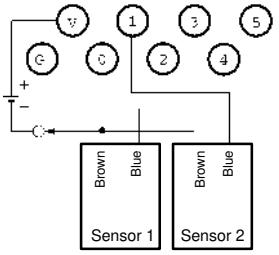


Two-wire Sensors

SRT2-ID04-1

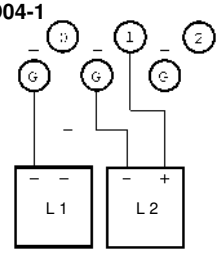


SRT2-ID08-1 and SRT2-ID16-1

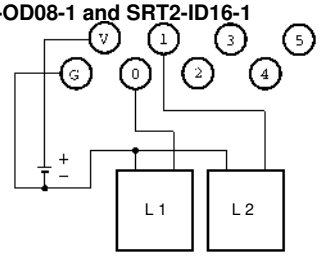


Output

SRT2-OD04-1



SRT2-OD08-1 and SRT2-ID16-1

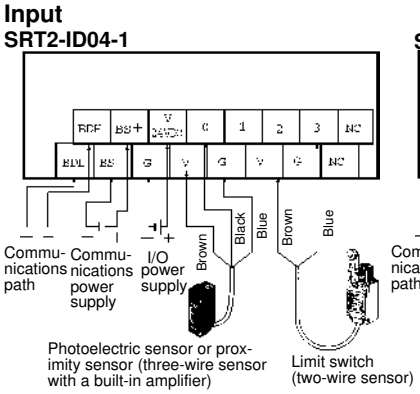


■ Terminal Arrangement and I/O Device Connection Example (PNP Models)

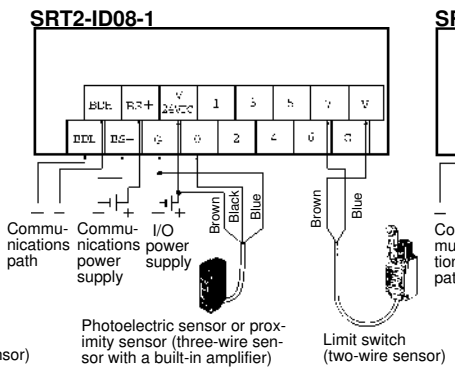
Note: The connections examples shown are for NPN models.

Input

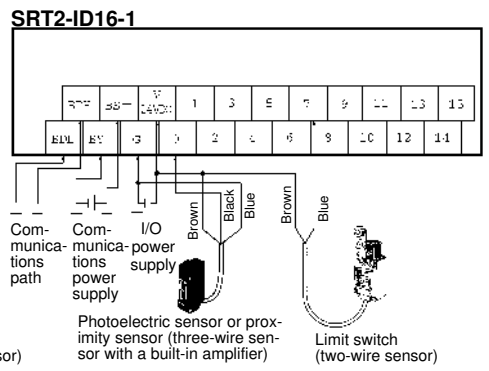
SRT2-ID04-1



SRT2-ID08-1

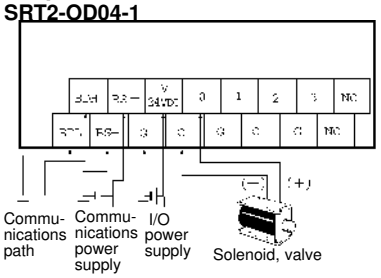


SRT2-ID16-1

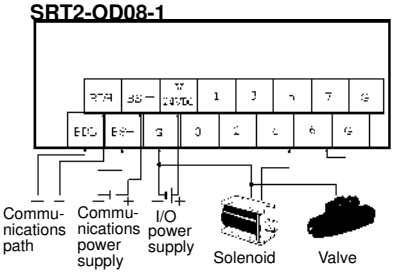


Output

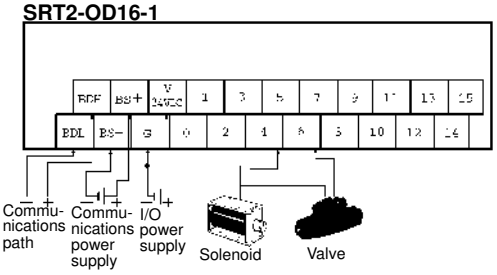
SRT2-OD04-1



SRT2-OD08-1



SRT2-OD16-1



Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

OMRON

Transistor Remote I/O Terminals with 3-tier Terminal Block | **SRT2-□D16T(-1)**

Models with 3-tier Terminals (16 Points) Added to the Remote I/O Terminal Series.

Six Models are Available Depending on the NPN or PNP Configuration, Input Points, I/O Points, or Output Points.

- Incorporates easy-to-wire terminals each connecting to a single wire.
- Reduces designing and wiring effort.
- Incorporates a removable circuit block of cassette construction.

Ordering Information

I/O classification	Internal I/O circuit common	I/O points	I/O connection method	Model
Digital input	NPN (+ common)	16	M3 terminal block	SRT2-ID16T
	PNP (– common)			SRT2-ID16T-1
Digital I/O	NPN (– common)			SRT2-MD16T
	PNP (+ common)			SRT2-MD16T-1
Digital output	NPN (– common)			SRT2-OD16T
	PNP (+ common)			SRT2-OD16T-1

Specifications

■ Ratings

Inputs

Input current	6 mA max./point at 24 V and 3 mA min./point at 17 V
ON delay time	1.5 ms max.
OFF delay time	1.5 ms max.
ON voltage	NPN: 15 VDC min. between V terminals and each input terminal PNP: 15 VDC min. between G terminals and each input terminal
OFF voltage	NPN: 5 VDC max. between V terminals and each input terminal PNP: 5 VDC max. between G terminals and each input terminal
OFF current	1 mA max.
Insulation method	Photocoupler

Outputs

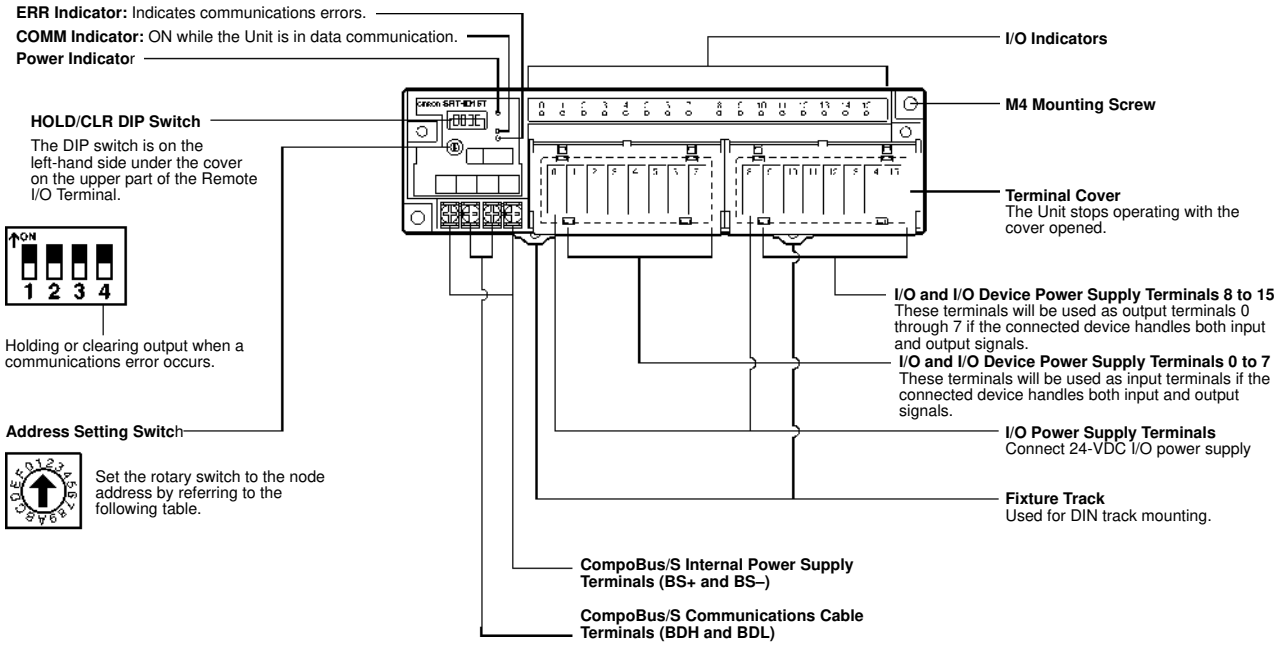
Rated output current	0.5 A max./point
Residual voltage	1.2 V max.
ON delay time	0.5 ms max.
OFF delay time	1.0 ms max.
Leakage current	0.1 mA max.
Insulation method	Photocoupler

■ Characteristics

Communications power supply voltage	14 to 26.4 VDC
I/O power supply voltage	24 VDC $^{+10\%}/_{-15\%}$
I/O power supply current	4 A max./common
Current consumption (see note)	50 mA max. at 24 VDC
Connection method	Multi-drop method and T-branch method
Dielectric strength	500 VAC between insulated circuits
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2
Shock resistance	200 m/s^2
Mounting strength	No damage with 100 N pull load applied in all directions.
Terminal strength	No damage with 100 N pull load applied
Screw tightening torque	0.3 to 0.5 N • m
Ambient temperature	Operating: –10°C to 55°C Storage: –25°C to 65°C
Ambient humidity	Operating: 25% to 85% (with no condensation)
Weight	300 g max.

Note: The above current consumption is the value with all points turned ON excluding the current consumption of the external sensor connected to the input Remote Terminal and the current consumption of the load connected to the output Remote Terminal.

Nomenclature



Address Setting Switch

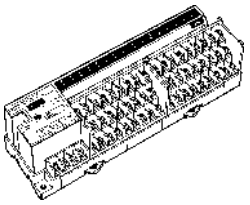
Node address	Setting (Hex)
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7

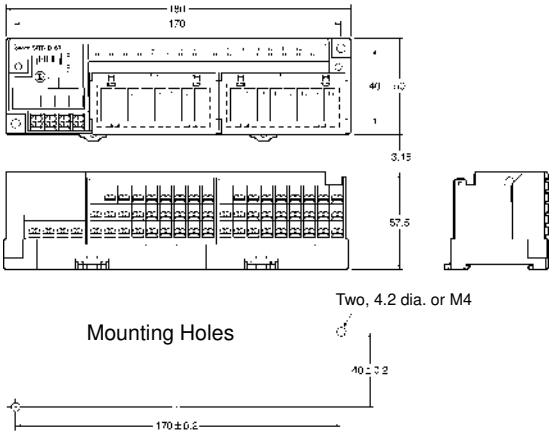
Node address	Setting (Hex)
8	8
9	9
10	A
11	B
12	C
13	D
14	E
15	F

Dimensions

Note: All units are in millimeters unless otherwise indicated.

SRT2-ID16T (-1)
SRT2-MD16T (-1)
SRT2-OD16T (-1)

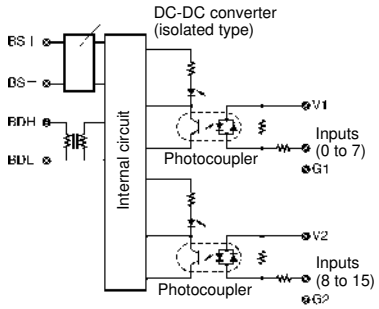




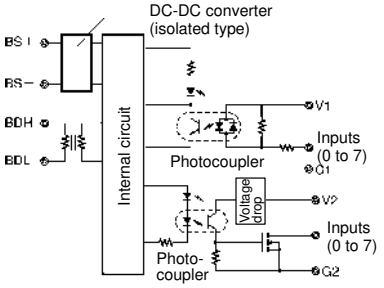
Installation

■ Internal Circuit Configuration

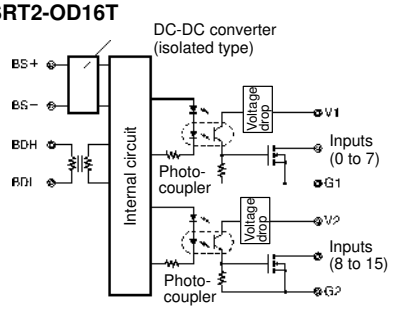
SRT2-ID16T



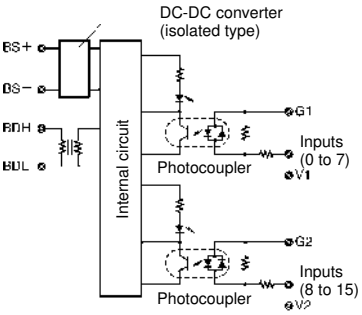
SRT2-MD16T



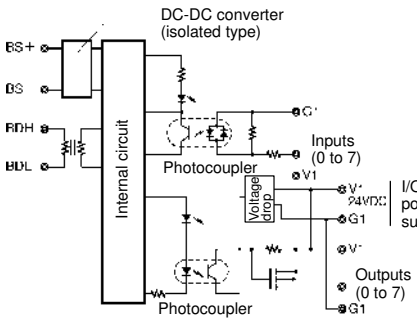
SRT2-OD16T



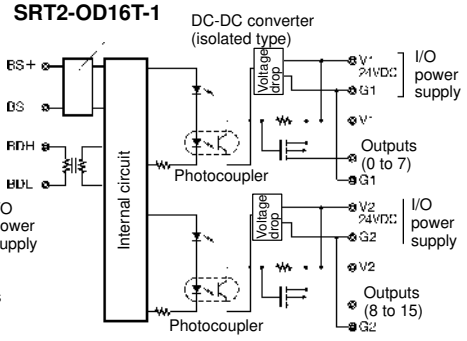
SRT2-ID16T-1



SRT2-MD16T-1



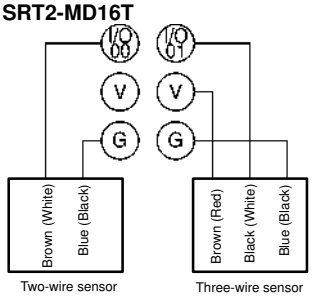
SRT2-OD16T-1



■ External Connections

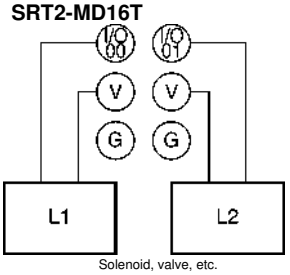
Input (NPN Models)

SRT2-ID16T
SRT2-MD16T



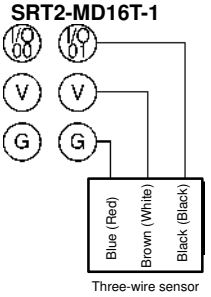
Output (NPN Models)

SRT2-OD16T
SRT2-MD16T



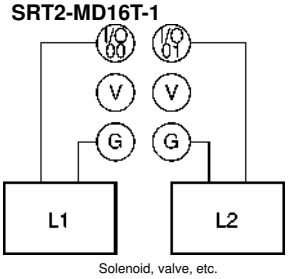
Input (PNP Models)

SRT2-ID16T-1
SRT2-MD16T-1



Output (PNP Models)

SRT2-OD16T-1
SRT2-MD16T-1



OMRON

Relay-mounted Remote I/O Terminals | SRT2-R

Ultra-miniature 8-point and 16-point Relay-mounted Terminals

- Ultra-compact
  (8-point models: 101 x 51 x 51 mm (W x H x D);
  16-point models: 156 x 51 x 51 mm (W x H x D))
- Power MOS FET Relay and Relay models.
- DIN track mounting and screw mounting are available.

Ordering Information

Classification	I/O points	Rated voltage	Relay coil rating	Model	Applicable relay
Relay output	8 points	24 VDC	24 VDC	SRT2-ROC08	G6D-1A
	16 points			SRT2-ROC16	
Power MOS FET relay output	8 points			SRT2-ROF08	G3DZ-2R6PL
	16 points			SRT2-ROF16	

Note: For details about connections to the Master Unit, refer to page 12.

Specifications

■ Ratings

Relay Output

Item	SRT2-ROC08, SRT2-ROC16
Applicable relay	G6D-1A (one for each output point)
Rated load	3 A at 250 VAC, 3 A at 30 VDC (resistive load)
Rated carry current	3 A (see note 1)
Max. contact voltage	250 VAC, 30 VDC
Max. contact current	3 A
Max. switching capacity	730 VA (AC), 90 W (DC)
Min. permissible load (see note 2)	10 mA at 5 VDC
Life expectancy	Electrical: 100,000 operations min. (rated load, at 1,800 operations/h) Mechanical: 20,000,000 operations min. (at 18,000 operations/h)

Note: 1. The maximum permissible current of COM0 to COM7 is 3 A.

2. This value fulfills the P reference value of opening/closing at a rate of 120 times per min (ambient operating environment and determination criteria according to JIS C5442).

Power MOS FET Relay Output

Item	SRT2-ROF08, SRT2-ROF16
Applicable relay	G3DZ-2R6PL (one for each output point)
Load voltage	3 to 264 VAC, 3 to 125 VDC
Load current	100 μA to 0.3 A
Inrush current	6 A (10 ms)

■ Characteristics

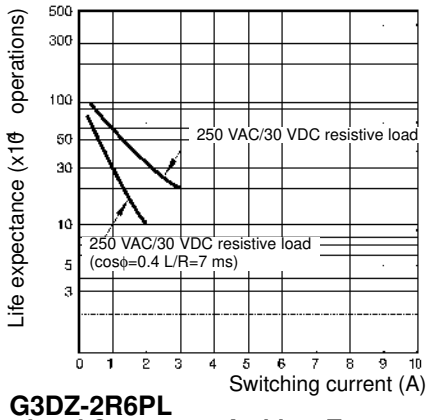
Power supply voltage	24 VDC $^{+10\%}/_{-15\%}$
Current consumption (see note)	350 mA max. at 24 VDC
Connection method	Multi-drop method and T-branch method
Connecting Units	8-point Units: 16 per Master 16-point Units: 8 per Master
Dielectric strength	2,000 VAC for 1 min (1-mA sensing current) between all output terminals and power supply, between communication terminals, and between contacts of different polarities 500 VAC for 1 min (1-mA sensing current) between all output terminals and power supply, between communication terminals, and between all power supply terminals and communications terminals
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 55 Hz, 0.75-mm double amplitude
Shock resistance	Malfunction: 100 m/s^2 Destruction: 300 m/s^2
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions
Terminal strength	No damage when 50 N pull load was applied for 10 s
Screw tightening torque	0.6 to 1.18 N • m
Ambient temperature	Operating: 0°C to 55°C (with no icing or condensation) Storage: –20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating: 35% to 85%
Weight	8-point models: 145 g max., 16-point models: 240 g max.
Approved standards	UL 508, CSA C22.2 No. 14

Note: The above current consumption is a value with all the points turned ON including the current consumption of the G6D coil for the Remote Output Terminal, and the G3DZ's input current.

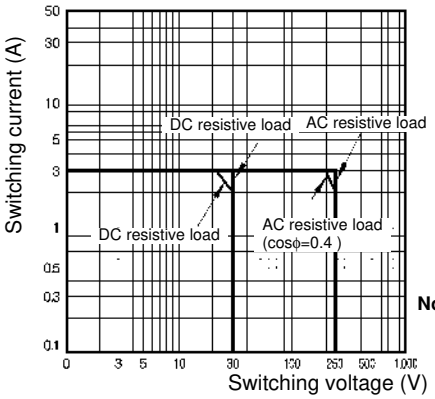
Reference Data

G6D-1A (24 VDC)

Life Expectancy



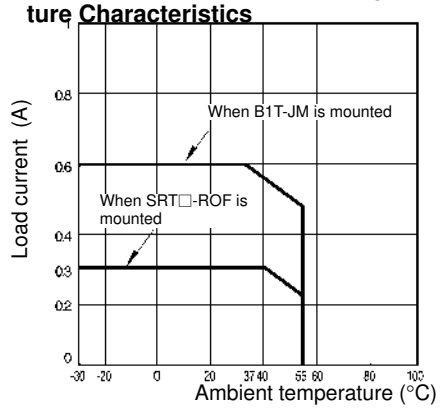
Max. Switching Capacity



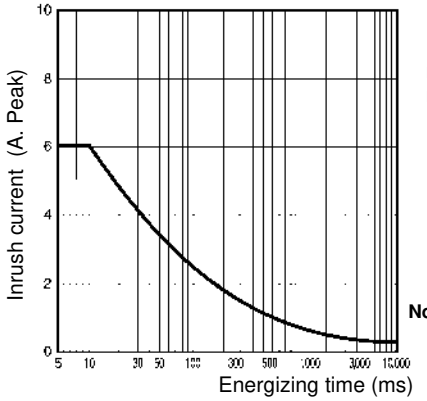
Note: These graphs show the characteristics for when the SRT2-ROC□□ or B1T-JR model is mounted.

G3DZ-2R6PL

Load Current vs. Ambient Temperature Characteristics



Inrush Current Resistivity

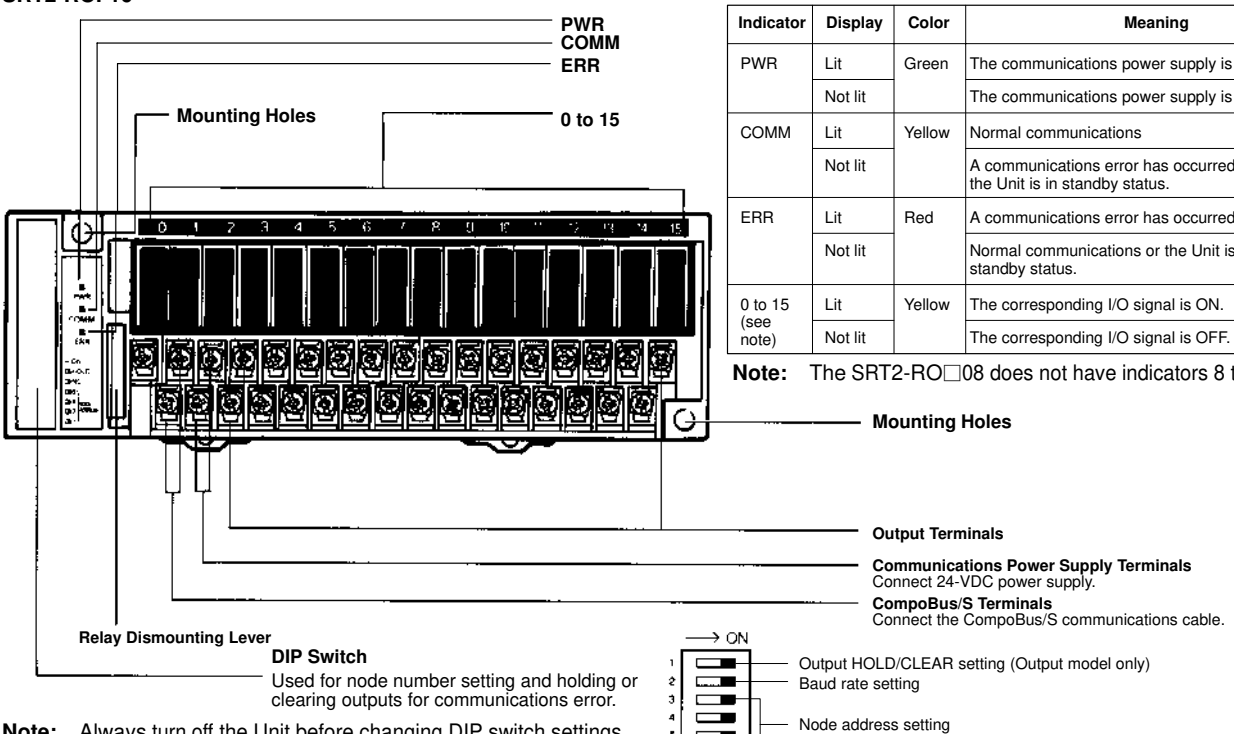


Non-repetitive: (Keep the inrush current to half the rated value if it occurs repetitively.)

Note: The above graph shows the characteristics for when the SRT2-ROF□□ or B1T-JM model is mounted.

Nomenclature

SRT2-ROC16
SRT2-ROF16



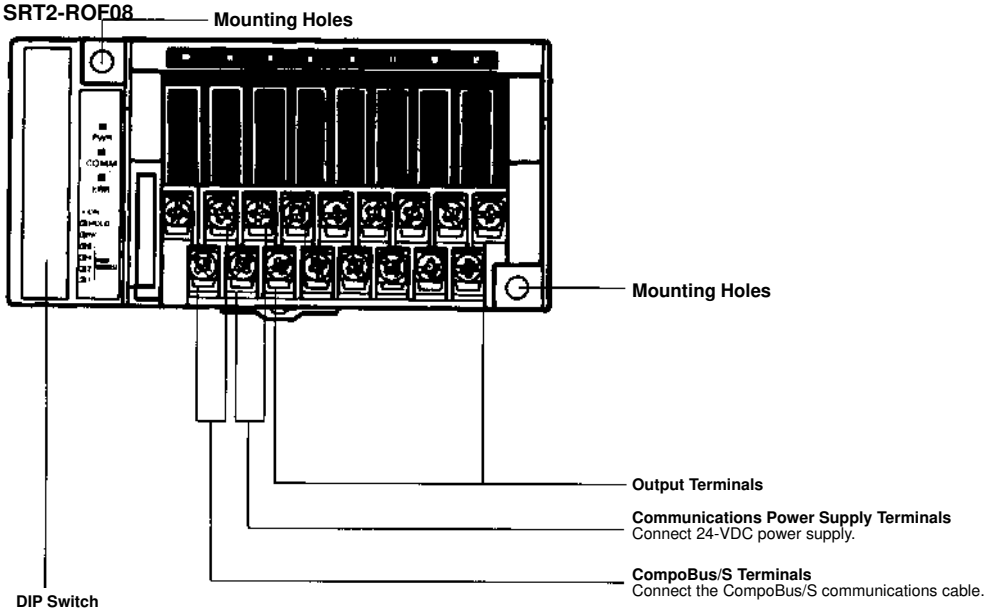
Indicators

Indicator	Display	Color	Meaning
PWR	Lit	Green	The communications power supply is ON.
	Not lit		The communications power supply is OFF.
COMM	Lit	Yellow	Normal communications
	Not lit		A communications error has occurred or the Unit is in standby status.
ERR	Lit	Red	A communications error has occurred.
	Not lit		Normal communications or the Unit is in standby status.
0 to 15 (see note)	Lit	Yellow	The corresponding I/O signal is ON.
	Not lit		The corresponding I/O signal is OFF.

Note: The SRT2-RO□08 does not have indicators 8 to 15.

Note: Always turn off the Unit before changing DIP switch settings.

SRT2-ROC08
SRT2-ROF08



Output HOLD/CLEAR Mode

Mode	Pin 1	Setting
HOLD	ON	Output status is maintained when a communications error occurs.
CLEAR	OFF	Output status is cleared when a communications error occurs.

Note: 1. Pin 1 is factory-set to OFF.
2. This function is available to the Output Terminal only.

Node Number Settings

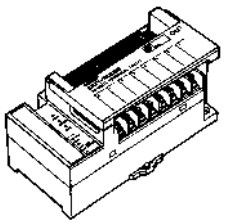
Node number	Pin 3	Pin 4	Pin 5	Pin 6
	8	4	2	1
0	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF
7	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON
10	ON	OFF	ON	OFF
11	ON	OFF	ON	ON
12	ON	ON	OFF	OFF
13	ON	ON	OFF	ON
14	ON	ON	ON	OFF
15	ON	ON	ON	ON

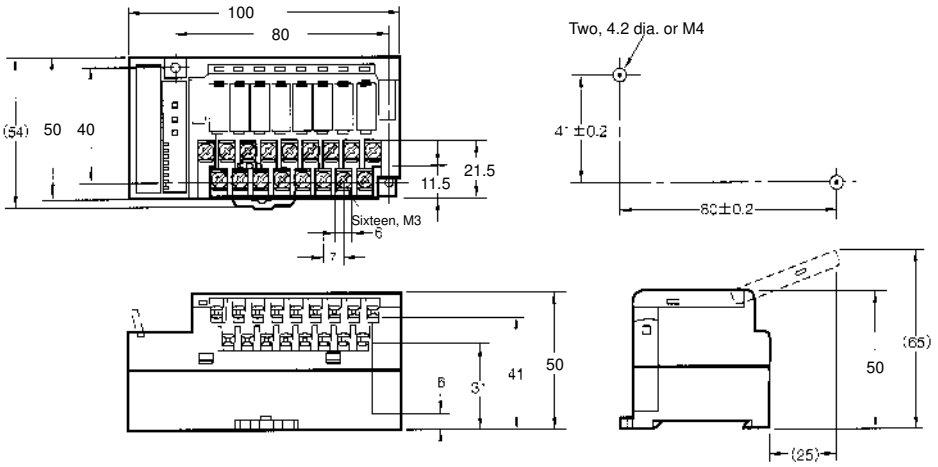
Note: 1. The node number is factory-set to 0.
2. For node number setting, refer to the *CompoBus/S Operation Manual (W266-E1).*

Dimensions

Note: All units are in millimeters unless otherwise indicated.

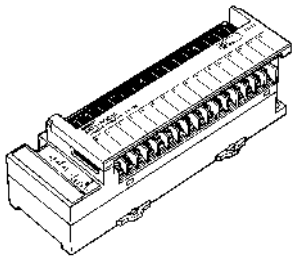
SRT2-ROC08
SRT2-ROF08

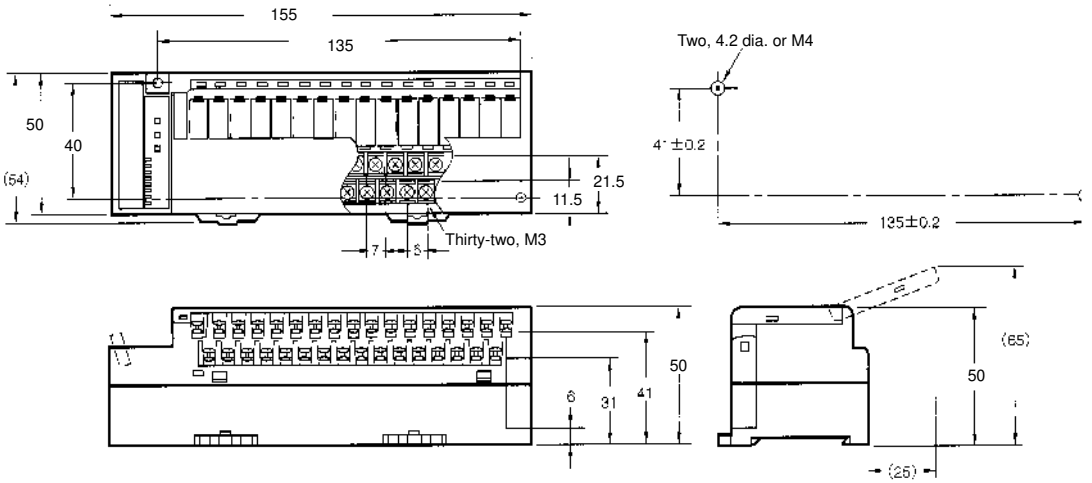




Mounting Holes

SRT2-ROC16
SRT2-ROF16



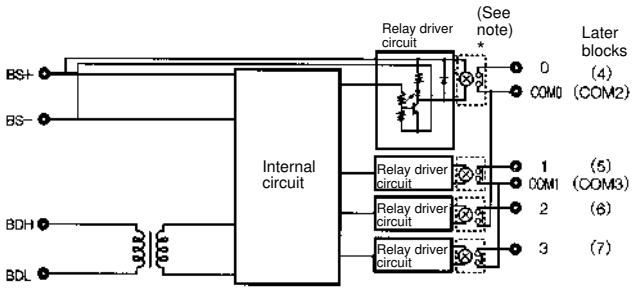


Mounting Holes

Installation

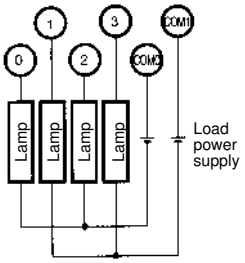
■ Internal Circuit Configuration

SRT2-ROC08
SRT2-ROC16



Note: The G3DZ-2R6PL Power MOS FET Relay is inserted into this portion of the SRT2-ROF08 and SRT2-ROF16.

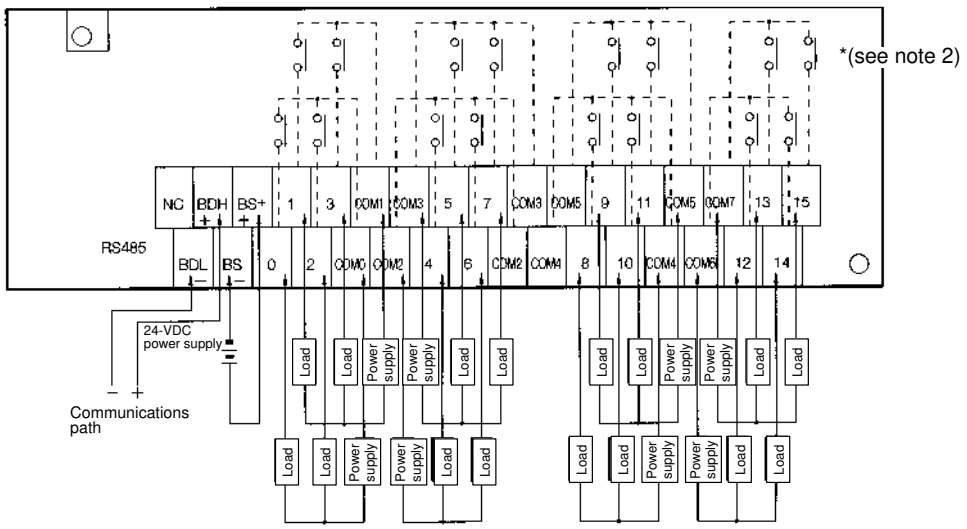
■ External Connections



■ Terminal Arrangement and I/O Device Connection Example

Output

SRT2-ROC16
SRT2-ROF16



Note: 1. Dotted lines indicate internal connections.
SRT2-ROC08 and SRT2-ROF08 have the 0 to 7 and COM0 to COM3 terminals only.

2. The above is a connection example of the SRT2-ROC16 with G6D Relays mounted.
G3DZ Power MOS FET Relays are mounted to the SRT2-ROF08 and SRT2-ROF16.

Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

Subminiature 32-point Remote Terminal with Connectors

- Compact dimensions: 35 × 60 × 80 (W × D × H)
- Long-distance and high-speed communications modes available.
- Downsizing enabled with 32-point MIL connector for I/O connection.

Ordering Information

I/O classification	Internal I/O circuit common	I/O points	I/O connection method	Rated voltage for communications power supply	Rated voltage for I/O power supply	Model
Input	NPN (+ common)	32	MIL connector	24 VDC	24 VDC	SRT2-ID32ML
	PNP (– common)					SRT2-ID32ML-1
Output	NPN (– common)					SRT2-OD32ML
	PNP (+ common)					SRT2-OD32ML-1
Input and output	NPN (input: + common; output – common)					SRT2-MD32ML
	PNP (input: – common; output: + common)					SRT2-MD32ML-1
Mounting hook B (see note)						SRT2-ATT02

Note: Mounting hook B is required when not mounting to a DIN track.

Specifications

■ Ratings

Inputs

Item	SRT2-ID32ML	SRT2-MD32ML	SRT2-ID32ML-1	SRT2-MD32ML-1
ON voltage	15 VDC min. (Between each input terminal and V.)		15 VDC min. (Between each input terminal and G.)	
OFF voltage	5 VDC max. (Between each input terminal and V.)		5 VDC max. (Between each input terminal and G.)	
OFF current	1.0 mA max.			
Input current	6.0 mA max. at 24 VDC 3.0 mA max. at 17 VDC (Between each input terminal and V.)		6.0 mA max. at 24 VDC 3.0 mA max. at 17 VDC (Between each input terminal and G.)	
Input impedance	4.4 kΩ			
ON delay time	1.5 ms max.			
OFF delay time	1.5 ms max.			
Number of circuits	32 points/common, 1 circuit	16 points/common, 1 circuit	32 points/common, 1 circuit	16 points/common, 1 circuit

Outputs

Item	SRT2-OD32ML	SRT2-MD32ML	SRT2-OD32ML-1	SRT2-MD32ML-1
Output current	0.3 A/point 4-A common (See notes 1 and 3.)	0.3 A/point 2-A common (See notes 2 and 3.)	0.3 A/point 4-A common (See notes 1 and 3.)	0.3 A/point 2-A common (See notes 2 and 3.)
Residual voltage	1.2 V max. (Between the 0.3-A DC output terminal and G.)		1.2 V max. (Between the 0.3-A DC output terminal and V.)	
Leakage current	0.1 mA max. (Between the 24-VDC output terminal and G.)		0.1 mA max. (Between the 24-VDC output terminal and V.)	
ON delay time	0.5 ms max.			
OFF delay time	1.5 ms max.			
Insulation method	Photocoupler		Photocoupler	
Number of circuits	32 points/common, 1 circuit	16 points/common, 1 circuit	32 points/common, 1 circuit	16 points/common, 1 circuit

Note: 1. Ensure that the total external load current does not exceed 4 A.
2. Ensure that the total external load current does not exceed 2 A.
3. Ensure that the current per terminal for the V/G terminals does not exceed 1 A.

■ Characteristics

Communications power supply voltage	14 to 26.4 VDC
I/O power supply voltage	20.4 to 26.4 VDC
Current consumption for communications power supply (also used for internal circuits; see note)	ID32ML/ID32ML-1: 50 mA MD32ML/MD32ML-1: 60 mA OD32ML/OD32ML-1: 70 mA
Dielectric strength	500 VAC for 1 min (Detection current: 1 mA between insulated circuits.)
Vibration resistance	10 to 150 Hz, 0.7-mm double amplitude or 50 m/s^2
Shock resistance	150 m/s^2
Ambient temperature	Operating: –10°C to 55°C (with no icing or condensation) Storage: –25°C to 65°C
Ambient humidity	Operating: 25% to 85% (with no condensation)
Weight	ID32ML/ID32ML-1/MD32ML/MD32ML-1: Approx. 100 g max. OD32ML/OD32ML-1: Approx. 90 g

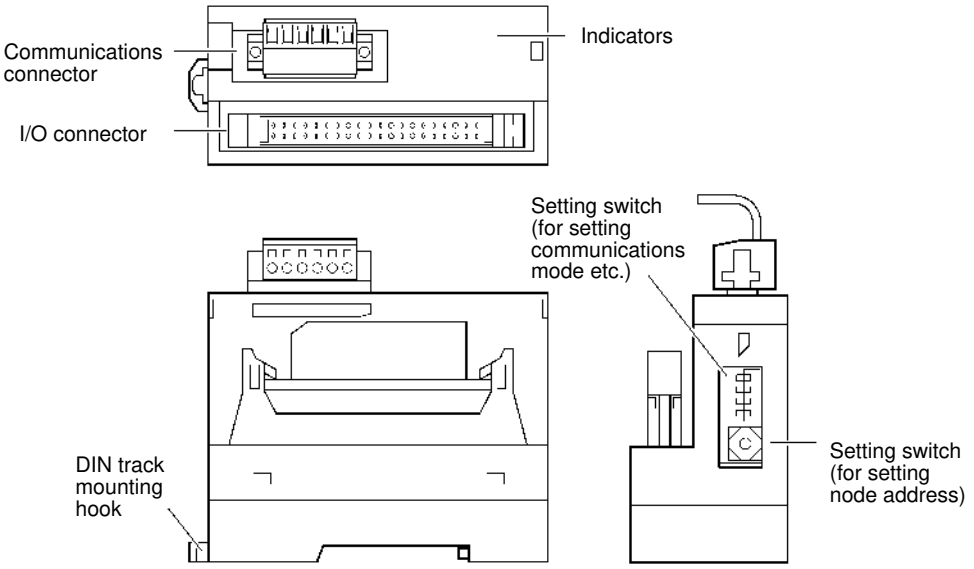
Note: The above current consumption is the value with all points turned ON excluding the current consumption of the external sensor connected to the input Remote Terminal and the current consumption of the load connected to the output Remote Terminal.

■ Applicable Connectors

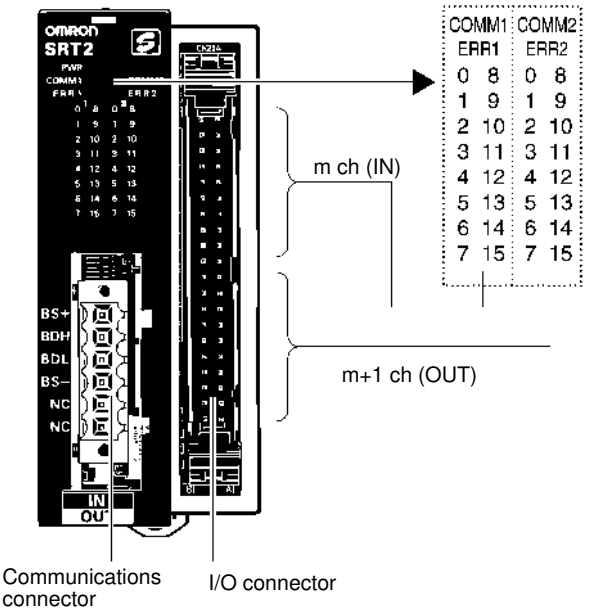
Type		Model	Remarks
Flat cable, pressure-welded		XG4M-4030-T	---
Stranded wire, pressure-welded	Socket	XG5M-4032-N	For AWG 24
		XG5M-4035-N	For AWG 28 to 26
	Semi–cover	XG5S-2001	---
	Hood cover	XG5S-4022	---

Nomenclature

Names of Components



Relationship between I/O Indicators and Connector

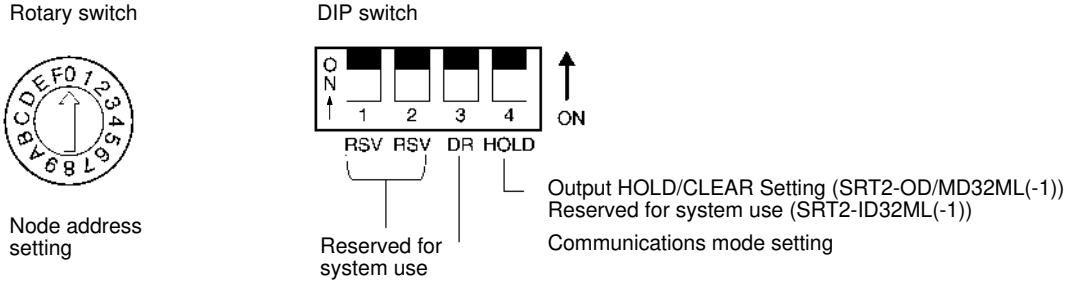


Indicators

Display	Name	Color	Status	Meaning
PWR	Power supply indicator	Green	Lit	Power is being supplied by the communications power supply.
			Not lit	Power is not being supplied by the communications power supply.
COMM1 COMM2	Communications indicators	Yellow	Lit	I/O is being exchanged normally.
			Not lit	A communications error has occurred, or the Unit is on standby.
ERR1 ERR2	Communications error indicators	Red	Lit	A communications error has occurred.
			Not lit	I/O is being exchanged normally, or the Unit is on standby.
0 to 15	I/O	Yellow	Lit	The corresponding input or output is ON.
			Not lit	The corresponding input or output is OFF, or on standby.

Operation

■ Switch Settings



Node Address

The node address is set to one of the following hexadecimal values using the rotary switch.

Node address	Setting (hexadecimal)	Node address	Setting (hexadecimal)
0	0	8	8
1	1	9	9
2	2	10	A
3	3	11	B
4	4	12	C
5	5	13	D
6	6	14	E
7	7	15	F

Note: 1. Note the following points when using with the C200HW-SRM21-V1/SRM1-CO□-V2:

If the maximum number of control points is 128 for inputs and 128 for outputs, node addresses 14 and 15 cannot be used (SRT2-OD/ID32ML(-1)).
If the maximum number of control points is 64 for inputs and 64 for outputs, node addresses in the range 8 to 15 cannot be used.

2. Note the following points when using with the CQM1-SRM21-V1:
<u>In 8-point Mode:</u>
If 2 channels are allocated, node addresses in the range 2 to 15 cannot be used.
If 4 channels are allocated, node addresses in the range 4 to 15 cannot be used.
If 8 channels are allocated, node addresses in the range 8 to 15 cannot be used.
<u>In 4-point Mode:</u>
This Unit cannot be used.

Communications Mode Setting

The communications mode is set using SW3 of the DIP switch in the way shown below.

SW3	Communications mode	Communications distance	Communications speed	Communications cycle time
OFF	High-speed communications mode	100 m max.	750 kbps	0.5 ms/0.8 ms
ON	Long-distance communications mode	500 m max.	93.75 kbps	4.0 ms/6.0 ms

Output HOLD/CLEAR Setting for Communications Errors (SRT2-OD/MD32ML (-1))

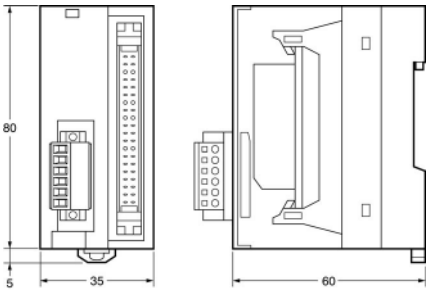
The setting of SW4 of the DIP switch determines whether output data is held or cleared when a communications error occurs.

SW4 (HOLD)	Setting
OFF	Output status is cleared.
ON	Output status is held.

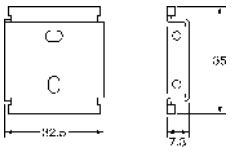
Dimensions

Note: All units are in millimeters unless otherwise indicated.

SRT2-ID32ML(-1)
SRT2-OD32ML(-1)
SRT2-MD32ML(-1)



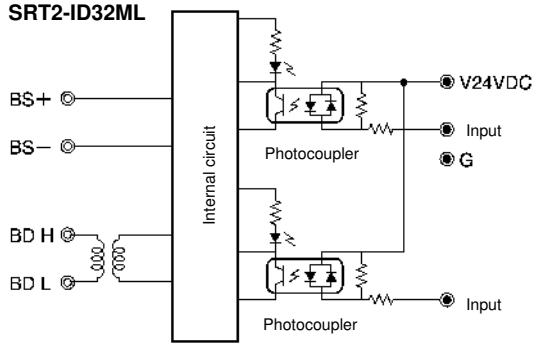
SRT2-ATT02



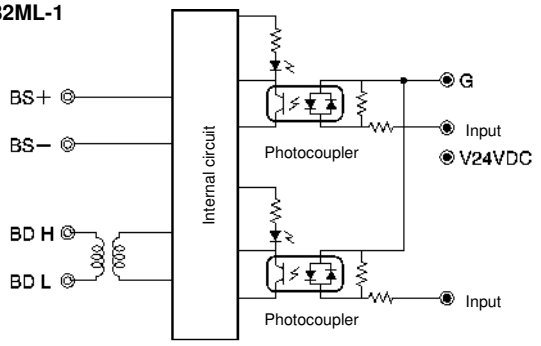
Installation

■ Internal Circuit Configuration

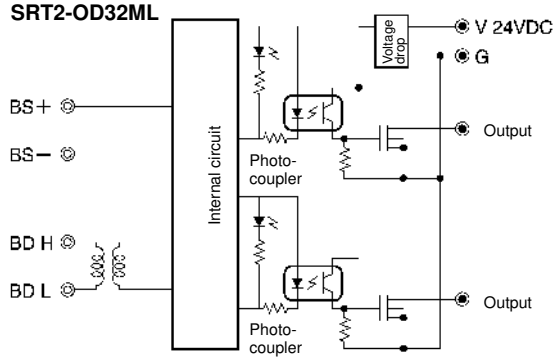
SRT2-ID32ML



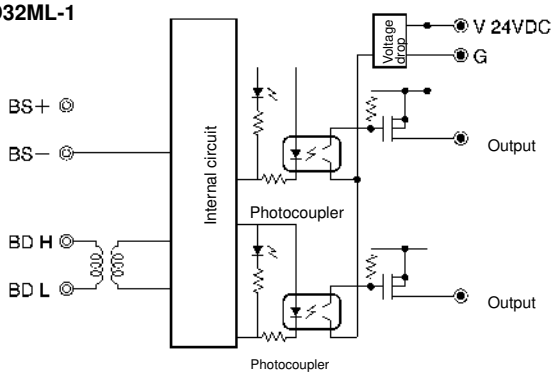
SRT2-ID32ML-1



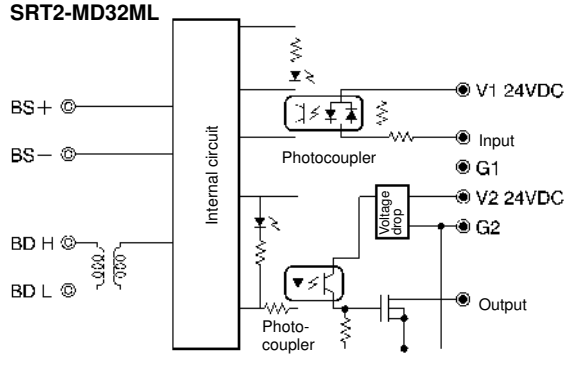
SRT2-OD32ML



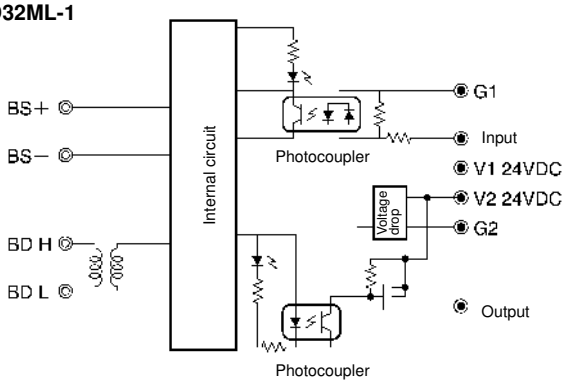
SRT2-OD32ML-1



SRT2-MD32ML

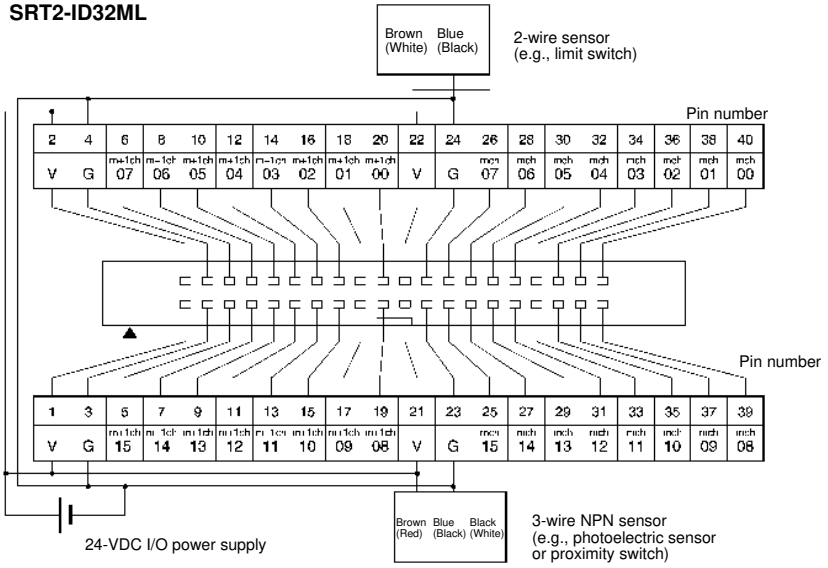


SRT2-MD32ML-1

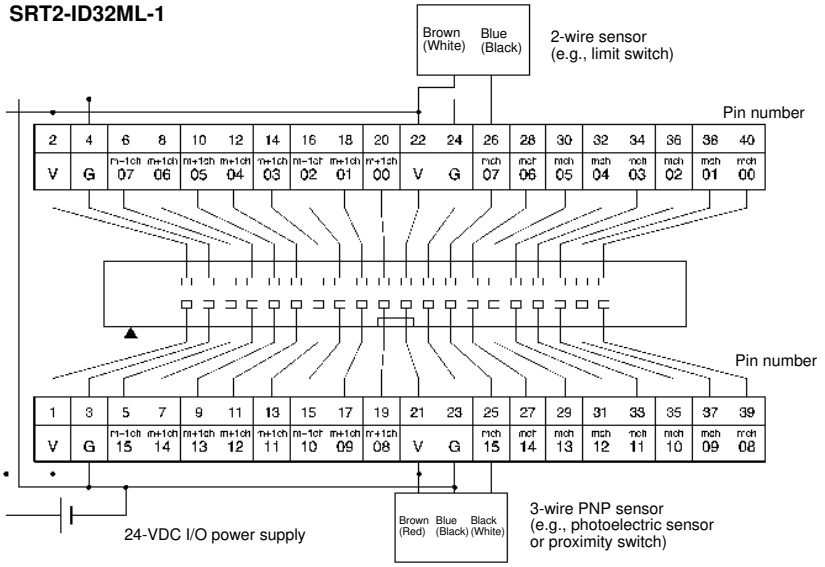


■ Terminal Arrangement

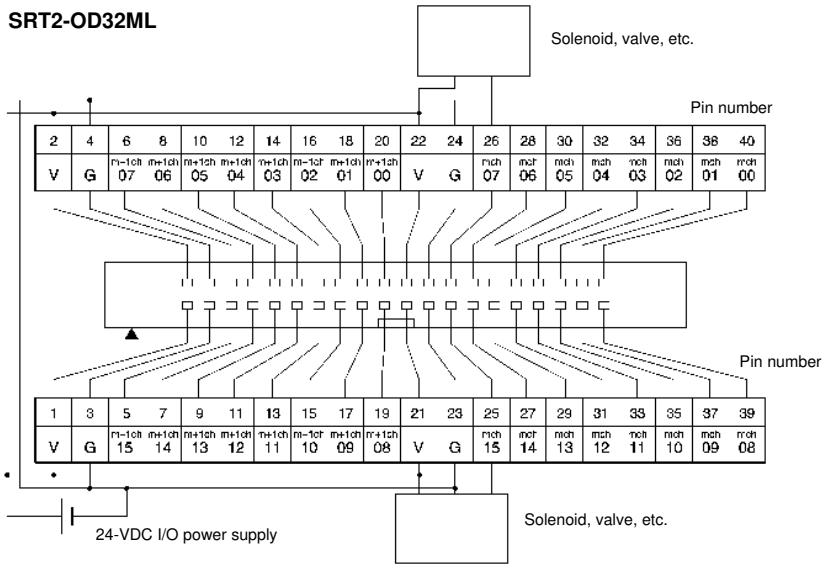
SRT2-ID32ML



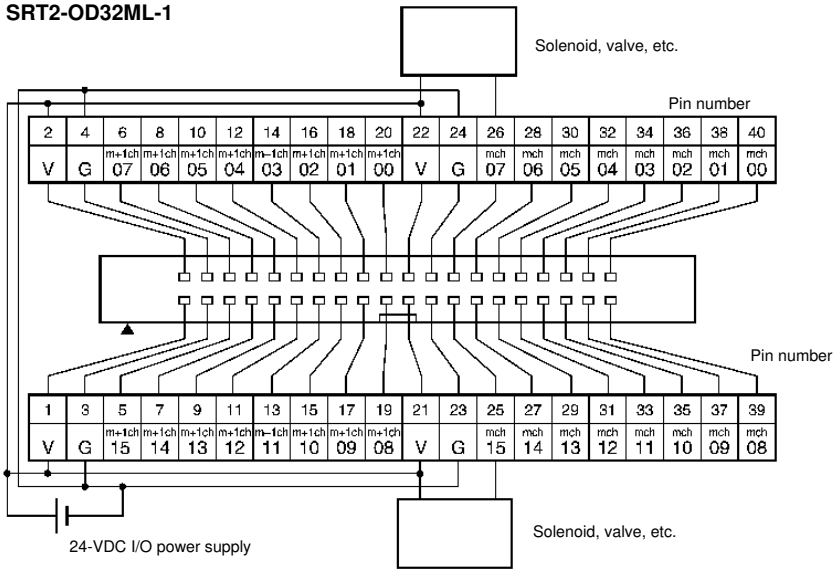
SRT2-ID32ML-1



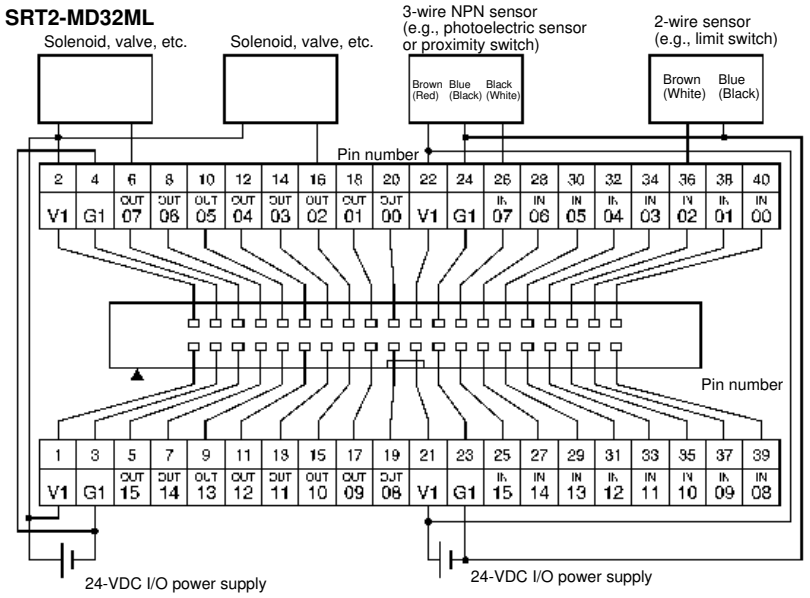
SRT2-OD32ML



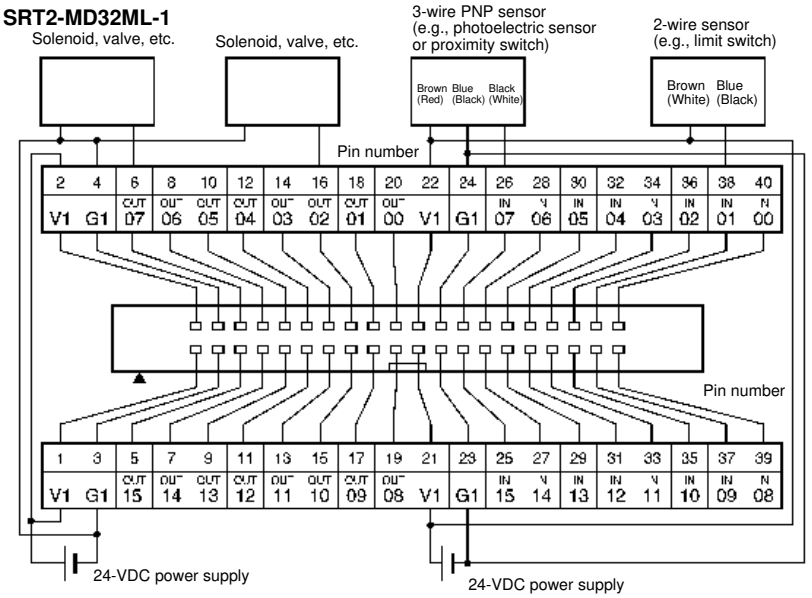
SRT2-OD32ML-1



SRT2-MD32ML



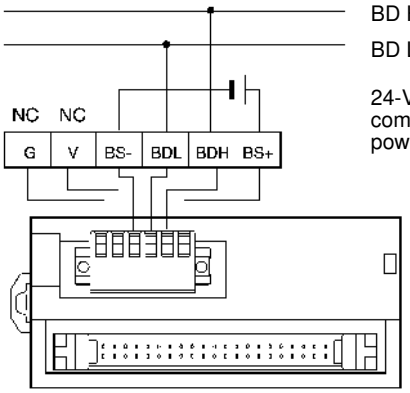
SRT2-MD32ML-1



Precautions

For details on available communications connectors, refer to page 105.

Communications Connector Pin Arrangement



Applicable Cables

Cables with Connectors (2-to-1 Connection)

Model	Connected product	Applicable Cable	Remarks
SRT2-ID32ML	G7TC-ID16 G7TC-IA16	G79-I50-25-D1 (50 cm) G79-I75-50-D1 (75 cm)	---
SRT2-MD32ML	Input side: G7TC-ID16 G7TC-IA16 Output side: G7TC-OC16/OC18 G70D-SOC16/VSOC16 G70A-ZOC16-3	G79-M50-25-D1 (50 cm) G79-M75-50-D1 (75 cm)	Inputs and outputs are distinguished by color. The tube for the input side is red and the tube for the output side is yellow.
SRT2-OD32ML	G7TC-OC16/OC08 G70D-SOC16/VSOC16 G70A-ZOC16-3	G79-O50-25-D1 (50 cm) G79-O75-50-D1 (75 cm)	---
SRT2-ID32ML-1	G70A-ZIM16-5	G79-I50-25-D2 (50 cm) G79-I75-50-D2 (75 cm)	---
SRT2-MD32ML-1	Input side: G70A-ZIM16-5 Output side: G70A-ZOC16-4 G70D-SOC16-1	G79-M50-25-D2 (50 cm) G79-M75-50-D2 (75 cm)	Inputs and outputs are distinguished by color. The tube for the input side is red and the tube for the output side is yellow.
SRT2-OD32ML-1	G70A-ZOC-16-4 G70D-SOC16-1	G79-O50-25-D1 (50 cm) G79-O75-50-D1 (75 cm)	---
	G7TC-OC16-1	G79-I50-25-D1 (50 cm) G79-I75-50-D1 (75 cm)	---

Cables with Connectors (1-to-1 Connection)

Model	Connected product	Applicable Cable	Remarks
All models	XW2B-40G XW2B-40G5 XW2D-40G6	XW2Z-C25K (25 cm)	XW2B-40G4 XW2B-40G5
		XW2Z-C50K (50 cm)	

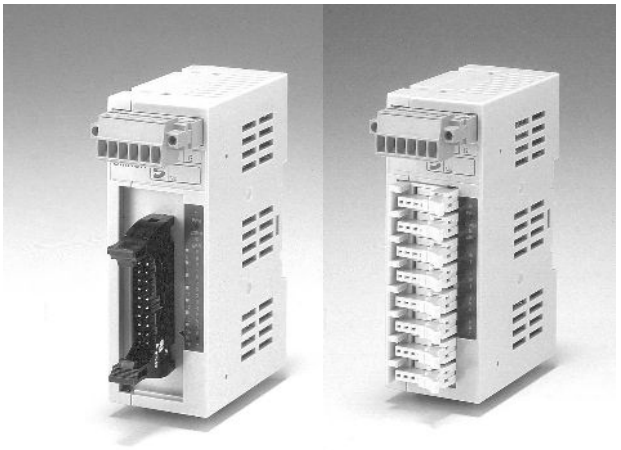
Cables with Stranded Wires

Model	Connected product	Applicable Cable	Remarks
All models	---	G79-A200C-D1 (2 m)	---
		G79-A500C-D1 (5 m)	

Cables with Crimp Terminals

Model	Connected product	Applicable Cable	Remarks
All models	---	G79-Y100C-D1 (1 m)	---
		G79-Y200C-D1 (2 m)	
		G79-Y500C-D1 (5 m)	

Compact Remote I/O Terminals that Save Wiring Effort and Enable Long-distance Communications

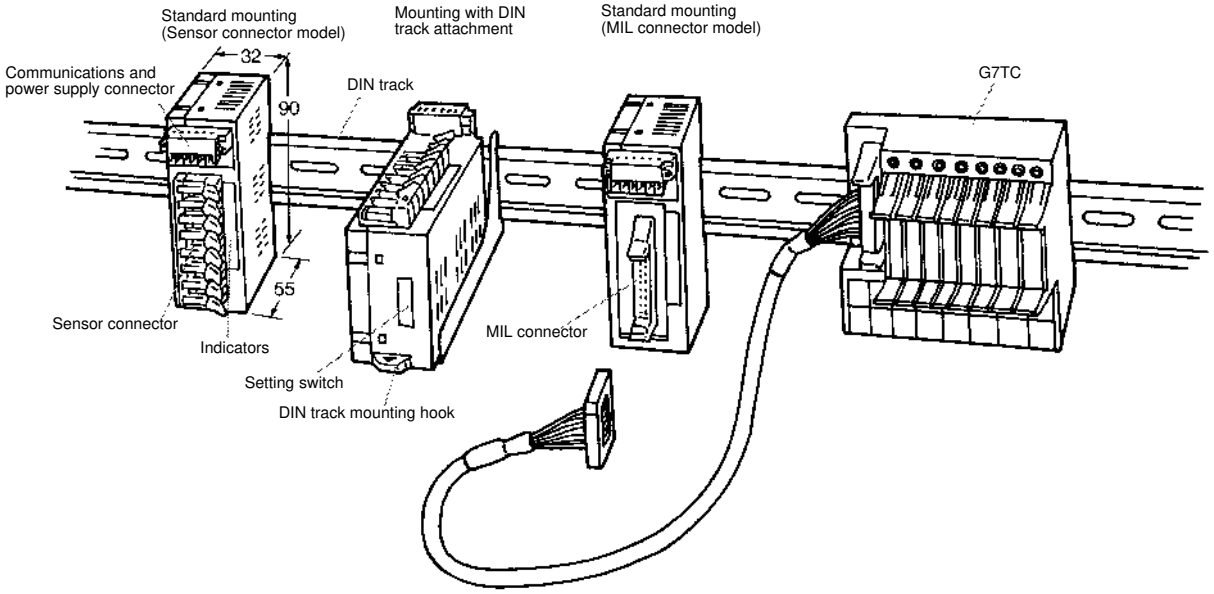


- Long-distance or high-speed communications mode is selectable.
- Incorporates I/O connectors making it possible to minimize the size.
- I/O connectors save wiring effort.
- Flexible DIN track mounting is possible through a DIN track attachment.
- Eight-point sensor connector models and 16-point MIL connector models are the same size.

■ Features

Vertical or horizontal DIN track mounting according to the available space is possible.

Saves space and easily connects to other devices without wiring effort.



Ordering Information

I/O classification	Internal I/O circuit common	I/O points	I/O connection method	Model
Digital input	NPN (+ common)	8	Sensor connector	SRT2-VID08S
	PNP (– common)			SRT2-VID08S-1
Digital output	NPN (– common)			SRT2-VOD08S
	PNP (+ common)			SRT2-VOD08S-1
Digital input	NPN (+ common)	16	MIL connector	SRT2-VID16ML
	PNP (– common)			SRT2-VID16ML-1
Digital output	NPN (– common)			SRT2-VOD16ML
	PNP (+ common)			SRT2-VOD16ML-1
Mounting hook A				SRT2-ATT01
Mounting hook B				SRT2-ATT02

Note: For details about connecting the SRT2-VID or SRT2-VOD to the Master Unit, refer to page 25.

Specifications

■ Ratings

Inputs

Item	SRT2-VID08S SRT2-VID08S-1	SRT2-VID16ML SRT2-VID16ML-1
Input current	6 mA max./point at 24 V, 3 mA max./point at 17 V	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
ON voltage	15 VDC min. (Between each input terminal and V: NPN. Between each input and G: PNP.)	
OFF voltage	5 VDC max. (Between each input terminal and V: NPN. Between each input and G: PNP.)	
OFF current	1 mA max.	
Insulation method	Photocoupler	
Maximum number of inputs	8	12
Number of circuits	8 points/common, 1 circuit	16 points/common, 1 circuit

Outputs

Item	SRT2-VID08S SRT2-VID08S-1	SRT2-VID16ML SRT2-VID16ML-1
Rated output current	0.3 A/point	0.3 A/point (2-A common) (See note.)
Residual voltage	1.2 V max.	
ON delay time	0.5 ms max.	
OFF delay time	1.5 ms max.	
Leakage current	0.1 mA max.	
Insulation method	Photocoupler	
Number of circuits	8 points/common, 1 circuit	16 points/common, 1 circuit

Note: When using V/G terminals in an MIL connector, ensure that the current per terminal for the V/G terminals does not exceed 1 A.

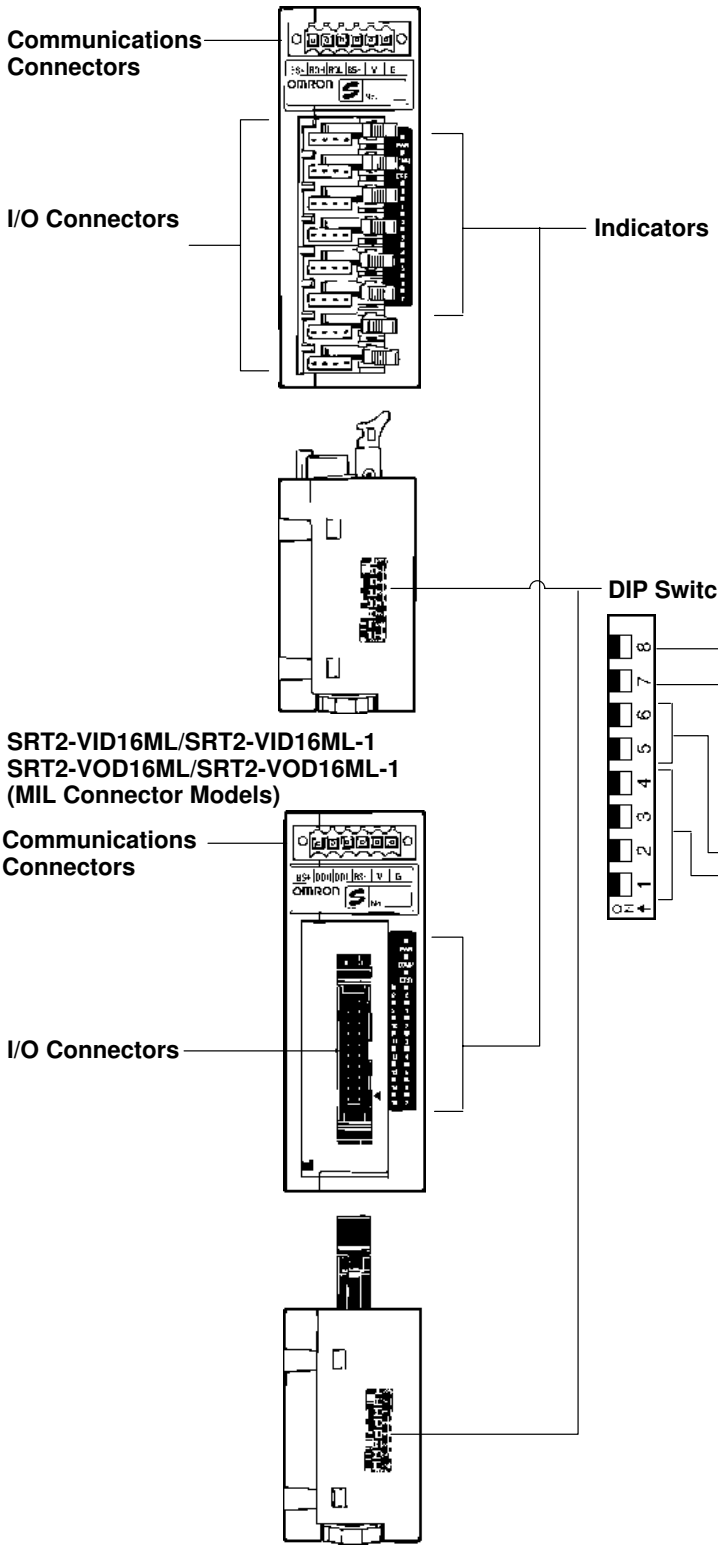
■ Characteristics

Communications power supply voltage	14 to 26.4 VDC
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC $^{+10\%}/_{-15\%}$)
I/O power supply current	Sensor connector: 2.4 A max., MIL connector: 2.0 A max.
Current consumption (see note)	50 mA max. at 24 VDC
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2 (50 m/s^2 for SRT2-ATT02)
Shock resistance	200 m/s^2
Dielectric strength	500 VAC (between insulated circuits)
Ambient temperature	Operating: –10°C to 55°C (with no icing or condensation) Storage: –25°C to 65°C
Ambient humidity	Operating: 25% to 85% (with no condensation) Storage: 25% to 85%
Mounting strength	No damage when 100 N pull load was applied in all directions (40 N load for SRT2-ATT02)
Terminal strength	No damage when the following loads were applied: Communications connector: 100 N Sensor connector: 40 N MIL connector: 100 N
Screw tightening torque	Communications connector: 0.25 N • m
Node address setting	Settings made at DIP switch (set before supplying power for Slave communications)
Weight	Approx. 75 g max.

Note: The above current consumption is the value with all points turned ON excluding the current consumption of the external sensor connected to the input Remote Terminal and the current consumption of the load connected to the output Remote Terminal.

Nomenclature

SRT2-VID08S/SRT2-VID08S-1
SRT2-VOD08S/SRT2-VOD08S-1
(Sensor Connector Models)



Indicators

Indicator	Name	Color	Display	Meaning
PWR	Power	Green	Lit	The communications power supply is ON.
			Not lit	The communications power supply is OFF.
COMM	Communications	Yellow	Lit	Normal communications
			Not lit	A communications error has occurred or the Unit is in standby status.
ERR	Communications error	Red	Lit	A communications error has occurred.
			Not lit	Normal communications or the Unit is in standby status.
0 to 7 (for 8-point I/O) 0 to 15 (for 16-point I/O)	Input (output)	Yellow	Lit	The corresponding I/O signal is ON.
			Not lit	The corresponding I/O signal is OFF.

Output HOLD/CLEAR Mode Setting
Output HOLD/CLEAR Mode

SW8 (HOLD)	Setting
OFF	Output status is cleared.
ON	Output status is maintained.

Communications Mode Setting
Communications Mode

SW7 (DR)	Setting
OFF	High-speed communications mode
ON	Long-distance communications mode

Reserved for System Use (Always OFF)
Node Address Setting
Node Number Settings

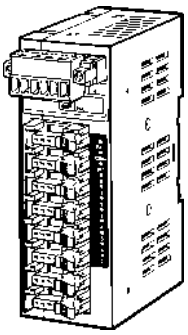
Node number	Pin 4	Pin 3	Pin 2	Pin 1
	8	4	2	1
0	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF
7	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON
10	ON	OFF	ON	OFF
11	ON	OFF	ON	ON
12	ON	ON	OFF	OFF
13	ON	ON	OFF	OFF
14	ON	ON	ON	OFF
15	ON	ON	ON	ON

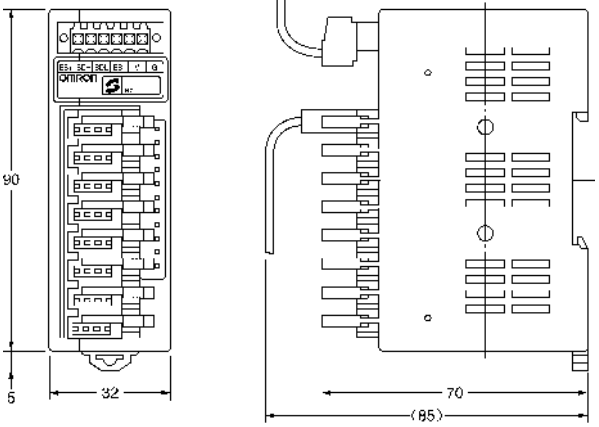
Note: Be sure to perform settings with the Slave power supply OFF.

Dimensions

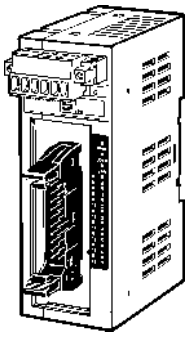
Note: All units are in millimeters unless otherwise indicated.

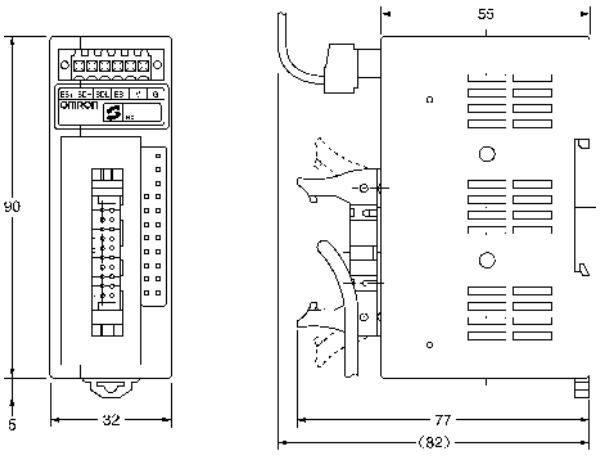
SRT2-VID08S
SRT2-VID08S-1
SRT2-VOD08S
SRT2-VOD08S-1





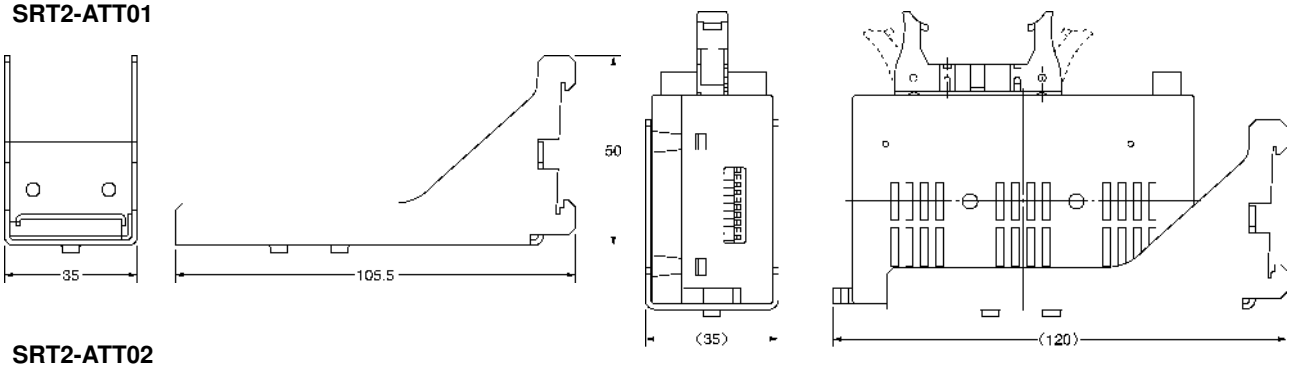
SRT2-VID16ML
SRT2-VID16ML-1
SRT2-VOD16ML
SRT2-VOD16ML-1



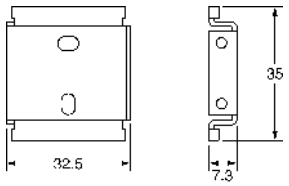


SRT2-ATT01

Dimensions when Unit is mounted.



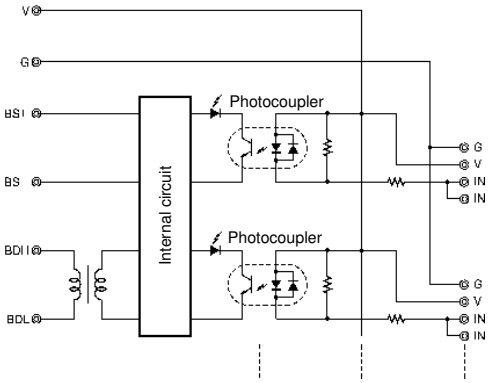
SRT2-ATT02



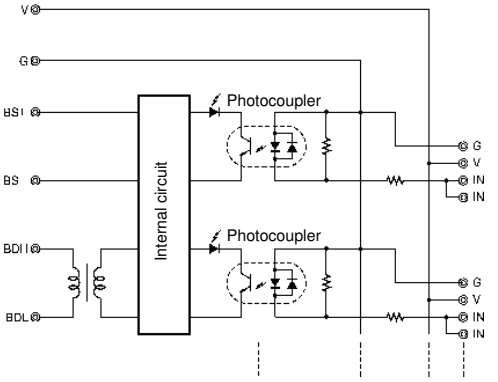
Installation

■ Internal Circuit Configuration

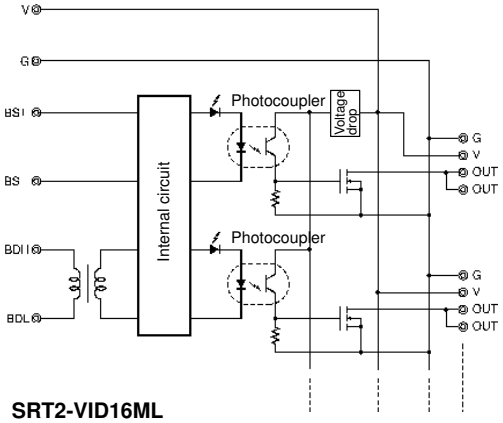
SRT2-VID08S



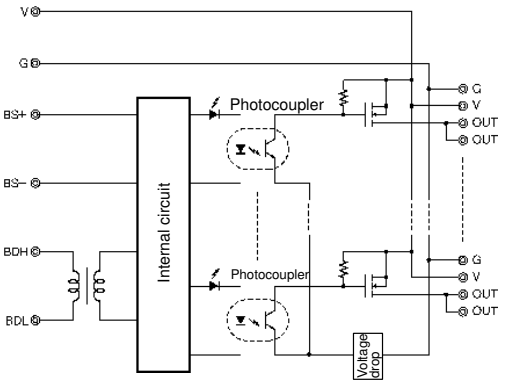
SRT2-VID08S-1



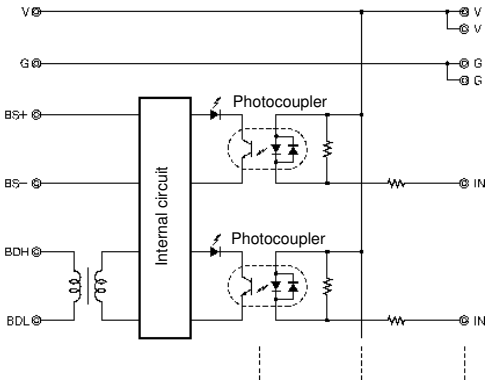
SRT2-VOD08S



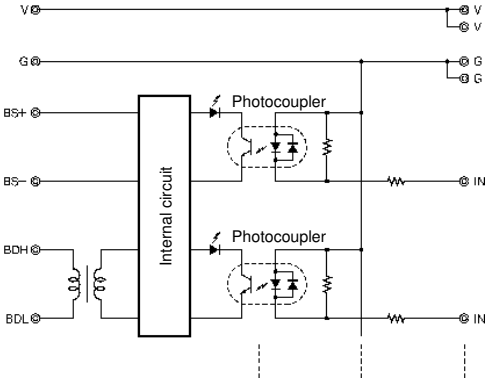
SRT2-VOD08S-1



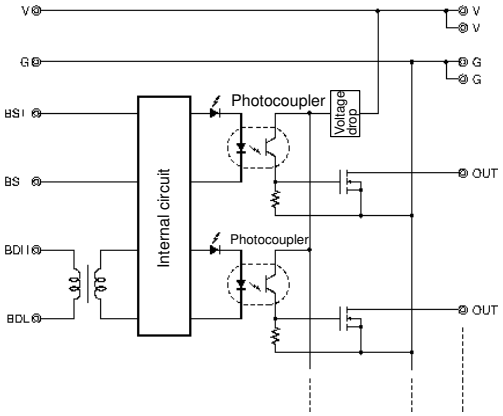
SRT2-VID16ML



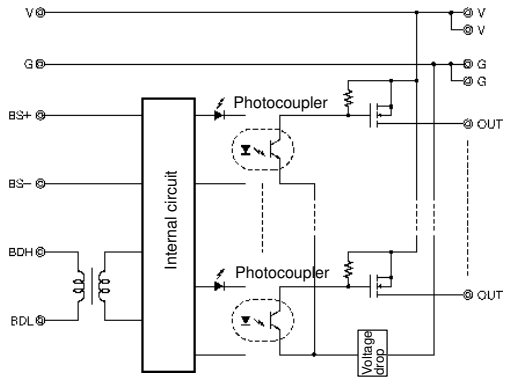
SRT2-VID16ML-1



SRT2-VOD16ML

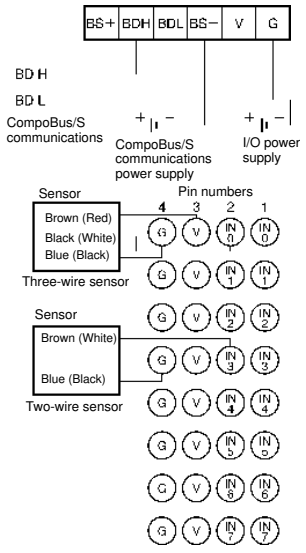


SRT2-VOD16ML-1

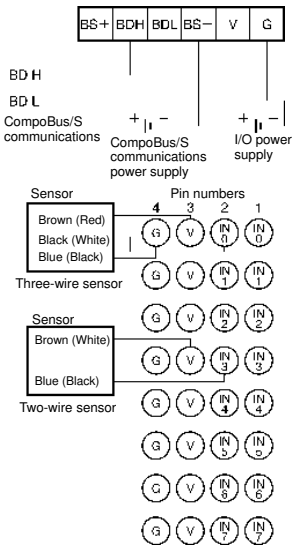


■ Terminal Arrangement and I/O Device Connection Examples

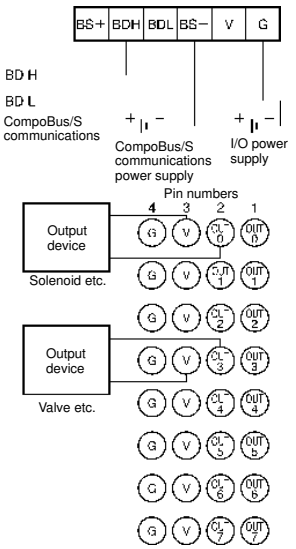
SRT2-VID08S



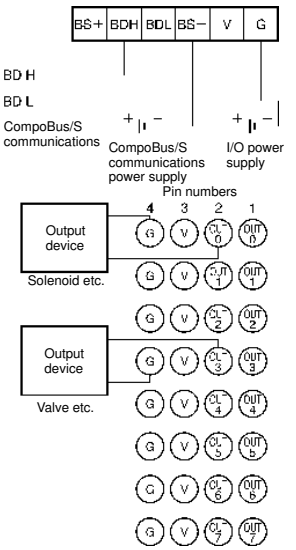
SRT2-VID08S-1



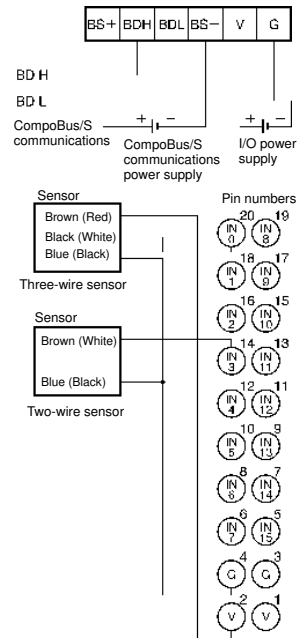
SRT2-VOD08S



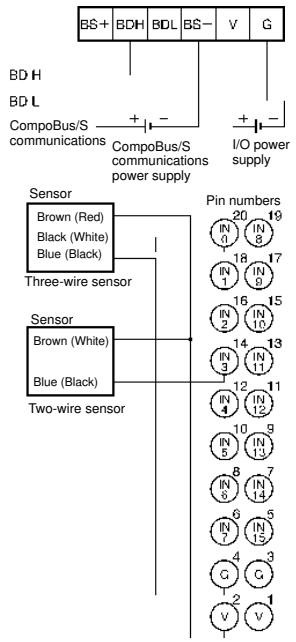
SRT2-VOD08S-1



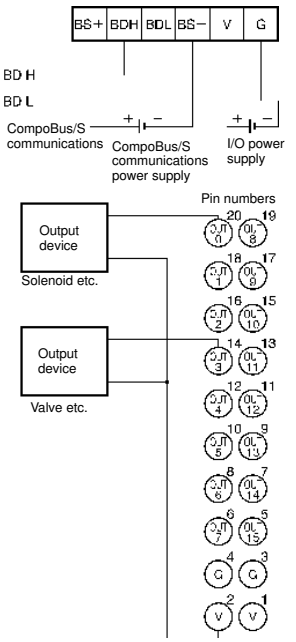
SRT2-VID16ML



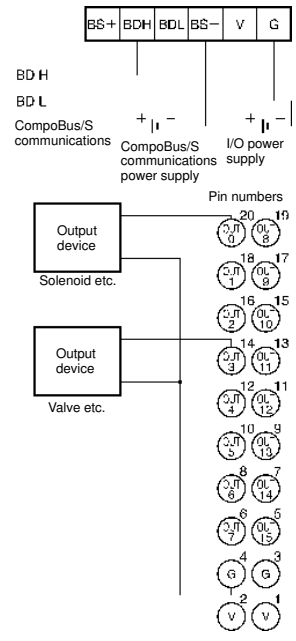
SRT2-VID16ML-1



SRT2-VOD16ML



SRT2-VOD16ML-1



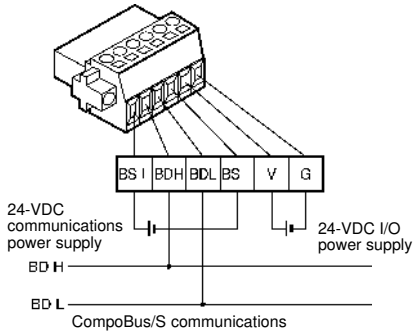
Note: 1. V terminals and G terminals are respectively connected internally.
When supplying power for I/O from communications connectors, power can be supplied to the sensor output devices from V and G terminals.

2. When using an inductive load (solenoid, valve etc.), either use one with an internal reverse electromotive force absorption diode or attach a diode externally.

Precautions

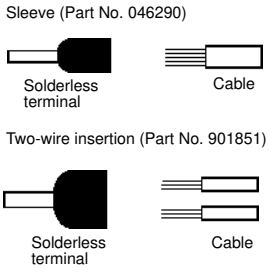
Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

Communications Connector Pin Arrangement



The following solderless terminals are recommended.

- Manufacturer: Weidmuller

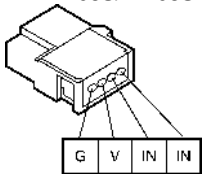


The following product is a dedicated tool.

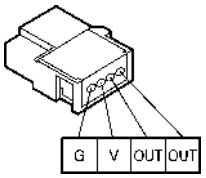
- Manufacturer: Weidmuller
  PZ1.5 Crimper (Part No. 900599)

Sensor Connector Pin Arrangement

SRT2-VID08S/VID08S-1



SRT2-VOD08S/VOD08S-1



Model	Cable conductor size
XS8A-0441	0.3 to 0.5 mm^2
XS8A-0442	0.14 to 0.2 mm^2

Note: The XS8A-0441 or XS8A-0442 Connector is not provided with the SRT2-VID or SRT2-VOD. Place an order for the connector separately.

Calculate the cable conductor size as follows.

The following information is given on each sensor cable:

Cable dia. (Number of conductors/Conductor dia.)

Conductor size (mm^2) =
(Conductor dia./2)^2 x π x Number of conductors

Example: E3S-A
4 dia. (18/0.12)
Conductor size (mm^2) = (0.12/2)^2 x 3.14 x 18 $\simeq$ 0.20

The conductor size is 0.2 mm^2. Therefore, use the XS8A-0442.

MIL Connector Pin Arrangement

SRT2-VID16ML/VID16ML-1

Function	Pin No.
IN0	20
IN1	18
IN2	16
IN3	14
IN4	12
IN5	10
IN6	8
IN7	6
G	4
V	2

Function	Pin No.
19	IN8
17	IN9
15	IN10
13	IN11
11	IN12
9	IN13
7	IN14
5	IN15
3	G
1	V

SRT2-VOD16ML/VOD16ML-1

Function	Pin No.
OUT0	20
OUT1	18
OUT2	16
OUT3	14
OUT4	12
OUT5	10
OUT6	8
OUT7	6
G	4
V	2

Function	Pin No.
19	OUT8
17	OUT9
15	OUT10
13	OUT11
11	OUT12
9	OUT13
7	OUT14
5	OUT15
3	G
1	V

Note: 1. No cable connector is provided. Order the connector separately.

- Applicable Connector
  XG4M-2030-T
- Applicable Connector Cables
  G79-O50C
  G79-O25C
  G79-I50C
  G79-I25C

2. Refer to the following table for ordering information on the applicable Cables.

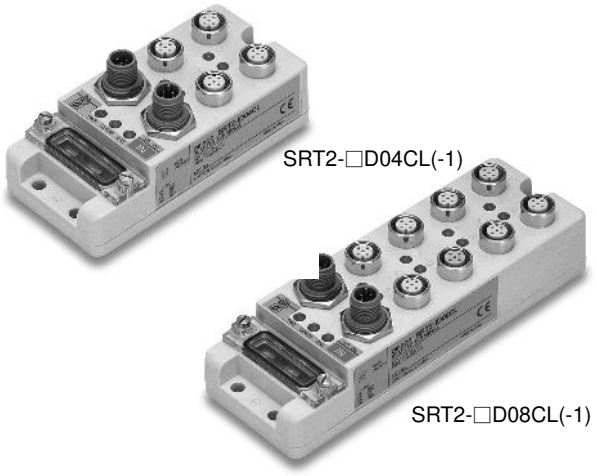
Applicable Cables

Connectable product	Model		Applicable Cable
I/O Block	G7TC-OC16 G7TC-OC08 G7TC-ID16-5 G7TC-IA16-5 G7VC Series G70A Series G70D Series	↔	G79-O50C (L = 500 mm)
			G79-O25C (L = 250 mm)
Connector-Terminal Conversion Unit	XW2B Series		
Digital Display Unit	M7F		
I/O Block	G7TC-ID16 G7TC-IA16 G7TC-OC16-1	↔	G79-I50C (L = 500 mm)
			G79-I25C (L = 250 mm)

Waterproof Terminals

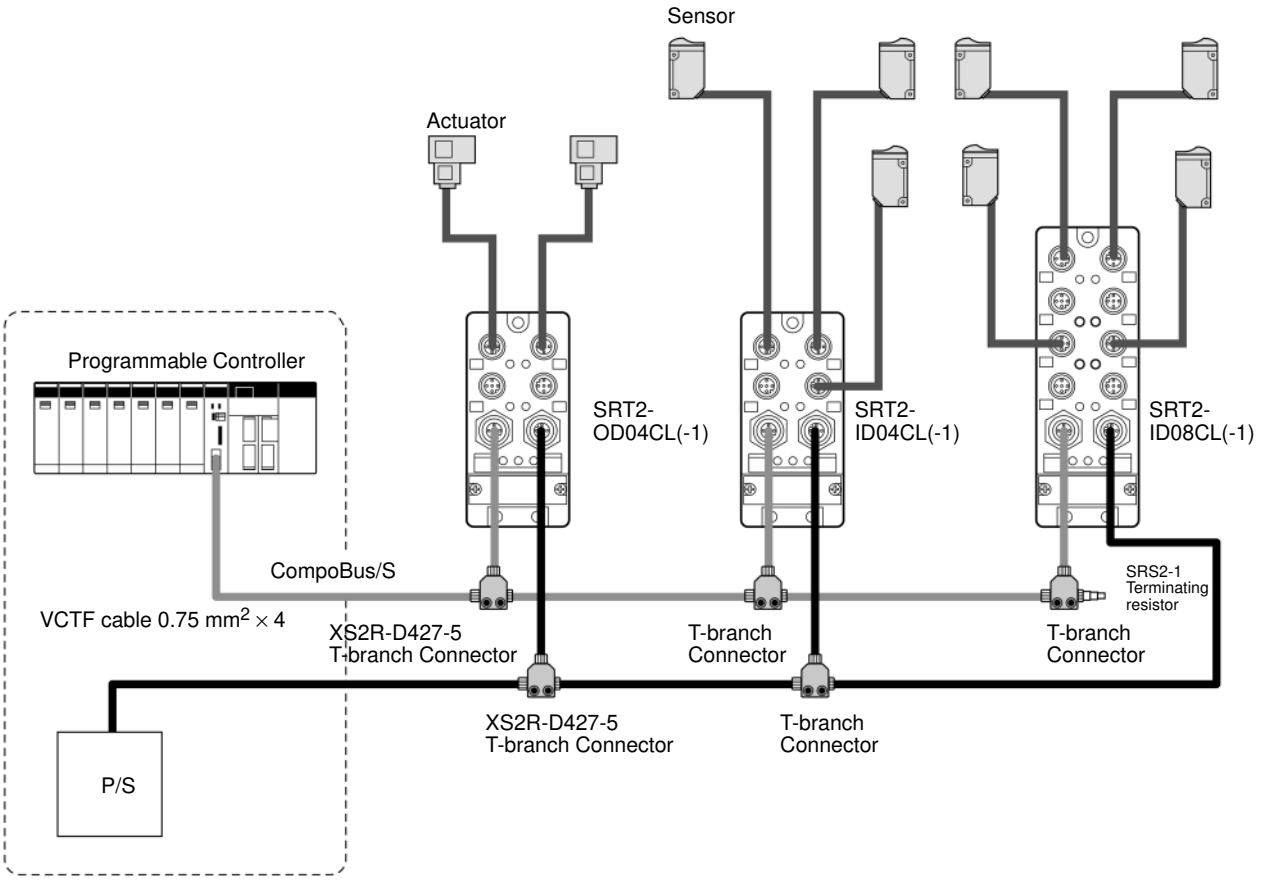
SRT2-□D0□CL(-1)

Eight Waterproof Terminal Models Emphasizing Cost Efficiency



- Reduced Labor
  Connection using connectors reduces the lead time required for installation. No tools are required for connection to a variety of devices.
- Reduced Wiring
  Signal line wiring has been reduced so that the Terminal can be mounted closer to sensors and other devices.
- Relay Box not Required
  Environment-resistant, dust-tight, drip-proof construction (IP67) enables direct on-site mounting.
- Easier Maintenance
  Significant reductions not only in setup time but also maintenance time.
- Reduced Space, Improved Operability
  Compact design (160 x 54 mm (W x H)) (8-point models)
  Settings and connections can be performed using the switch and connectors on the front side of the Terminal.

■ System Configuration



Ordering Information

Input/Output	Internal I/O circuit common	I/O points	I/O connections method	Rated voltage for I/O power supply	Model
Inputs	NPN (+ common)	4 points	Sensor I/O connector	24 VDC	SRT2-ID04CL
		8 points			SRT2-ID08CL
	PNP (– common)	4 points			SRT2-ID04CL-1
		8 points			SRT2-ID08CL-1
Outputs	NPN (– common)	4 points			SRT2-OD04CL
		8 points			SRT2-OD08CL
	PNP (+ common)	4 points			SRT2-OD04CL-1
		8 points			SRT2-OD08CL-1

Specifications

■ General Specifications

Item	SRT2-ID04CL SRT2-ID04CL-1 SRT2-OD04CL SRT2-OD04CL-1	SRT2-ID08CL SRT2-ID08CL-1 SRT2-OD08CL SRT2-OD08CL-1
Communications power supply voltage	14 to 26.4 VDC (supplied via communications connectors)	
I/O power supply voltage	20.4 to 26.4 VDC (24 VDC $_{-15\%}^{+10\%}$)	
Communications current consumption	15 mA max.	20 mA max.
Ambient temperature	Operating: –10°C to 55°C (with no icing) Storage: –25°C to 65°C	
Ambient humidity	Operating: 25% to 85% (with no condensation) Storage: 25% to 85% (with no condensation)	
Connector tightening torque	0.39 to 0.49 N • m	
Enclosure rating	IEC IP67	
Mounting method	Mounted using M5 screws	
Weight	Approx. 180 g	Approx. 240 g

■ Communications Media/Distances

Communications medium		4-conductor cable (VCTF, 0.75 mm^2 x 4)
Communications distance	**High-speed Communications Mode**	4-conductor VCTF cable: Main line length: 30 m max. Branch line length: 3 m max. Total branch line length: 30 m max. (When 4-conductor VCTF cable is used to connect fewer than 16 Slaves, the main line can be up to 100 m long and the total branch line length can be up to 50 m.)
	Long-distance Communications Mode	4-conductor VCTF cable: Variable branch wiring (total cable length 200 m max.) (There are no limits on the branching format or main, branch, or total line lengths. The terminator must be connected to the point in the system farthest from the master.)

Note: Use in combination with two-conductor VCTF cables and special flat cables is not possible.

■ Input Specifications

Item	SRT2-ID04CL SRT2-ID04CL-1	SRT2-ID08CL SRT2-ID08CL-1
Input current	For input voltage of 24 VDC: 6 mA max. per point For input voltage of 17 VDC: 3 mA min. per point	
Input impedance	4.4 kΩ	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
ON voltage	15 VDC min.	
OFF voltage	5 VDC max.	
OFF current	1 mA max.	
Number of circuits	4 points with 1 common	8 points with 1 common

■ Output Specifications

Item	SRT2-OD04CL SRT2-OD04CL-1	SRT2-OD08CL SRT2-OD08CL-1
Rated output current	0.5 A per point (2 A per common)	0.5 A per point (2.4 A per common)
Residual voltage	1.2 V max.	
Leakage current	0.1 mA max.	
ON delay time	0.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits	4 points with 1 common	8 points with 1 common

■ Applicable Connectors

Power Supply Connectors

Model	Specification
XS2C-D4□□	Assembling-type connector (crimp, soldering, or screw) socket
XS2W-D42□-□□□-□	Cable with connector on each end
XS2F-D42□-□80-□	Cable with connector at one end (socket end)
XS2R-D427-5	T-branch connector

I/O Connectors

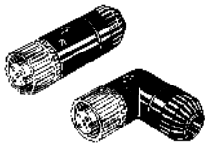
Model	Specification
XS2G-D4□□	Assembling type connector (crimp, soldering, or screw) Socket
XS2H-D421-□□□-□	Cable with connector at one end (plug end)
XS2W-D42□-□□□-□	Cable with connector on each end
XS2Z-12	Waterproof cover
XS2Z-15	Dust cover

Communications Connector

Model	Specification
XS2R-D427-5	T-branch connector
SRS2-1	Connector with terminating resistor (plug)
XS2G-D4S7	Assembling-type connector (for 4-conductor VCTF cable) plug (See note.)
XS2C-D4S7	Assembling-type connector (for 4-conductor VCTF socket) socket (See note.)

Note: The XS2G-D4S7 and XS2C-D4S7 will be released soon.

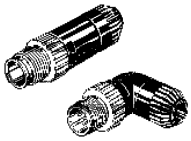
Assembling-type Connector Socket
Power Supply and Communications

Model	Applicable cable external dia.	Cable pull-out direction	No. of poles	Connection method		
				Crimp	Solder	Screw
	6 dia. (5 to 6 dia.)	Straight	4	XS2C-D4C1	XS2C-D421	XS2C-D4S1
		L-shaped		XS2C-D4C2	XS2C-D422	XS2C-D4S2
	5 dia. (4 to 5 dia.)	Straight		XS2C-D4C3	XS2C-D423	XS2C-D4S3
		L-shaped		XS2C-D4C4	XS2C-D424	XS2C-D4S4
	3 dia. (3 to 4 dia.)	Straight		XS2C-D4C5	XS2C-D425	XS2C-D4S5
		L-shaped		XS2C-D4C6	XS2C-D426	XS2C-D4S6
	7 dia. (7 to 8 dia.)	Straight		---	---	XS2C-D4S7 (see note)

Note: Only the XS2C-D4S7 with a diameter of 7 mm can be used for communications.

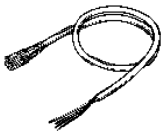
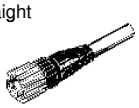
Assembling-type Connector Plug

Power Supply and Communications

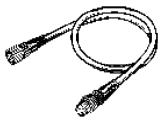
Appearance	Applicable cable external dia.	Cable pull-out direction	No. of poles	Connection method		
				Crimp	Solder	Screw
	6 dia. (5 to 6 dia.)	Straight	4	XS2G-D4C1	XS2G-D421	XS2G-D4S1
		L-shaped		---	XS2G-D422	XS2G-D4S2
	5 dia. (4 to 5 dia.)	Straight		XS2G-D4C3	XS2G-D423	XS2G-D4S3
		L-shaped		---	XS2G-D424	XS2G-D4S4
	3 dia. (3 to 4 dia.)	Straight		XS2G-D4C5	XS2G-D425	XS2G-D4S5
		L-shaped		---	XS2G-D426	XS2G-D4S6
	7 dia.	Straight		---	---	XS2G-D4S7 (see note)

Note: Only the XS2G-D4S7 with a diameter of 7 mm can be used for communications.

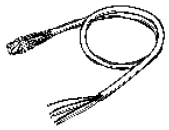
Connectors with Cables (Single-end Socket Each)
Power Supply

Appearance	Cable pull-out direction	No. of cable conductor	Cable length (m)	Standard cable	Robot cable (vibration resistive)
	Straight 	4	1	XS2F-D421-C80-A	XS2F-D421-C80-R
			2	XS2F-D421-D80-A	XS2F-D421-D80-R
			5	XS2F-D421-G80-A	XS2F-D421-G80-R
			10	XS2F-D421-J80-A	XS2F-D421-J80-R
	L-shaped 	4	1	XS2F-D422-C80-A	XS2F-D422-C80-R
			2	XS2F-D422-D80-A	XS2F-D422-D80-R
			5	XS2F-D422-G80-A	XS2F-D422-G80-R
			10	XS2F-D422-J80-A	XS2F-D422-J80-R

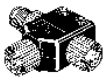
Connectors with Cables (Sockets and Plugs)
Power Supply and I/O

Appearance	Cable pull-out direction	No. of cable conductor	Cable length (m)	Standard cable	Robot cable (vibration resistive)
	Straight/Straight	4	1	XS2W-D421-C81-A	XS2W-D421-C81-R
			2	XS2W-D421-D81-A	XS2W-D421-D81-R
			5	XS2W-D421-G81-A	XS2W-D421-G81-R
	L-shaped/L-shaped		2	XS2W-D422-D81-A	---
			5	XS2W-D422-G81-A	
	Straight/L-shaped		2	XS2W-D423-D81-A	
			5	XS2W-D423-G81-A	
	L-shaped/Straight		2	XS2W-D424-D81-A	
			5	XS2W-D424-G81-A	

Connectors with Cables (Single-end Connector Each)
I/O

Appearance	Cable pull-out direction	No. of cable conductor	Cable length (m)	Standard cable
	Straight	3	0.3	XS2H-D421-AC0-A
		4		XS2H-D421-A80-A
		3	1	XS2H-D421-CC0-A
		4		XS2H-D421-C80-A

Connector Covers

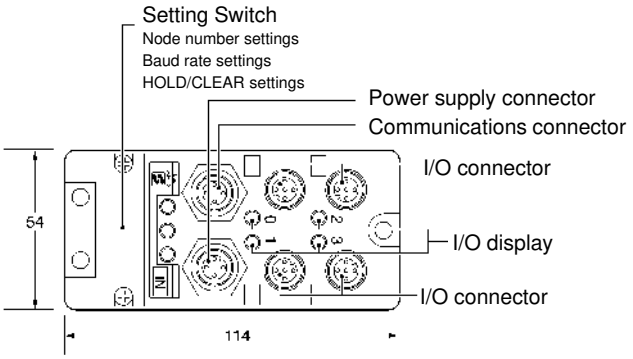
Appearance	Product	Model	Application
	T-branch Connector	XS2R-D427-5	Branching communications lines and power lines
	Connector Terminator (plug)	SRS2-1	Waterproof terminator
	Waterproof cover	XS2Z-12	Covers for unused I/O connectors
	Dust cover	XS2Z-15	

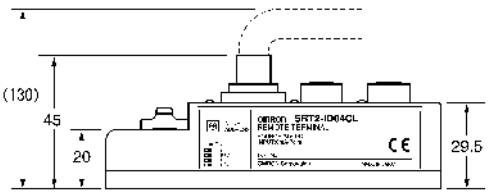
Dimensions

Note: All units are in millimeters unless otherwise indicated.

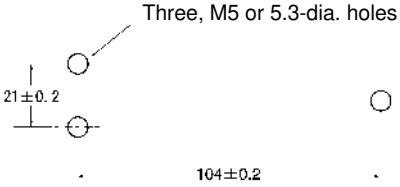
Models with 4 points

SRT2-ID04CL/SRT2-ID04CL-1
SRT2-OD04CL/SRT2-OD04CL-1



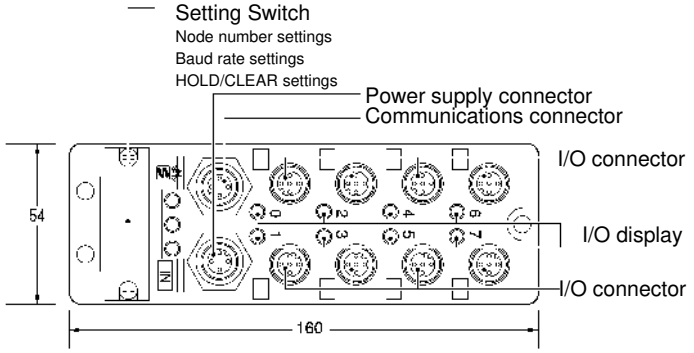


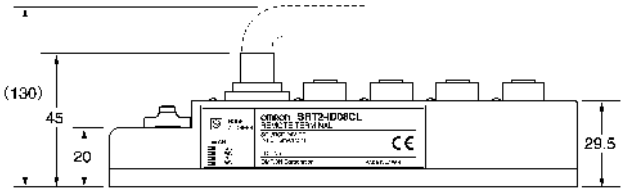
Mounting Dimensions



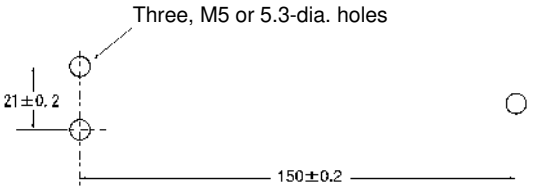
Models with 8 points

SRT2-ID08CL/SRT2-ID08CL-1
SRT2-OD08CL/SRT2-OD08CL-1





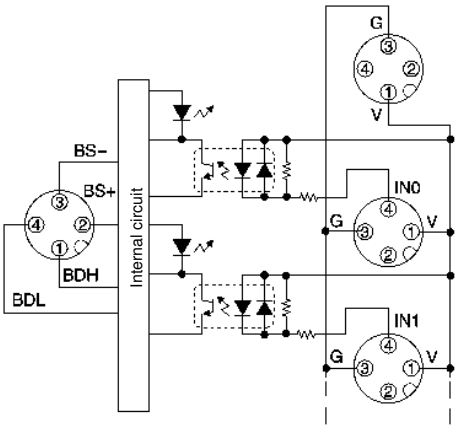
Mounting Dimensions



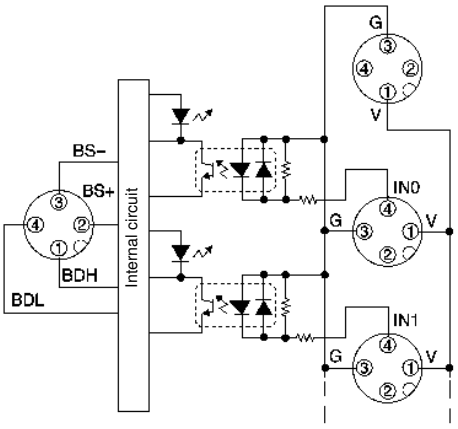
Installation

■ Internal Circuit Diagrams

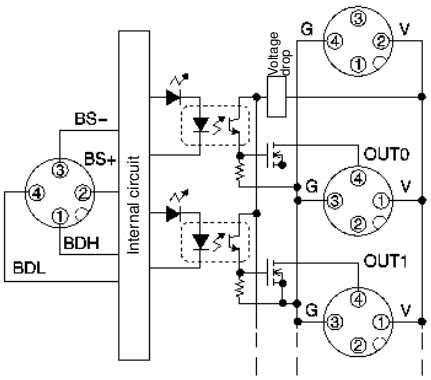
SRT2-ID0□CL (NPN)



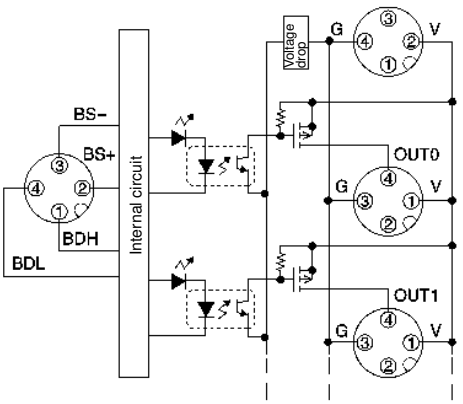
SRT2-ID0□CL-1 (PNP)



SRT2-OD0□CL (NPN)

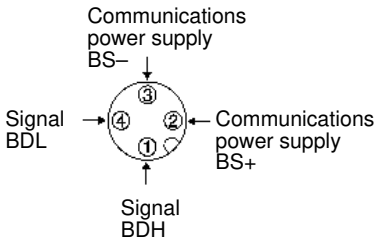


SRT2-OD0□CL-1 (PNP)

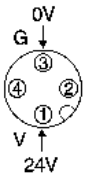


Connections Diagrams for Connectors

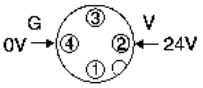
Communications Connector



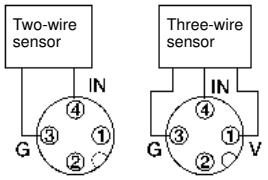
ID0□(-1) Power Supply Connector



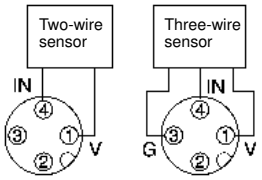
OD0□(-1) Power Supply Connector



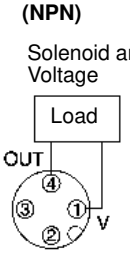
ID0□ Input Connector (NPN)



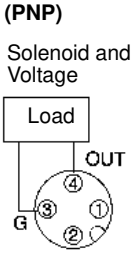
ID0□-1 Input Connector (PNP)



OD0□ Output Connector (NPN)



OD0□ Output Connector (PNP)



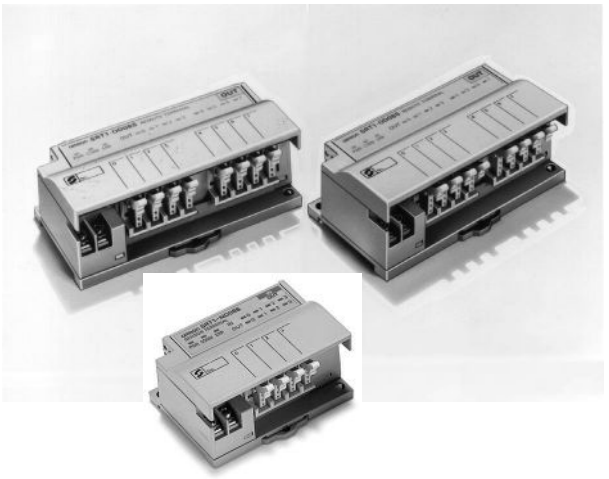
OMRON

Sensor Terminals

SRT2-□D08S

Connector Connection Models that Allows Easy Connection to Sensors and Output Devices

- Sensors with easy-to-wire connectors are easily attached or detached.
- Connects to 2-wire sensors.
- Remote teaching of the Sensor Terminal is possible with the PLC by using output signals of the Sensor Terminal.
- DIN track mounting and screw mounting are available.



Ordering Information

Classification	Internal I/O circuit common	I/O points	Model
For input	NPN (– common)	8 input points	SRT2-ID08S
For I/O	NPN (– common)	4 input/4 output points	SRT2-ND08S
For output	NPN (– common)	8 output points	SRT2-OD08S

Specifications

■ Ratings

Input

Item	SRT2-ID08S/-ND08S
Input current	10 mA max./point
ON delay time	1 ms max.
OFF delay time	1.5 ms max.
ON voltage	12 VDC min. between each input terminal and V_{CC}, the external sensor power supply
OFF voltage	4 VDC max. between each input terminal and V_{CC}, the external sensor power supply
OFF current	1 mA max.
Insulation method	Photocoupler
Input indicator	LED (yellow)

Output

Item	SRT2-ND08S	SRT2-OD08S
Rated output current	20 mA/point	300 mA/point
Residual voltage	1 V max.	0.6 V max.
ON delay time	1 ms max.	---
OFF delay time	1.5 ms max.	---
Leakage current	0.1 mA max.	
Insulation method	Photocoupler	
Output indicator	LED (yellow)	

■ Characteristics

Communications power supply voltage (see note 1)	14 to 26.4 VDC
Current consumption (see note 2)	50 mA max. at 24 VDC
Connection method	Multi-drop method and T-branch method
Dielectric strength	500 VAC for 1 min (1-mA sensing current between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4 2kV (power lines)
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction: 200 m/s^2 Destruction: 300 m/s^2
Mounting method	M4 screw mounting or 35-mm DIN track mounting
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions (except the DIN track directions and a pulling force of 10 N)
Terminal strength	No damage when 50 N pull load was applied for 10 s in all directions Tighten each screw to a torque of 0.6 to 1.18 N • m
Ambient temperature	Operating: 0°C to 55°C (with no icing or condensation) Storage: –20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating: 35% to 85%
Weight	SRT2-ID08S/OD08S: 100 g max., SRT2-ND08S: 80 g max.

Note: 1. The communications power supply voltage must be 20.4 to 26.4 VDC if the Unit is connected to 2-wire proximity sensors.

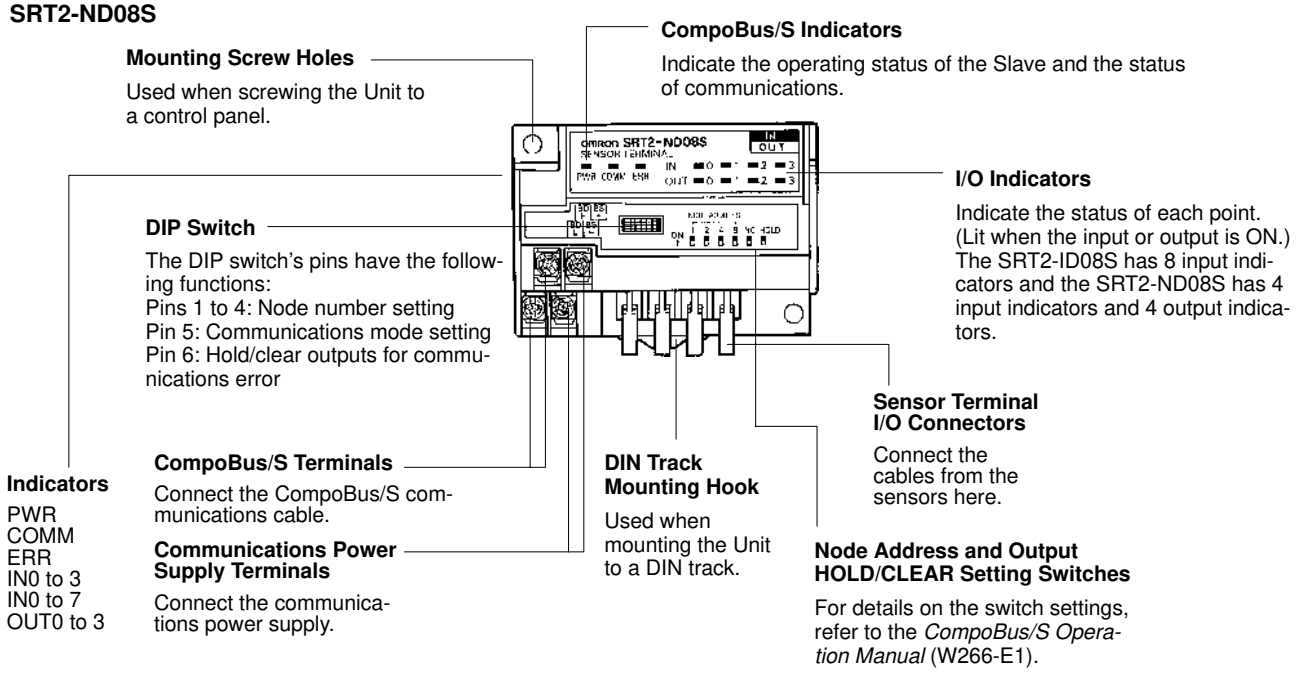
2. The above current consumption is a value with all the points turned OFF excluding the current consumption of the sensor connected to the Sensor Terminal.

■ External Sensor Power Supply

Power supply voltage	13.5 to 26.4 VDC
Current consumption	500 mA max. in total

Nomenclature

SRT2-ID08S
SRT2-ND08S

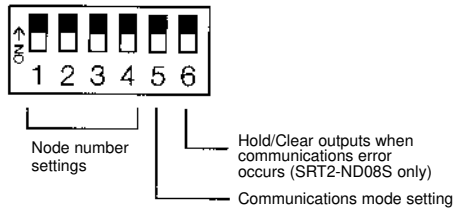


Indicators

Indicator	Name	Display	Color	Meaning
PWR	Power supply	Lit	Green	The communications power supply is ON.
		Not lit		The communications power supply is OFF.
COMM	Communication	Lit	Yellow	Normal communications
		Not lit		A communications error has occurred or the Unit is in standby status.
ERR	Communication error	Lit	Red	A communications error has occurred.
		Not lit		Normal communications or the Unit is in standby status.
0 to 3 (4 inputs/outputs) 0 to 7 (8 inputs)	Input	Lit	Yellow	The corresponding input is ON.
		Not lit		The corresponding input is OFF or the Unit is in standby status.
0 to 3 (4 inputs/outputs)	Output	Lit	Yellow	The corresponding output is ON.
		Not lit		The corresponding output is OFF or the Unit is in standby status.

Switch Setting

All pins are factory-set to OFF.



Pin 5 (Communications Mode Setting)

Pin 5	Communications mode
OFF	High-speed communications mode
ON	Long-distance communications mode

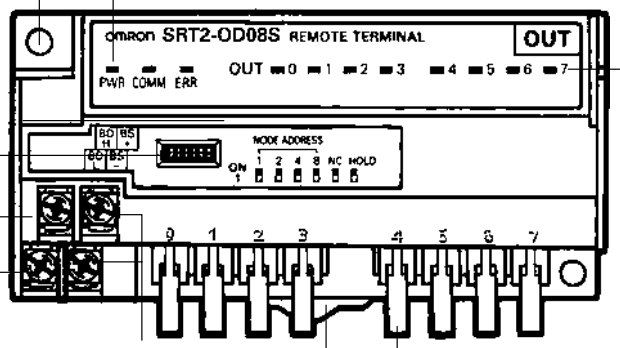
Pin 6 (Output HOLD/CLEAR Mode) (SRT2-ND08S Only)

HOLD	Function
OFF	Output status is cleared when a communications error occurs.
ON	Output status is maintained when a communications error occurs.

Node Number Settings

Node number	1	2	4	8
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON
11	ON	ON	OFF	ON
12	OFF	OFF	ON	ON
13	ON	OFF	ON	ON
14	OFF	ON	ON	ON
15	ON	ON	ON	ON

SRT2-OD08S



Mounting Screw Holes
Used when screwing the Unit to a control panel.

CompoBus/S Indicators
Indicate the operating status of the Slave and the status of communications.

Output Indicators
Indicate the output status of each channel.
Light when outputs turn ON.

DIP Switch

Communications Power Supply Terminals

Communications Terminals
Connect the communications cable.

Output Connectors
Connect the cables from the output device.

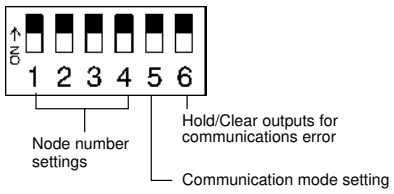
DIN Track Mounting Hook
Used when mounting the Unit to a DIN track.

Indicators

Indicator	Name	Display	Color	Meaning
PWR	Power supply	Lit	Green	The communications power supply is ON.
		Not lit		The communications power supply is OFF.
COMM	Communication	Lit	Yellow	Normal communications
		Not lit		A communications error has occurred or the Unit is in standby status.
ERR	Communication error	Lit	Red	A communications error has occurred.
		Not lit		Normal communications or the Unit is in standby status.
OUT0 to 7	Output	Lit	Yellow	The corresponding output is ON.
		Not lit		The corresponding output is OFF or the Unit is in standby status.

Switch Setting

All pins are factory-set to OFF.



Pin 5 (Communications Mode Setting)

Pin 5	Communications mode
OFF	High-speed communications mode
ON	Long-distance communications mode

Pin 6 (Output HOLD/CLEAR Mode)

HOLD	Function
OFF	Output status is cleared when a communications error occurs.
ON	Output status is maintained when a communications error occurs.

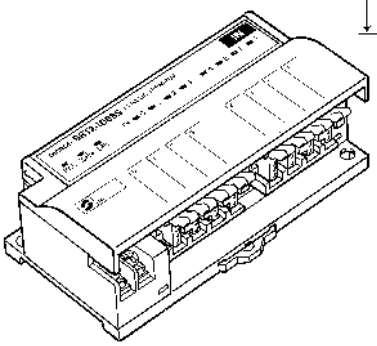
Node Number Settings

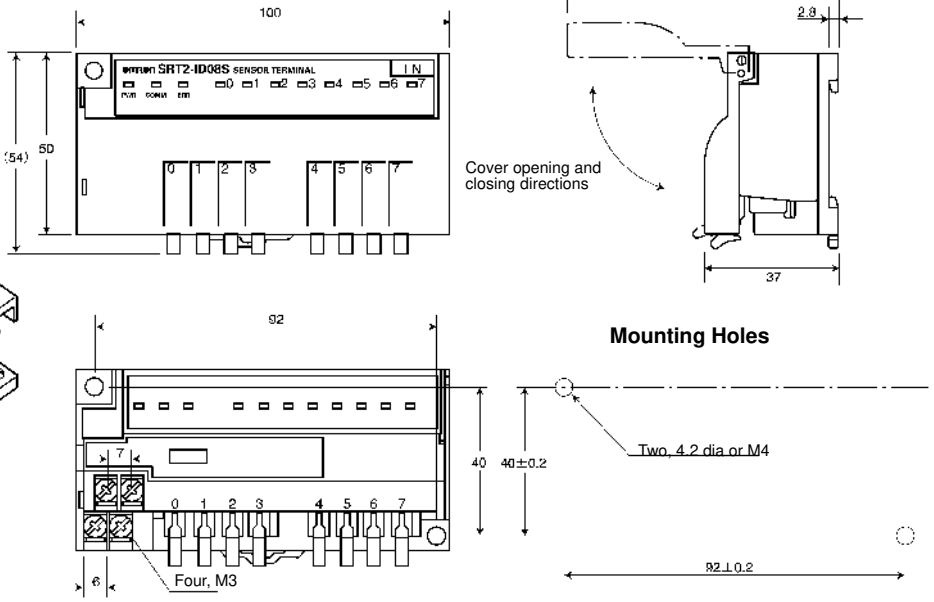
Node number	4	3	2	1
0	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF
7	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON
10	ON	OFF	ON	OFF
11	ON	OFF	ON	ON
12	ON	ON	OFF	OFF
13	ON	ON	OFF	ON
14	ON	ON	ON	OFF
15	ON	ON	ON	ON

Dimensions

Note: All units are in millimeters unless otherwise indicated.

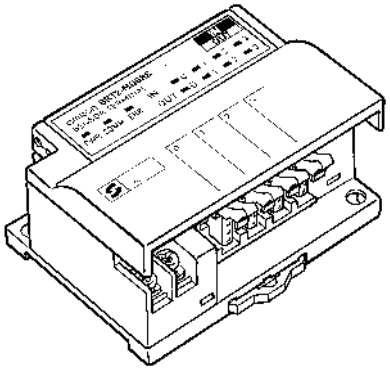
SRT2-ID08S

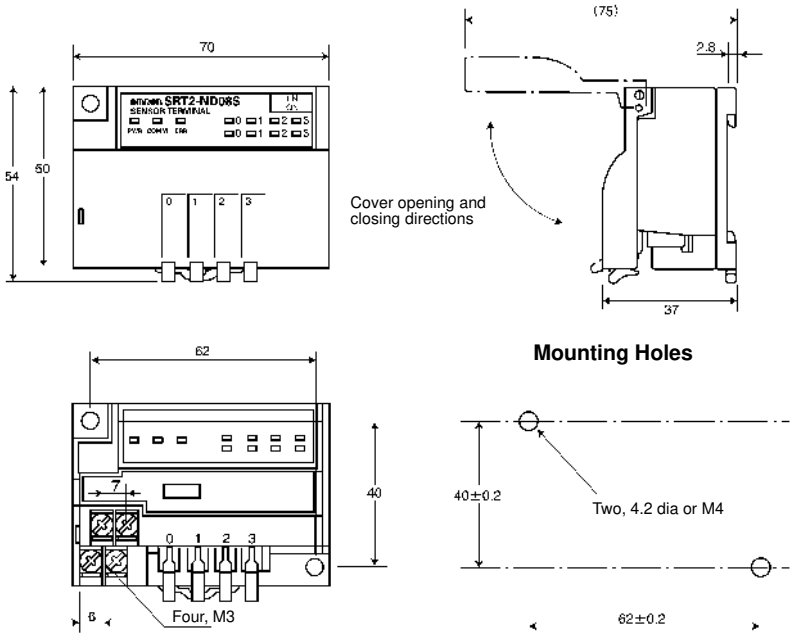




Mounting Holes

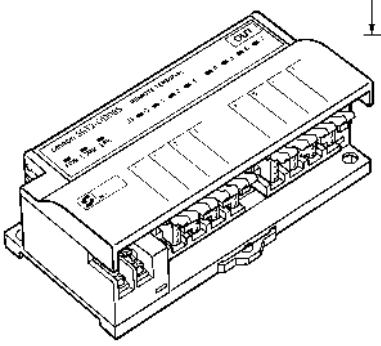
SRT2-ND08S

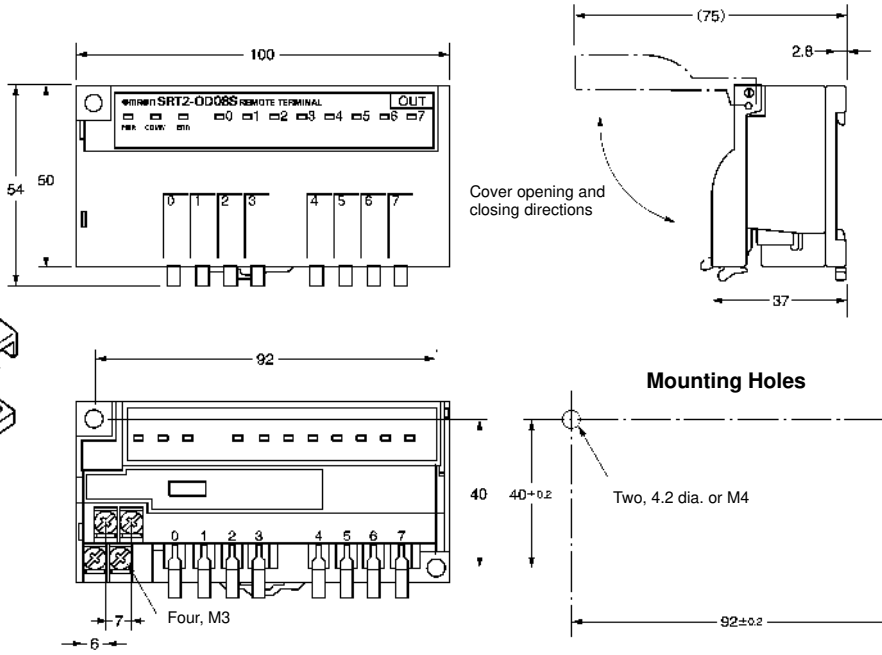




Mounting Holes

SRT2-OD08S

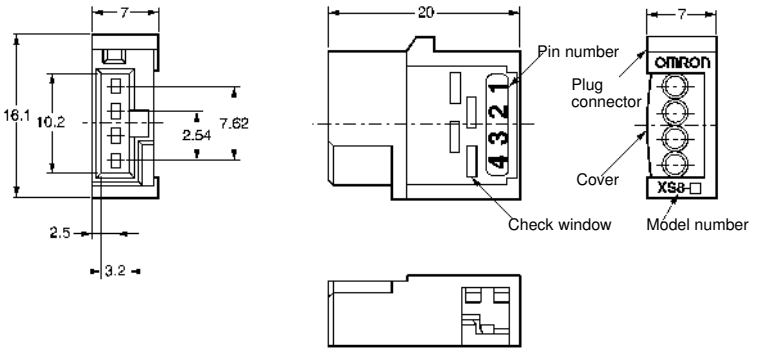




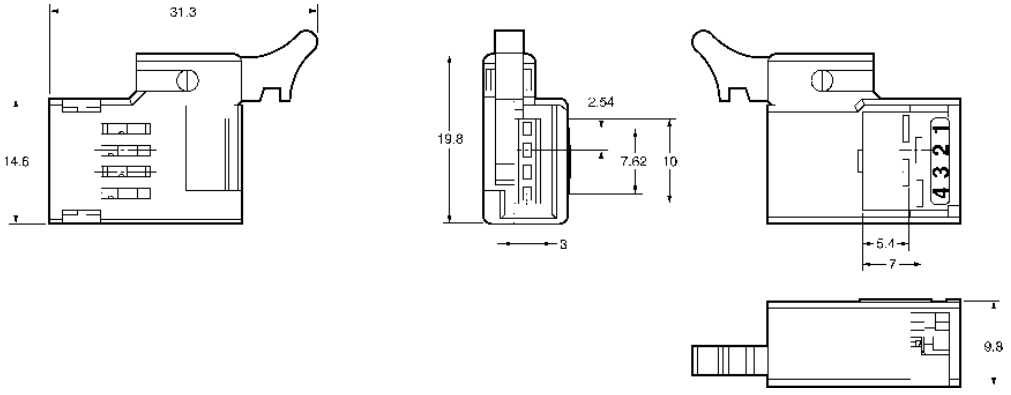
Cable Connector for SRT2-□D08S

Applicable conductor size (mm^2)	Model
0.3 to 0.5	XS8A-0441
0.14 to 0.2	XS8A-0442
0.3 to 0.5	XS8B-0443

XS8A-044□
(Cable Connector)



XS8B-0443
(Relay Socket)

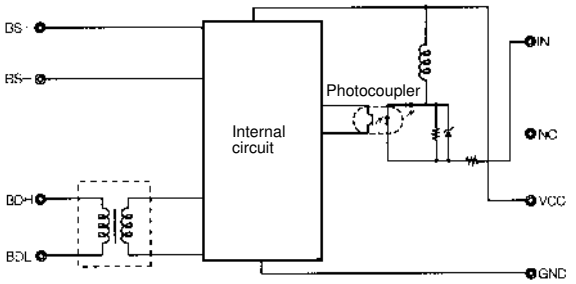


Calculate the cable conductor size as explained below.
The following information is given on each sensor cable:
Cable dia. (Number of conductors/Conductor dia.)
Conductor size (mm^2) = (Conductor dia./2)^2 x π x Number of conductors
Example: E3S-A
4 dia. (18/0.12)
Conductor size (mm^2) = (0.12/2)^2 x 3.14 x 18 ≃ 0.20
The conductor size is 0.2 mm^2. Therefore, use the XS8A-0442.

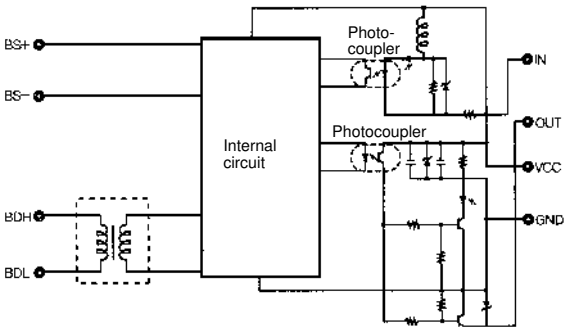
Installation

■ Internal Circuit Configuration

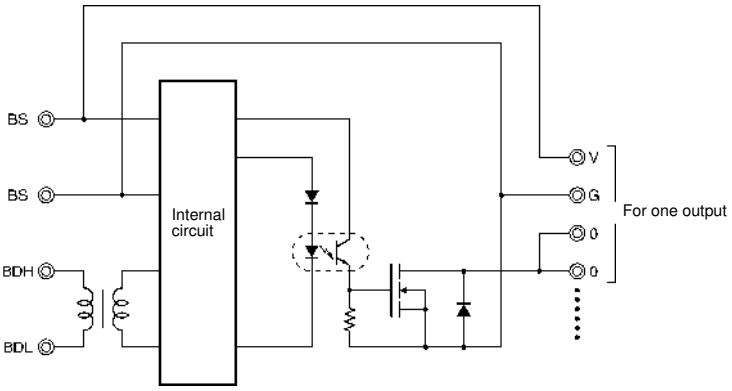
SRT2-ID08S



SRT2-ND08S



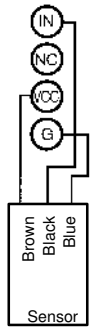
SRT2-OD08S



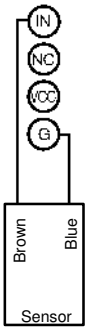
■ External Connections

SRT2-ID08S

Three-wire Sensor

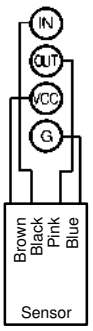


Two-wire Sensor

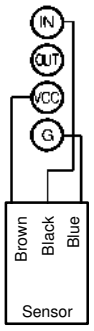


SRT2-ND08S

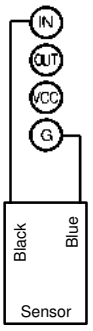
Sensor with Teaching Function
Sensor with External Diagnostic function
Sensor with Bank-switching Function



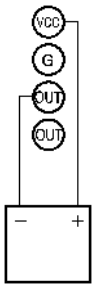
Three-wire Sensor



Two-wire Sensor



SRT2-OD08S

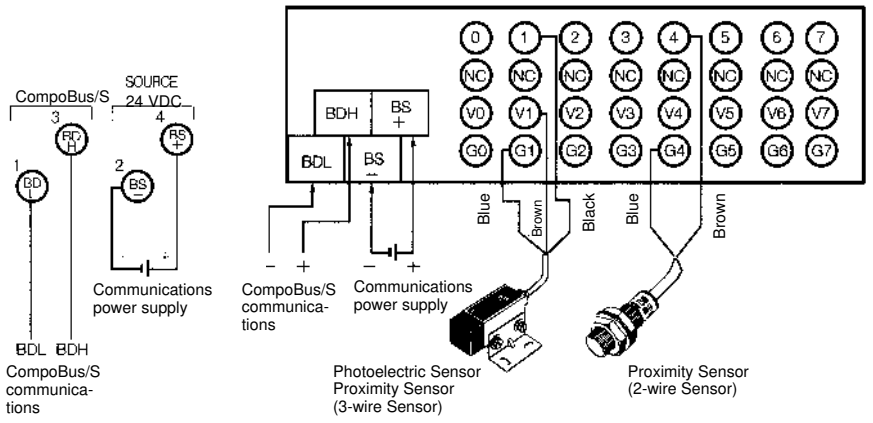


Valve, solenoid

■ Terminal Arrangement and I/O Device Connection Example

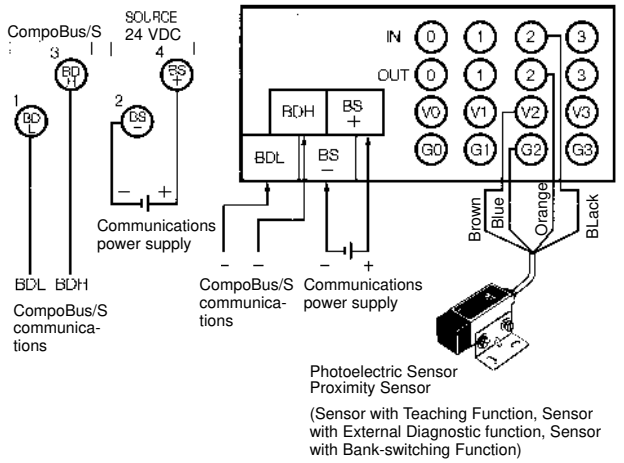
Input

SRT2-ID08S



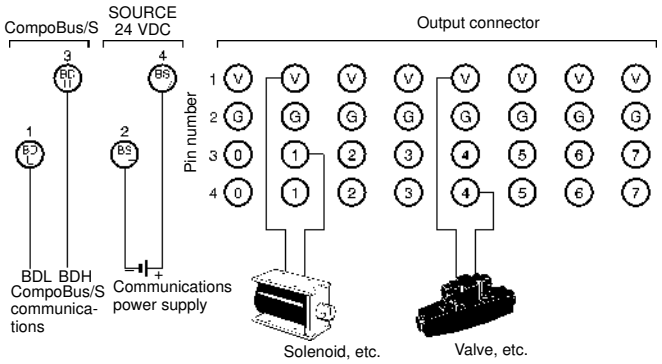
I/O

SRT2-ND08S



Output

SRT2-OD08S



Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

General Safety Precautions

Installation Environment

Do not install the Unit in the following places.

- Places with water, oil, or chemical sprayed on the Unit.
- Places with rapid temperature changes.
- Places with high humidity resulting in condensation.
- Places with intense electric and magnetic fields.
- Places with excessive vibration or shock.

Wiring

To prevent inductive noise, do not wire power lines or high-tension lines along with or near the cables.

Make sure that the polarity of each terminal is correct.

Make sure that the communications path and power line are connected correctly.

Secure the cables properly. Do not pull the cables with strong force, otherwise the cables may be disconnected from the terminals or connectors of the Unit.

Do not touch the Unit when the Unit is used in places with high ambient temperatures because the surface temperature of the Unit may be high.

Do not use paint thinner to clean the surface of the Unit, otherwise the surface will be damaged or discolored.

Correct Use

Use the Unit under its rated conditions.

Mount the Unit with M4 screws or to DIN tracks securely.

Typical Causes of Communications Errors

- The cables are not connected correctly.
- The node number setting is incorrect.
- The baud rate setting is incorrect.
- There is a strong noise source, such as an inverter motor, near the Unit. Install the Unit as far as possible from the noise source or shield the noise source.

Others

Use OMRON's XS8A-0441 or XS8A-0442 Connectors with the Unit.

Insert each connector into the Unit until the connector snaps in place. Make sure that terminal number 1 of the connector is on the lock lever side when inserting the connector.

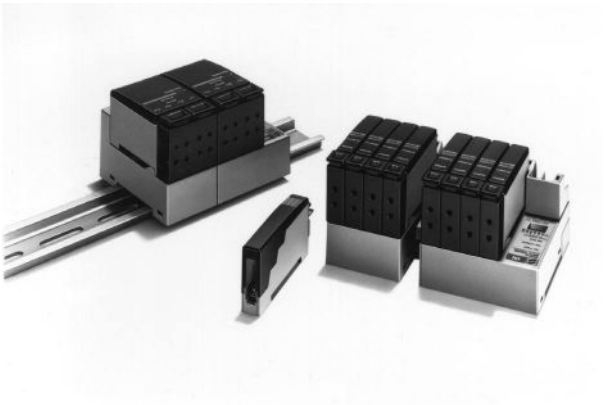
Refer to the *CompoBus/S Operation Manual (W266-E1)* for wiring the Unit.

OMRON

CompoBus/S Sensor Amplifier Terminals

SRT1-□□D04S

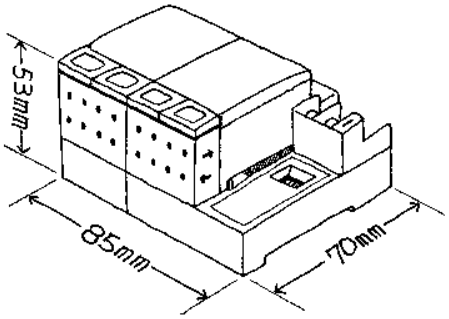
Snap On to Connect and Save Wiring Effort



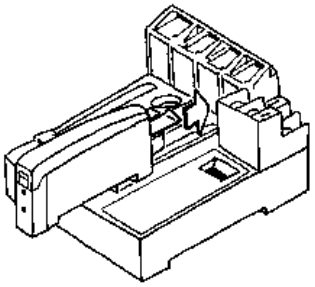
- The 4-channel fiber photoelectric amplifiers in Terminals with connectors offer a low cost and space savings.
- Connection of miniature and aluminum-detecting proximity sensors is supported.
- The product lineup included Terminal Block Units for easy connection to sensors with amplifiers, limit switches, etc.
- Connect to up to eight channels of sensors by using Expansion Blocks.

■ Features

Low Cost and Space Savings with 4-channel Amplifier Units

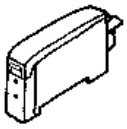


Just Snap On to Connect

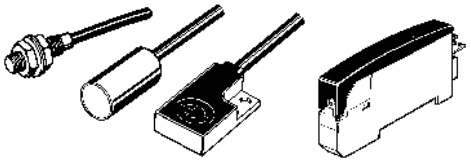


Connection Units

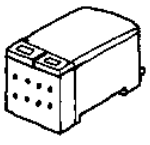
Photoelectric Sensors
One-channel Sensors



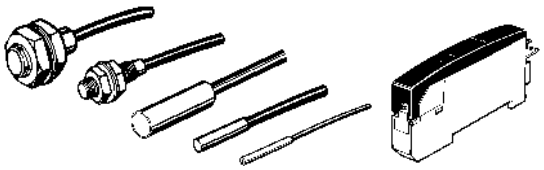
Proximity Sensors
E2CY Models (Amplifier Unit)



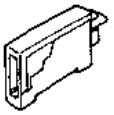
Four-channel Sensors



E2C-T Models (Amplifier Unit)

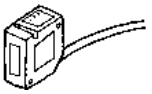


Terminal Block Unit

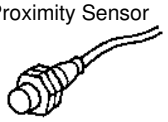


Various input devices can be connected.

Photoelectric Sensor



Proximity Sensor



Basic Switch and Limit Switch

Ordering Information

CompoBus/S Sensor Amplifier Terminals

Classification	I/O points	Connection Unit	Model
Communications	4	E3X-NT□/E3X-DA□/E2C□-T16/E39-JID01 (4 Units max.)	SRT1-TID04S
		E3X-NM16 (1 Unit max.)	SRT1-TKD04S
Expansion		E3X-NT□/E3X-DA16/E2C□-T16/E39-JID01 (4 Units max.)	SRT1-XID04S
		E3X-NM16 (1 Unit max.)	SRT1-XKD04S

Note: Long-distance communications mode is not supported.

Connection Units

Classification		Specifications	Model
Photoelectric Sensor	Models with E3X-N-type connector	General-purpose, 1 channel	E3X-NT16
		Multi-functional, 1 channel	E3X-NT26
		Long distance, high accuracy, 1 channel	E3X-NH16
		Multi-functional, 4 channels	E3X-NM16
	Models with E3X-DA-type connector	Digital, general-purpose, 1 channel	E3X-DA16
Proximity Sensor	Models with E2CY-type connector	Used to detect aluminum	E2CY-T16
	Models with E2C-T-type connector	Miniature	E2C-T16
Terminal Block Unit		One input point	E39-JID01

Specifications

■ Characteristics

CompoBus/S Sensor Amplifier Terminals

Item	Communication Terminals		Expansion Terminals	
Model	SRT1-TID04S	SRT1-TKD04S	SRT1-XID04S	SRT1-XKD04S
Communications power supply voltage	14 to 26.4 VDC (See note 1)		---	---
I/O points	4 input points			
Connected Sensors	Total of four E3X-NT□6, E3X-NH16, E3X-DA16, E2C□-T16, or E39-JID01 (See note 2)	One E3X-NM16 (See note 2)	Total of four E3X-NT□6, E3X-NH16, E3X-DA16, E2C□-T16, or E39-JID01	One E3X-NM16
Current consumption	60 mA max. (See note 3)		10 mA max. (See note 3)	
Dielectric strength	500 VAC for 1 min (1-mA sensing current between insulated circuits)			
Noise immunity	Power supply normal: ±600 V for 10 minutes with a pulse width of 100 ns to 1 μs Power supply common: ±1,500 V for 10 minutes with a pulse width of 100 ns to 1 μs			
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude			
Shock resistance	Malfunction: 200 m/s^2 Destruction: 300 m/s^2			
Mounting method	M4 screw mounting or 35-mm DIN track mounting			
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions (except the DIN track directions and a pulling force of 10 N			
Terminal strength	No damage when 49 N pull load was applied for 10 s in all directions. Tighten each screw to a torque of 0.6 to 1.18 N • m.			
Ambient temperature	Operating: 0°C to 55°C (with no icing or condensation) Storage: –20°C to 65°C (with no icing or condensation)			
Ambient humidity	Operating: 35% to 85%			
Weight	70 g max.	65 g max.	45 g max.	35 g max.

Note: 1. The communications power supply voltage must be 20.4 to 26.4 VDC if the Terminal is connected to 2-wire proximity sensors.
2. When adding Connection Units, use SRT1-XID04S or SRT1-XKD04S.
3. The value does not include the current consumption of Connection Units.

E3X-DA/N Models

Model	E3X-DA16	E3X-NH16	E3X-NT16	E3X-NT26	E3X-NM16
Current consumption	75 mA max.		50 mA max.		150 mA
Response time	High-speed mode: 0.25 ms (operate/release) Standard mode: 1 ms (operate/release) Long-distance mode: 4 ms (operate/release) 4.0 ms max. when connected to the SRT1-□□D04S (standard mode)	1 ms max. (4.0 ms max. when connected to the SRT1-□□D04S)	500 µS max. (2.0 ms max. when connected to the SRT1-□□D04S)		
Timer function	OFF-delay timer (settable in the range 0 to 200 ms in 5-ms units)	Not available		OFF-delay timer (fixed to 40 ms)	
Remote teaching input	Not available			Available (Remote teaching disabled)	
Indicator	Operation indicator (orange), 7-segment digital incident level display (red), 7-segment digital incident level percentage display (red), incident level and threshold 2-color indication bar (green and red), 7-segment digital threshold display (red)	Operation indicator (orange) 8-level incident level indicator (green) 13-level threshold indicator (red)			
Teaching confirmation function	Indicators (red/green LED) and buzzer				
Output	Light ON and Dark ON switch selectable				
Ambient illumination	Sunlight: 20,000 lux max.; incandescent lamp: 10,000 lux max.	Sunlight: 10,000 lux max.; incandescent lamp: 3,000 lux max.			
Insulation resistance	20 MΩ max. (at 500 VDC)				
Dielectric strength	1,000 VAC at 50/60 Hz for 1 min				
Vibration resistance	Destruction:10 to 55 Hz, 1.5-mm double amplitude				
Shock resistance	Destruction:500 m/s^2 3 times each in X, Y, and Z directions				
Mounting method	Connected to the SRT1-□□D04S using connectors.				
Mounting strength	No damage when 49 N pull load was applied for 10 s in all directions.				
Ambient temperature	Operating: –25°C to 55°C (with no icing or condensation) Storage: –30°C to 70°C (with no icing or condensation)	Operating: –25°C to 55°C (with no icing or condensation) Storage: –40°C to 70°C (with no icing or condensation)			
Ambient humidity	Operating: 35% to 85% (with no condensation) Storage: 35% to 85% (with no condensation)				
Weight	60 g max.	30 g max.	30 g max.	30 g max.	60 g max.

E2CY Models (Amplifier Unit)

Supply voltage	12 to 24 VDC ± 10%, ripple (p-p): 10% max.
Current consumption	40 mA max.
Sensing distance adjustment range	10% min. of stable sensing distance
Adjustment method	Teaching
Differential travel	10% max. of sensing distance in FINE mode. 15% max. of sensing distance in NORM mode.
Response time	Refer to the response frequency of the Sensor Head in use.
Control output	NPN open collector output of 100 mA max. with a max. residual voltage of 1 V
Self-diagnostic output	NPN open collector output of 100 mA max. with a max. residual voltage of 1 V
Circuit protection	Reverse polarity, surge voltage, and load short-circuit (for both control output and diagnosis output)
Cord length compensation	Freely cut or extended within a range between 0.5 and 5 m
Indicators	Operation indicator (orange) Excess gain level indicators (ON in green with sensing object in proximity and ON in orange with no sensing object in proximity) Fine-tuning indicator (green)
Ambient temperature	Operating: –10 to 55°C (with no icing or condensation)
Ambient humidity	Operating: 35% to 85% (with no condensation)
Influence of temperature on sensing distance (at 23°C)	±10% max. (–10°C to 55°C)
Insulation resistance	50 MΩ min. (at 500 VDC) between current carry parts and case
Dielectric strength	1,000 VAC (50/60 Hz) for 1 min between current carry parts and case
Vibration resistance	Destruction: 10 to 150 Hz, 1.5-mm double amplitude or 100 m/s^2 for 2 hours each in X, Y, and Z directions
Shock resistance	Destruction: 300 m/s^2 for 3 hours each in X, Y, and Z directions
Mounting method	Connected to the SRT1-□□D04S using connectors.
Mounting strength	No damage when 49 N pull load was applied for 10 s in all directions.
Degree of protection	IEC60529 IP50 with the sensor cord and protective cover attached
Material	Case: PTB resin Cover: PC
Teaching monitor function	Orange and green indicators shared by operation and excess gain indication
Output status	Normally open or normally closed selectable
Weight (packaged state)	Approx. 30 g

E2C-T Models (Amplifier Unit)

Item			Sensor Head			
			E2C-CR5B2	E2C-CR8A E2C-CR8B	E2C-X1A E2C-C1A	E2C-X1R5A
Supply voltage			12 to 24 VDC ± 10% (operation: 10 to 26.4 VDC), ripple (p-p): ±10% max.			
Current consumption			**50 mA max.**			
Sensing distance adjustment range (see note 1)	Setting distance for teaching without sensing object (see note 2)		**0.4 mm min.**	**0.72 mm min.**	**0.9 mm min.**	**1.35 mm min.**
	Setting distance for teaching with and without sensing object or positioning teaching	**0 to 40°C**	**0.1 to 0.7 mm**	**0.16 to 1.2 mm**	**0.2 to 1.5 mm**	**0.3 to 2 mm**
		0 to 55°C	**0.1 to 0.5 mm**	**0.16 to 0.8 mm**	**0.2 to 1.0 m**	**0.3 to 1.5 mm**
Temperature influence			±25% max. of sensing distance at 23°C (0 to 55°C)	**±10% max. of sensing distance at 23°C (0 to 55°C)**		
Differential travel			15% max. of sensing distance	10% max. of sensing distance		
Response time			Refer to the response frequency of the Proximity Sensor in use.			
Control output			NPN open collector output of 100 mA max. at 26.4 V with a residual voltage of 1 V max. NO/NC selectable (NO: ON with a sensing object)			
Cord length compensation			**3 m only**	**1, 2, or 3 m selectable**		
Indicators			Operation indicator (orange) and stability indicator (green)			
Teaching monitor function			Indicators (orange and green) also used for stability indication.			
Ambient temperature			Operating: 0 to 55°C (with no icing or condensation)			
Ambient humidity			**Operating: 35% to 95% (with no icing)**			
Voltage influence			±1% max. of sensing distance within a range of 90% to 110% of the rated power supply voltage			
Insulation resistance			50 MΩ min. at 500 VDC between current carry parts and case			
Dielectric strength			1,000 VAC (50/60 Hz) for 1 min between current carry parts and case			
Vibration resistance			Destruction: 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions			
Mounting method			Connected to the SRT1-□□D04S using connectors.			
Mounting strength			No damage when 49 N pull load was applied for 10 s in all directions.			
Degree of protection			**IEC60529 IP50**			
Weight			**Approx. 30 g**			

Note: 1. Perform positioning teaching within the stable sensing distance, otherwise reset failures may result when the E2C-T is in operation. If a fine-difference teaching is performed with and without a sensing object, reset failures may result when the E2C-T is in operation even if teaching is successful.

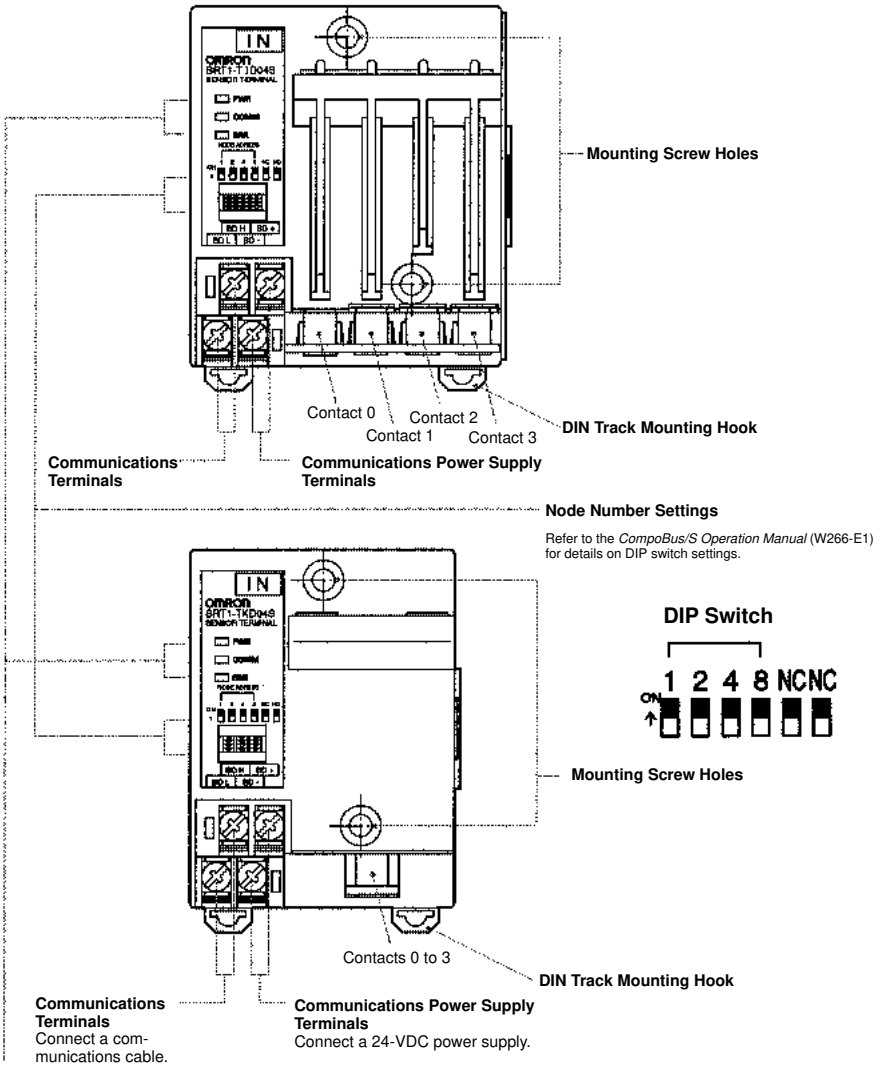
2. The above distances for teaching without sensing object were measured without surrounding metal or background.

Terminal Block Units

Model	E39-JID01
Input current	10 mA max.
ON voltage	12 VDC min. between input terminal and external sensor power supply
OFF voltage	4 VDC max. between input terminal and external sensor power supply
OFF current	1 mA max.
ON delay time	1 ms max. (connected to SRT1-□□D04S)
OFF delay time	1.5 ms max. (connected to SRT1-□□D04S)
Input indicators	LED (Orange)
External sensor current capacity	50 mA max.
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction: 200 m/s^2 Destruction: 300 m/s^2
Mounting method	M4 screws or 35-mm DIN track mounting
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions (except the DIN track directions and a pulling force of 10 N)
Terminal strength	No damage when 49 N pull load was applied for 10 s in all directions. Tighten each screw to a torque of 0.6 to 1.18 N • m.
Ambient temperature	Operating: 0°C to 55°C (with no icing or condensation) Storage: –20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating: 35% to 85%
Weight	25 g max.

Nomenclature

SRT1-TID04S
SRT1-TKD04S



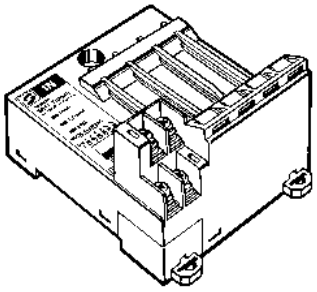
Indicators

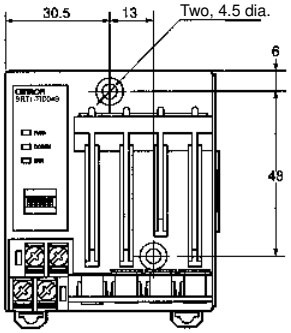
Indicator	Name	Display	Color	Meaning
PWR	Power supply	Lit	Green	The communications power supply is ON.
		Not lit		The communications power supply is OFF.
COMM	Communications	Lit	Yellow	Normal communications.
		Not lit		A communications error has occurred or the Unit is in standby status.
ERR	Communications error	Lit	Red	A communications error has occurred.
		Not lit		Normal communications or the Unit is in standby status.

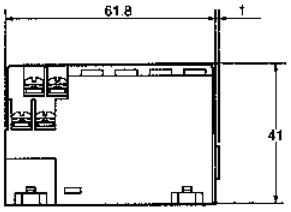
Dimensions

Note: All units are in millimeters unless otherwise indicated.

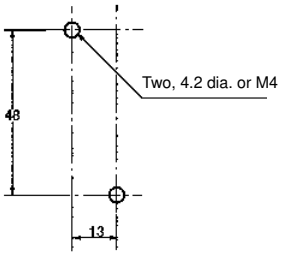
SRT1-TID04S

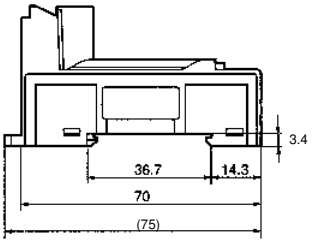




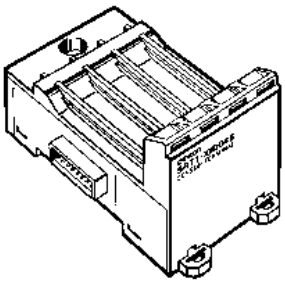


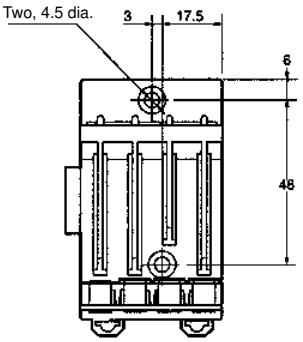
Mounting Holes

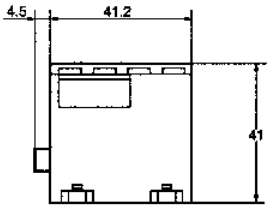




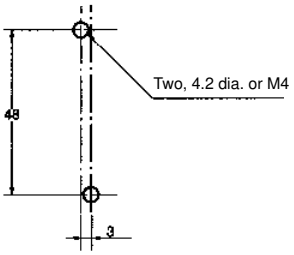
SRT1-XID04S

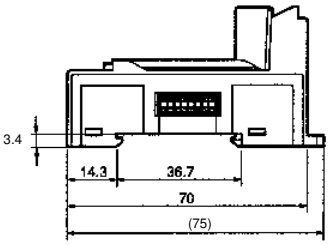




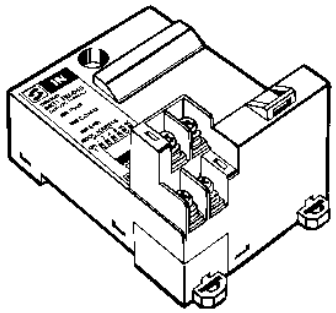


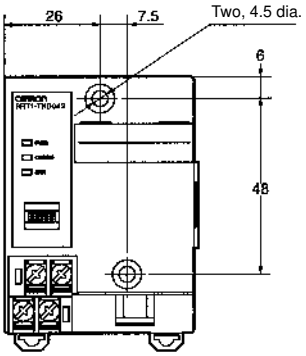
Mounting Holes



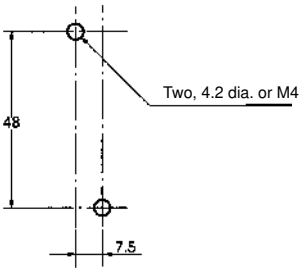


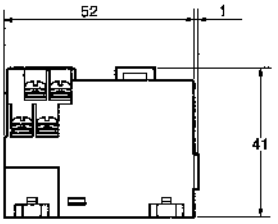
SRT1-TKD04S

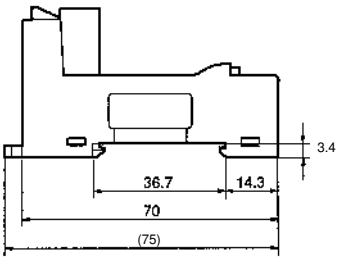




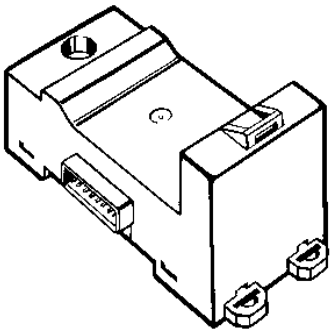
Mounting Holes

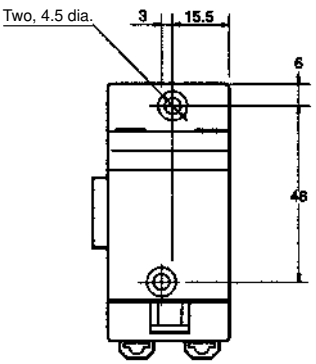




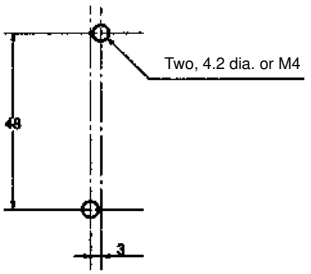


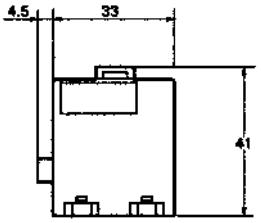
SRT1-XKD04S

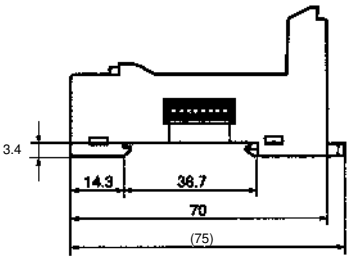




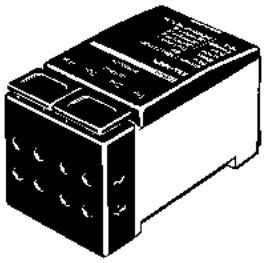
Mounting Holes

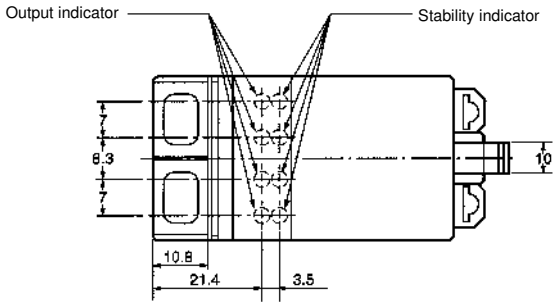


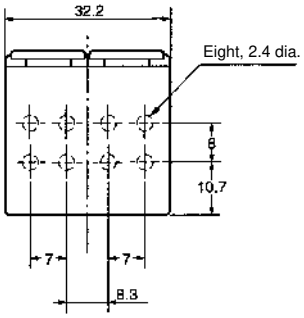


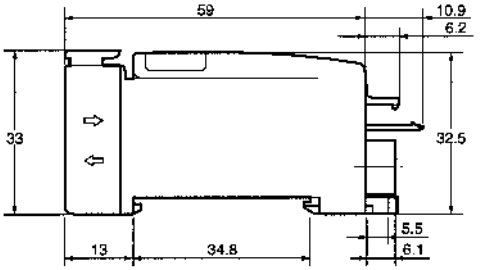


E3X-NM16

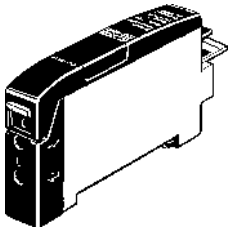


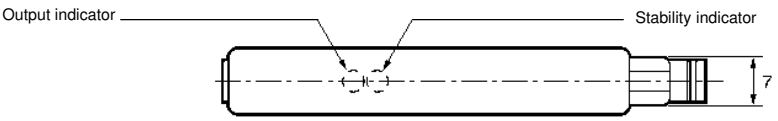


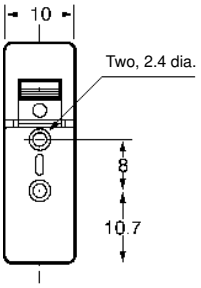


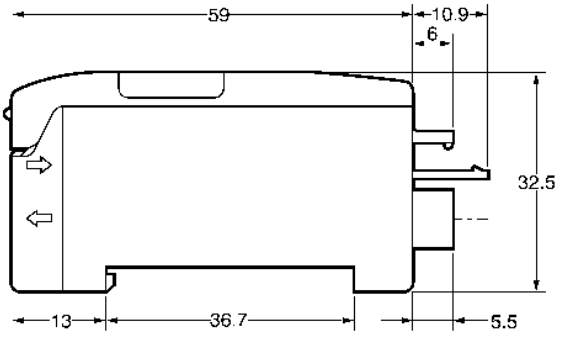


E3X-NT□6

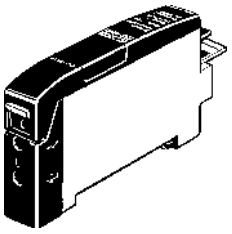


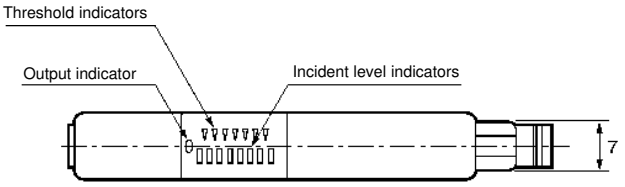


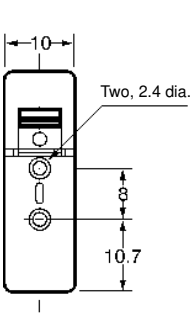


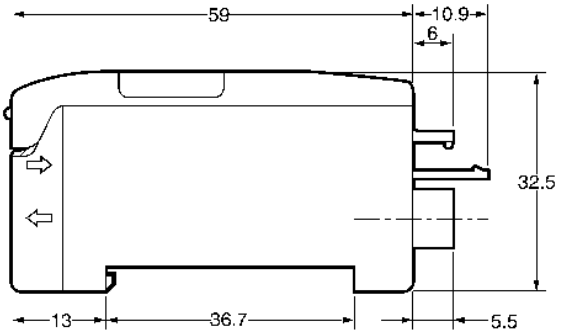


E3X-NH16

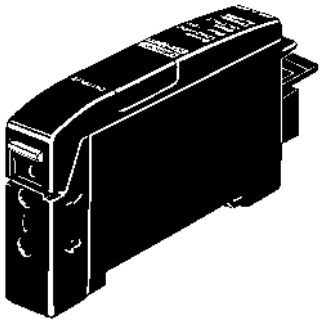


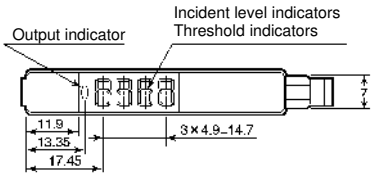


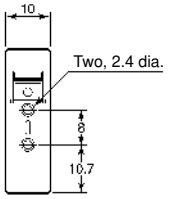


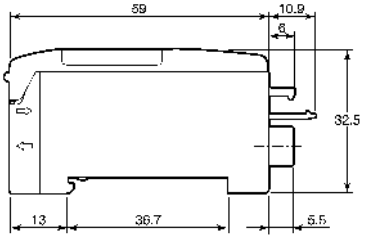


E3X-DA16

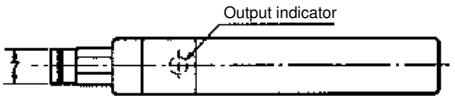


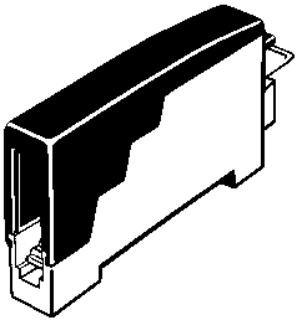


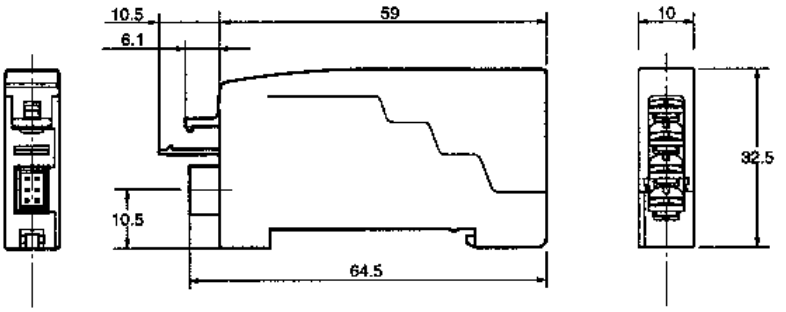




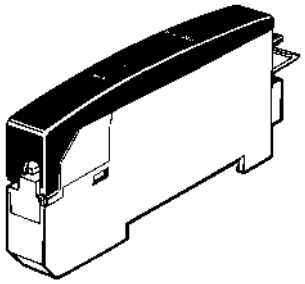
E39-JID01

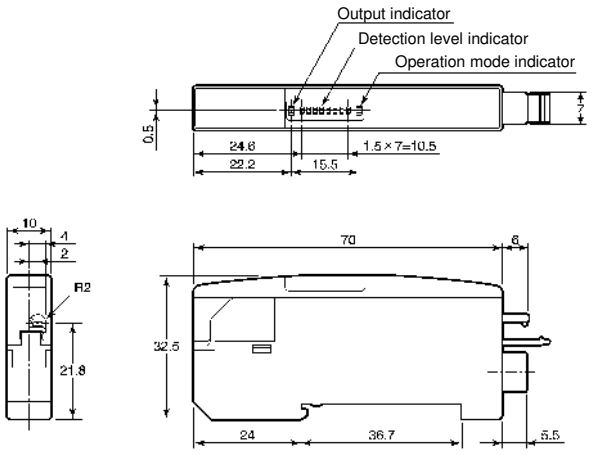




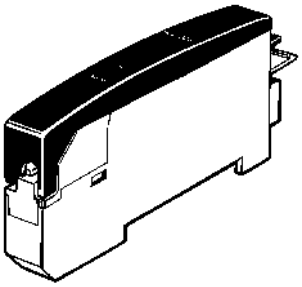


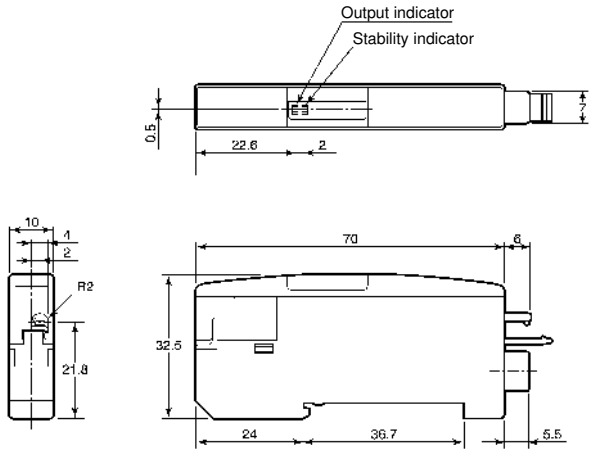
E2CY-T16





E2C-T16

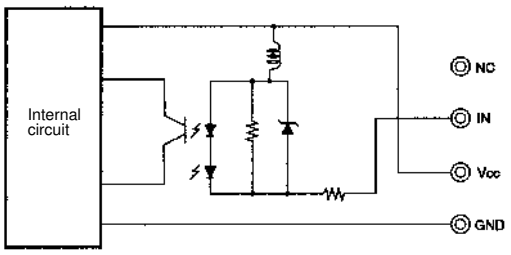




Installation

■ Internal Circuit Configuration

E39-JID01



Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Terminal.

General-purpose Sensors and the Equivalent CompoBus/S Sensors

CompoBus/S product	General-purpose product	Difference
E3X-NT16	E3X-NT11	External appearance only
E3X-NT26	E3X-NT21	
E3X-NM16	E3X-NM11	
E3X-NH16	E3X-NH11	
E3X-DA16	E3X-DA11	
E2CY-T16	E2CY-T11	
E2C-T16	E2C-T11	

General Safety Precautions

Connection Units

Use only the Connection Units listed in this data sheet for the Sensor Amplifier Units.

E39-JID01 Terminal Block Unit

Do not apply any voltage to the Terminal Block Unit.

Correct Use

Expanding Sensor Amplifier Terminals

1. Remove the cover from the side of the SRT1-T□D04S. (See Figure 1.)
2. When the cover is removed, you can see the expansion connector inside.
3. Connect this expansion connector to the connector located on the side of the SRT1-X□D04S. (See Figure 2.)

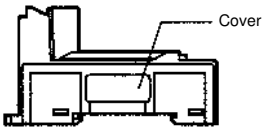


Figure 1

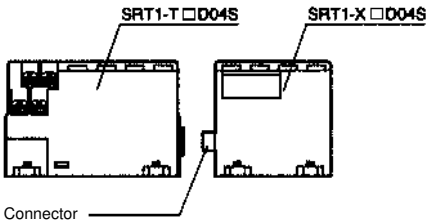


Figure 2

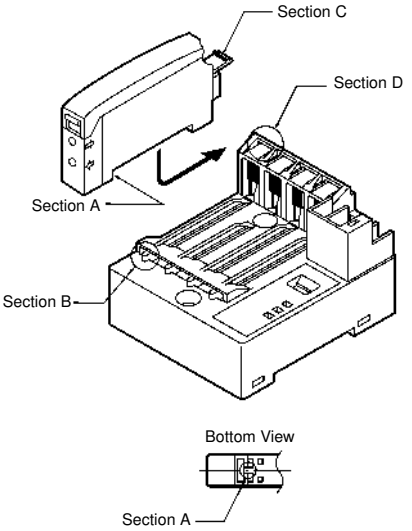
Attaching and Removing Connection Units

Sensor Amplifier Terminal	Connection Unit
SRT1-TID04S SRT1-XID04S	E3X-DA16 E3X-NT□6 E39-JID01 E3X-NH□6 E2CY-T16 E2C-T16

(SRT1-TID04S, SRT1-XID04S, E3X-NT□6, E39-JID01)

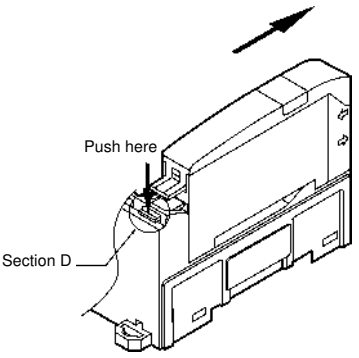
Attaching Connection Units

1. Hook Section A of the Connection Unit onto Section B of the Sensor Amplifier Terminal.
2. Push in the Connection Unit until Section C locks inside Section D of the Sensor Amplifier Terminal.



Removing Connection Units

1. While pushing Section D, pull the Connection Unit in direction E.
2. When Section D releases from the lock, the Connection Unit can be removed.

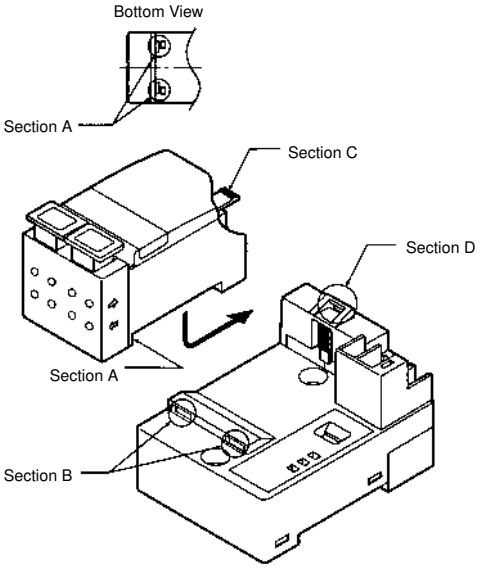


Attaching or Removing Connection Unit

Sensor Amplifier Terminal	Connection Unit
SRT1-TKD04S SRT1-XKD04S	E3X-NM16

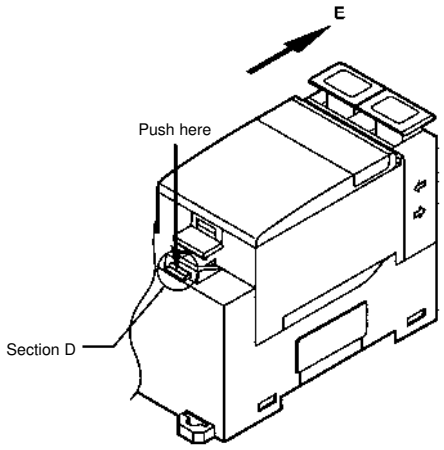
Attaching Connection Unit

1. Hook Section A of the Connection Unit onto Section B of the Sensor Amplifier Terminal.
2. Push in the Connection Unit until Section C locks inside Section D of the Sensor Amplifier Terminal.



Removing Connection Unit

1. While pushing Section D, pull the Connection Unit in direction E.
2. When Section D releases from the lock, the Connection Unit can be removed.



Channel Numbers

Channel numbers 1 to 4 of the E3X-NM16 correspond to contact numbers 0 to 3 of the SRT1-TKD04S, and to contact numbers 4 to 7 of the SRT1-XKD04S.

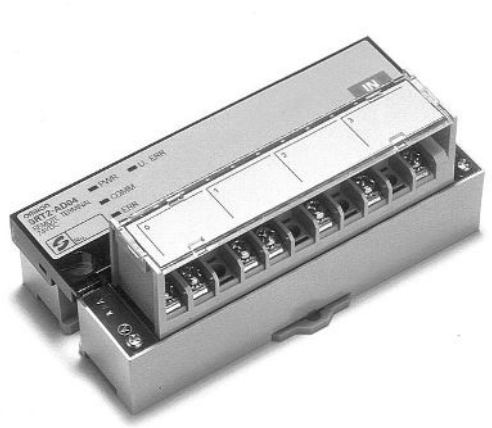
OMRON

Analog Input Terminal

SRT2-AD04

Compact Analog Input Model is the Same Shape as 16-point Remote I/O Terminals

- Allows flexible input point settings up to a maximum of four points.
- Resolution: 1/6,000
- Takes only 1 ms to exchange each input point.
- Wide input ranges available.
- 105 x 48 x 50 (W x H x D)



Ordering Information

Classification	I/O points	Model
Analog Input Terminal	1 to 4 (selectable with DIP switch)	SRT2-AD04

Note: For details about connecting the SRT2-AD04 to the Master Unit. Refer to page 25.

Specifications

■ Ratings

Input

Item		Voltage input	Current input
Max. signal input		±15 V	±30 mA
Input impedance		1 MΩ max.	Approx. 250 Ω
Resolution		1/6,000 (FS)	
Total accuracy	**25°C**	±0.3% FS	±0.4% FS
	–10 to 55°C	±0.6% FS	±0.8% FS
Conversion time		4 ms/4 points, 3 ms/3 points, 2 ms/2 points, and 1 ms/1 point	
Dielectric strength		500 VAC for 1 min between communications power supply, analog input, and communications terminals (see note)	

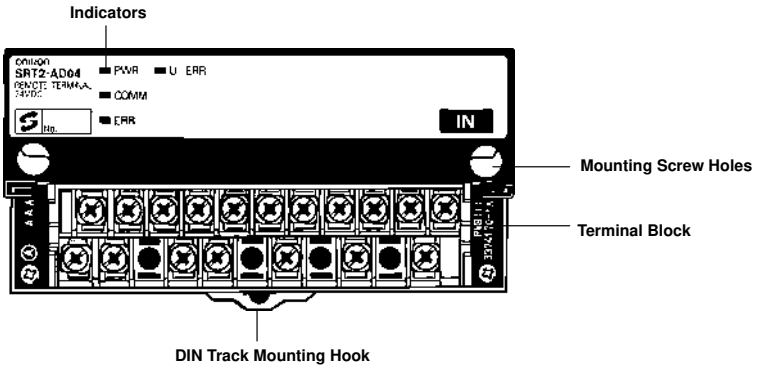
Note: There is no insulation between analog inputs.

■ Characteristics

Communications power supply voltage	14 to 26.4 VDC (possible to provide through Special Flat Cable)
Current consumption	100 mA max.
Connection method	Multi-drop method and T-branch method
Dielectric strength	500 VAC (between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2
Shock resistance	200 m/s^2
Mounting strength	No damage with 100 N pull load applied in all directions.
Terminal strength	No damage with 100 N pull load applied
Screw tightening torque	0.3 to 0.5 N • m
Ambient temperature	Operating: –10°C to 55°C Storage: –25°C to 65°C
Ambient humidity	Operating: 25% to 85% (with no condensation)
Weight	Approx. 120 g

Nomenclature

SRT2-AD04

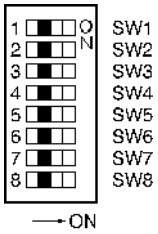


Indicators

Indicator	Name	Color	Display	Meaning
PWR	Power supply	Green	Lit	The communications power supply is ON.
			Not lit	The communications power supply is OFF.
COMM	Communication	Yellow	Lit	Normal communications
			Not lit	A communications error has occurred or the Unit is in standby status.
ERR	Communication error	Red	Lit	A communications error has occurred.
			Not lit	Normal communications or the Unit is in standby status.
U.ERR	Unit error	Red	Lit	An error has occurred in the Unit.
			Not lit	Normal communications or the Unit is in standby status.

DIP Switch (SW101)

(Open cover to access.)



Pin 1	Pin 2	Input points
OFF	OFF	4 points (default setting)
OFF	ON	3 points (inputs 0 to 2 enabled)
ON	OFF	2 points (inputs 0 and 2 enabled)
ON	ON	1 point (input 0 enabled)

Pin 3	Communications mode
OFF	High-speed communications (default setting)
ON	Long-distance communications

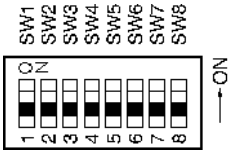
Pin 4	Be sure to turn OFF.

Pin No.	Node address
Pin 5	2^3
Pin 6	2^2
Pin 7	2^1
Pin 8	2^0

The default setting is for all of these pins to be OFF.

DIP Switch (SW102)

(Open cover to access.)



Pin 1	Pin 2	Pin 3	Range for inputs 0, 1
Pin 4	**Pin 5**	**Pin 6**	**Range for inputs 2, 3**
OFF	OFF	OFF	0 to 5 (V) (default setting)
ON	OFF	OFF	1 to 5 (V)
OFF	ON	OFF	0 to 10 (V)
ON	ON	OFF	–10 to 10 (V)
OFF	OFF	ON	4 to 20 (mA)
ON	OFF	ON	0 to 20 (mA)
Do not make any settings other than the ones listed above.			

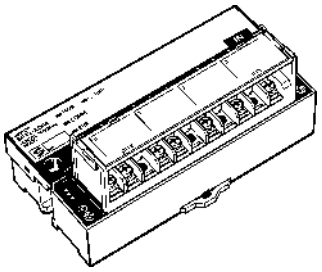
Pin 7	Mean value processing
OFF	Without mean value processing (default setting)
ON	With mean value processing (mean for 8 operations)

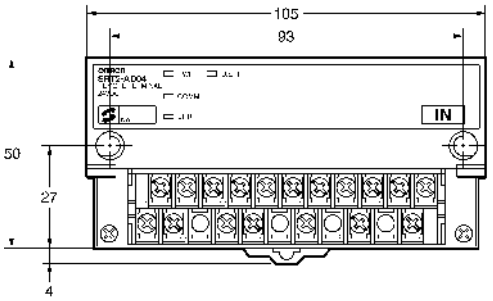
Pin 8	Be sure to turn OFF.

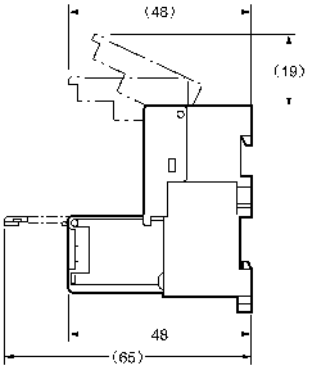
Dimensions

Note: All units are in millimeters unless otherwise indicated.

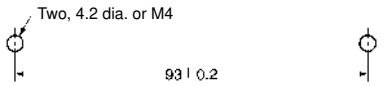
SRT2-AD04







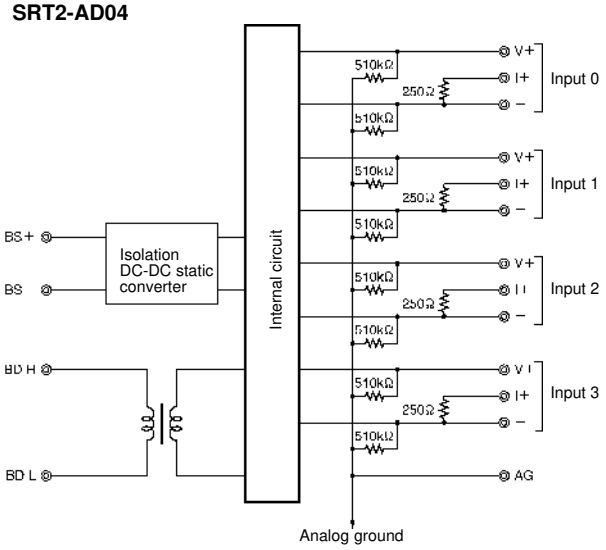
Mounting Holes



Installation

■ Internal Circuit Configuration

SRT2-AD04



■ Terminal Arrangement

SRT2-AD04

BD H	BS +	AG	V0 +	I0 +	V1 +	I1 +	V2 +	I2 +	V3 +	I3 +
BD L	BS −	NC	AG	0−	NC	1−	NC	2−	NC	3−

Note: When the input is current input, short-circuit the “V+” terminals and the “I+” terminals. When short-circuiting, use the short-circuiting tool provided as an accessory.

Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

OMRON

Analog Output Terminal

SRT2-DA02

Compact Analog Output Model is the Same Shape as 16-point Remote I/O Terminals

- Two output points or 1 output point is selectable.
- Resolution: 1/6,000
- 105 x 48 x 50 (W x H x D)

Ordering Information

Classification	I/O points	Model
Analog Output Terminal	1 or 2 (selectable with DIP switch)	SRT2-DA02

Note: For details about connecting the SRT2-DA02 to the Master Unit, refer to page 25.

Specifications

■ Ratings

Output

Item		Voltage output	Current output
External output permissible load resistance		5 kΩ min.	600 Ω max.
Output impedance		0.5 Ω max.	---
Resolution		1/6,000 (FS)	
Total accuracy	**25°C**	±0.4% FS	
	–10 to 55°C	±0.8% FS	
Conversion time		2 ms/2 points and 2 ms/1 point	
Dielectric strength		500 VAC for 1 min between communications power supply, analog output, and communications terminals (see note)	

Note: There is no insulation between analog outputs.

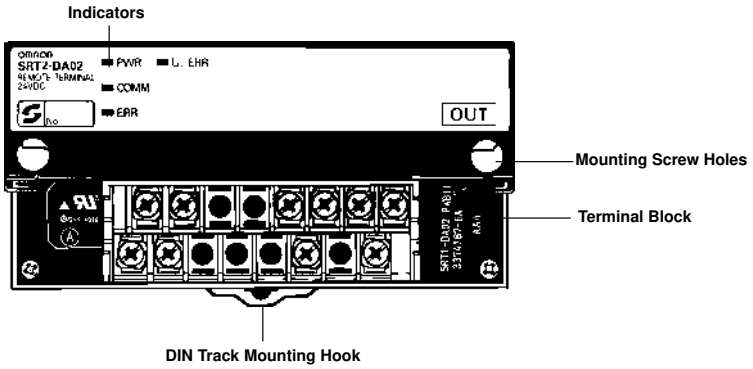
■ Characteristics

Communications power supply voltage	14 to 26.4 VDC (power supply possible from Special Flat Cable)
Current consumption (see note)	170 mA max.
Connection method	Multi-drop method and T-branch method
Dielectric strength	500 VAC (between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2
Shock resistance	200 m/s^2
Mounting strength	No damage when 100 N pull load was applied in all directions
Terminal strength	No damage when 100 N pull load was applied
Screw tightening torque	0.3 to 0.5 N • m
Ambient temperature	Operating: –10°C to 55°C Storage: –25°C to 65°C
Ambient humidity	Operating: 25% to 85% (with no condensation)
Weight	Approx. 100 g

Note: The above current consumption is the value with all points turned ON excluding the current consumption of the external load.

Nomenclature

SRT2-DA02

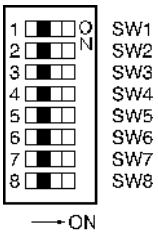


Indicators

Indicator	Name	Color	Display	Meaning
PWR	Power supply	Green	Lit	The communications power supply is ON.
			Not lit	The communications power supply is OFF.
COMM	Communication	Yellow	Lit	Normal communications
			Not lit	A communications error has occurred or the Unit is in standby status.
ERR	Communication error	Red	Lit	A communications error has occurred.
			Not lit	Normal communications or the Unit is in standby status.
U.ERR	Unit error	Red	Lit	An error has occurred in the Unit.
			Not lit	A communications error has occurred or the Unit is in standby status.

DIP Switch (SW101)

(Open cover to access.)



Pin 1	Be sure to turn OFF.

Pin 2	Output points
OFF	2 points (default setting)
ON	1 point (output 0 enabled)

Pin 3	Communications mode
OFF	High-speed communications (default setting)
ON	Long-distance communications

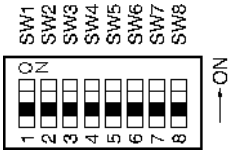
Pin 4	Be sure to turn OFF.

Pin No.	Node addresses
Pin 5	2^3
Pin 6	2^2
Pin 7	2^1
Pin 8	2^0

The default setting is for all of these switches to be OFF.

DIP Switch (SW102)

(Open cover to access.)



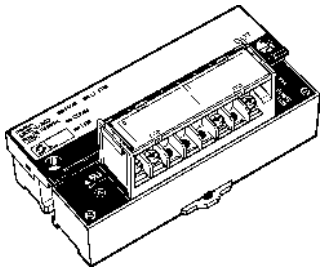
Pin 1	Pin 2	Pin 3	Range for output 0
Pin 4	**Pin 5**	**Pin 6**	**Range for output 1**
OFF	OFF	OFF	0 to 5 (V) (default setting)
ON	OFF	OFF	1 to 5 (V)
OFF	ON	OFF	0 to 10 (V)
ON	ON	OFF	–10 to 10 (V)
OFF	OFF	ON	4 to 20 (mA)
Do not make any settings other than the ones listed above.			

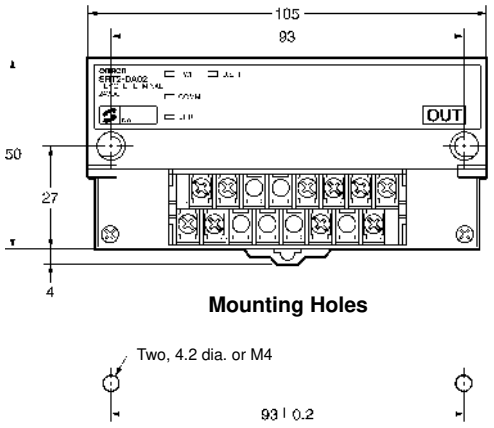
Pin 7	Pin 8	Output during communications error
OFF	OFF	Clear at the output lower limit when communications error occurs. (default setting)
OFF	ON	Clear at the output upper limit when communications error occurs.
ON	OFF	Clear at the output lower limit when communications error occurs (however, if the range is –10 to 10 V, the output will be 0).
ON	ON	Output held when communications error occurs.

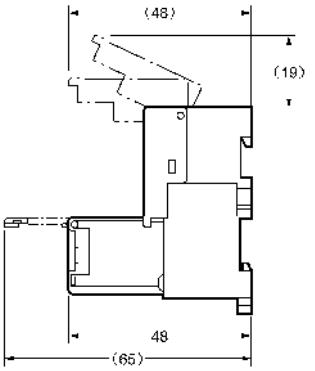
Dimensions

Note: All units are in millimeters unless otherwise indicated.

SRT2-DA02



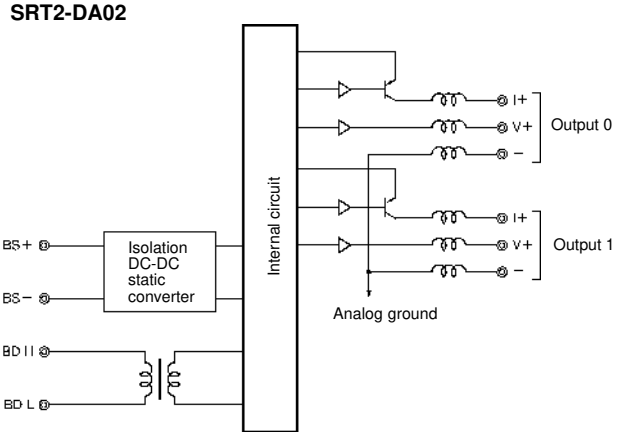




Installation

■ Internal Circuit Configuration

SRT2-DA02



■ Terminal Arrangement

SRT2-DA02

H	BS +	NC	NC	V0 +	I0 +	V1 +	I1 +
BD L	BS −	NC	NC	NC	0−	NC	1−

Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

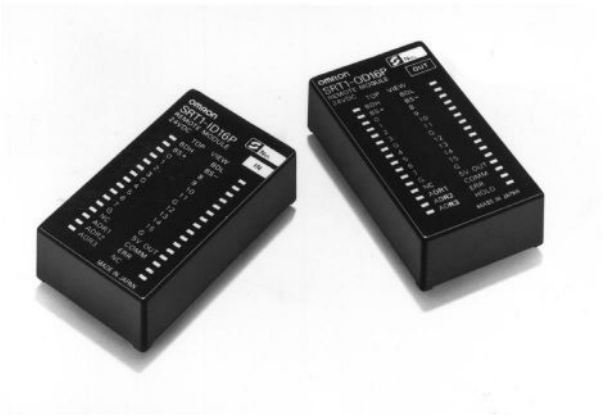
OMRON

Remote I/O Modules

SRT2-ID16P/OD16P

Module Type that Allows PCB Mounting

- Compact size at 60 x 16 x 35 (W x H x D)
- Lineup now includes the 16-point input model and 16-point output model.



Ordering Information

I/O classification	Internal I/O circuit common	I/O points	Rated voltage	I/O rated voltage	Model
Input	NPN (+ common)	16	24 VDC	24 VDC	SRT2-ID16P
Output	NPN (– common)				SRT2-OD16P

Specifications

■ Ratings

Input (SRT2-ID16P)

Input current	2 mA max./point
ON delay time	1.5 ms max.
OFF delay time	1.5 ms max.
ON voltage	15 VDC min. between each input terminal and BS+ terminal
OFF voltage	5 VDC max. between each input terminal and BS + terminal

Output (SRT2-OD16P)

Rated output current	0.2 A/point, 0.6 A/common
Residual voltage	0.6 V max. between each output terminal and G terminal at 0.2 A
Leakage current	0.1 mA max. between each output terminal and G terminal at 24 VDC

■ Characteristics

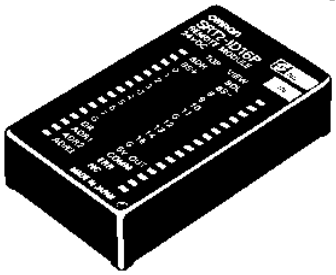
Communications power supply voltage	20.4 to 26.4 VDC
I/O power supply voltage	24 VDC $^{+10\%}_{-15\%}$
Current consumption (see note)	60 mA max.
Connection method	Multi-drop method and T-branch method
Connecting Units	8 Input Terminals and 8 Output Terminals per Master
Dielectric strength	500 VAC for 1 min (1-mA sensing current between insulated circuits)
5-V output current	20 mA max. (5 V ± 0.5 V)
LED drive current (COMM, ERR)	10 mA max. (5 VDC)
SW carry current (ADR0 to 3, HOLD)	1 mA max.
Ambient temperature	Operating: 0°C to 55°C (with no icing or condensation) Storage: –20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating: 35% to 85%
Weight	35 g max.

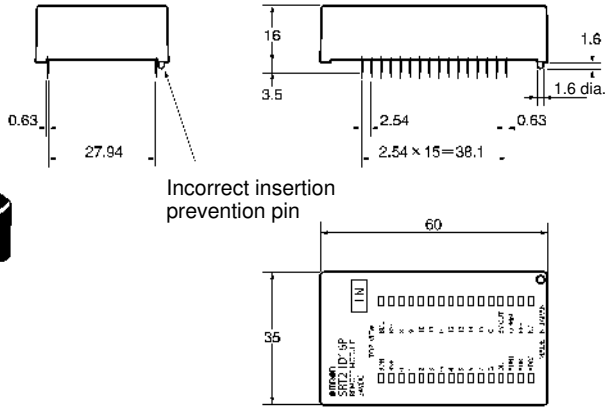
Note: The above current consumption is the value with all points turned ON excluding the current consumption of the external sensor connected to the input model and the current consumption of the load connected to the output model.

Dimensions

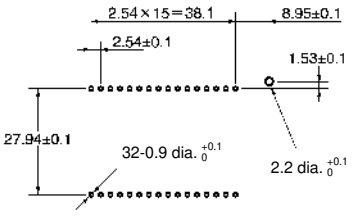
Note: All units are in millimeters unless otherwise indicated.

SRT2-ID16P
SRT2-OD16P





PCB dimensions (top view)

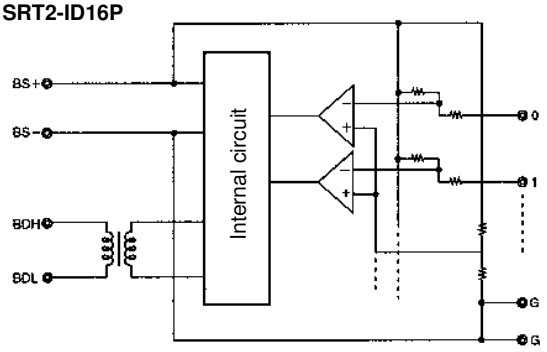


No cumulative tolerance allowed

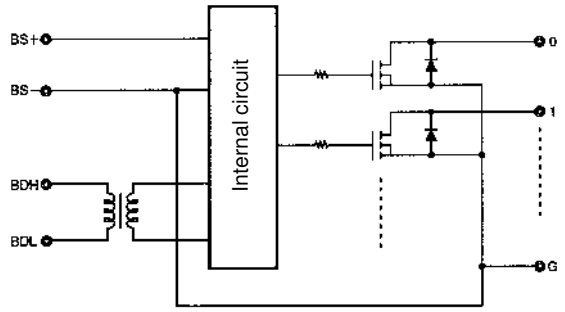
Installation

■ Internal Circuit Configuration

SRT2-ID16P

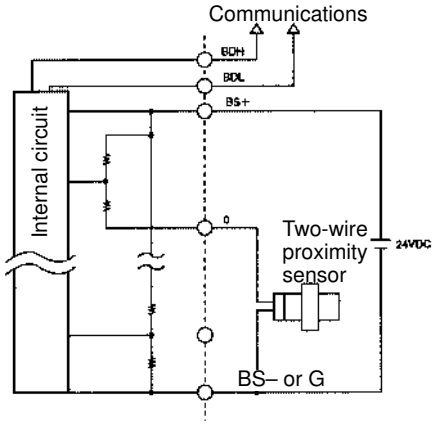


SRT2-OD16P

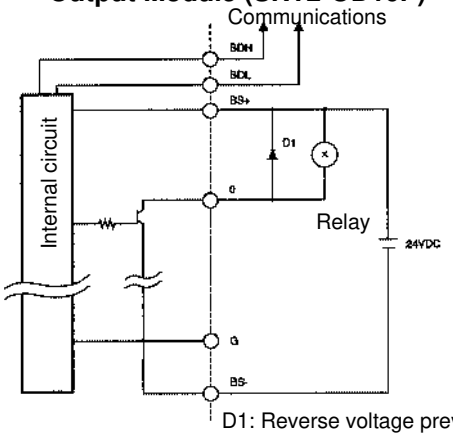


■ External Connections

Input Module (SRT2-ID16P)

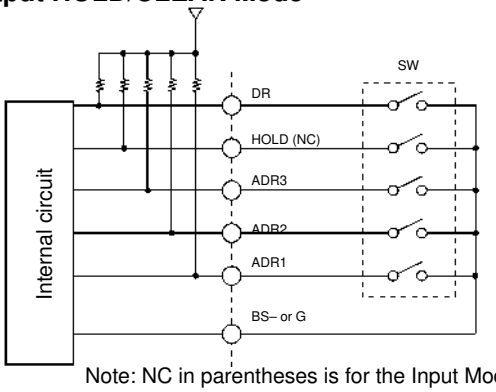


Output Module (SRT2-OD16P)



D1: Reverse voltage prevention diode

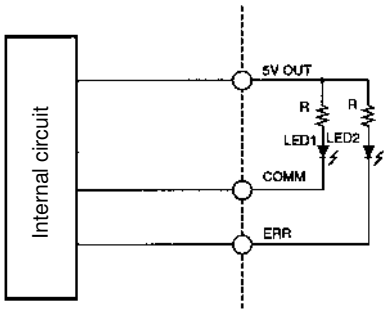
Node Number Settings and Output HOLD/CLEAR Mode



Note: NC in parentheses is for the Input Modules.

Note: Refer to the *CompoBus/S Operation Manual (W266-E1)* for details on the switch.

Indicators



R: LED current limiting resistor
LED1: LED for COMM
LED2: LED for ERR
The maximum current for LED1 and 2 is 10 mA.

The 5-V Output Terminals have positive power supplies (maximum output current of 20 mA) for the ERR and COMM LEDs. Recommended LED colors are red for ERR and yellow for COMM.

Precautions

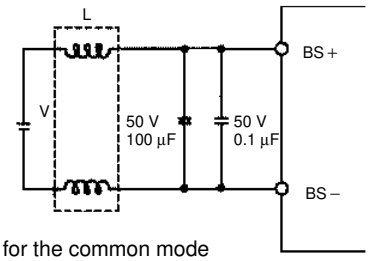
Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

Correct Use

Noise Protection Circuit

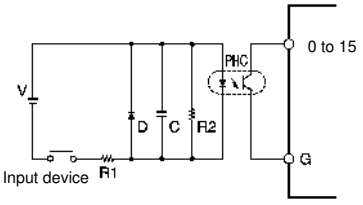
Add the following protection circuit if noise is generated from the power supply, input section, or output section.

Power Supply Noise Protection Circuit



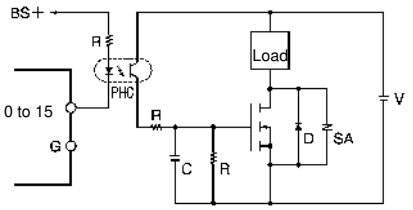
L: Coil for the common mode
Install the coil near the SRT1.
V: 24-VDC power supply

Input Section Noise Protection Circuit



R_1: Resistor for limiting photocoupler's input current
D: Diode for protecting the photocoupler
C: Condenser for absorbing noise
R_2: Resistor for limiting the operating level
PHC: Photocoupler
V: DC power supply

Output Section Noise Protection Circuit

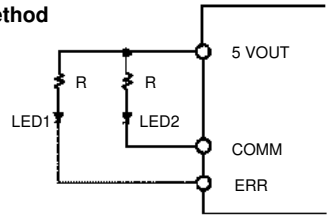


C: Capacitance of 0.1 μF min.
R: Limiting resistor
SA: Varistor
D: Diode for protecting against counterelectromotive force
PHC: Photocoupler
V: DC power supply

5-V Output Terminals

The 5-V Output Terminals have positive power supplies (maximum output current of 20 mA) for the ERR and COMM LED. Use them as shown below. Recommended LED colors are red for ERR and yellow for COMM.

Wiring Method



R: LED current limiting resistor
LED1: LED for COMM
LED2: LED for ERR
The maximum current for the LED1 and 2 is 10 mA.

Cleaning the PCB

- Perform soldering using a soldering iron at a temperature between 280 and 300°C in less than 3 seconds, or at a temperature less than 280°C in less than 5 seconds.
- Do not clean the PCB flux either using highly acidic or alkaline detergents, or using ultrasonic cleaning.

NC Terminals

NC terminals are used internally. Do not make any connections to the NC terminals.

OMRON

Position Drivers

FND-X□-SRT

Advanced Servodrivers with Positioner Functions

DIO and CompoBus/S Models are Newly Added

- Servodriver and positioner are combined into one Unit.
- Conventional U-series, U-series UE type, H-series, and M-series AC Servomotors can be used.
- Feeder control/DTP control and single operation/ automatic incremental/continuous operation are available.
- Easy to set, operate, and adjust.

Ordering Information

Specifications			Model
CompoBus/S models	For 200-VAC input	6 A	FND-X06H-SRT
		12 A	FND-X12H-SRT
		25 A	FND-X25H-SRT
		50 A	FND-X50H-SRT
	For 100-VAC input	6 A	FND-X06L-SRT
		12 A	FND-X12L-SRT

Note: For details, refer to *OMNUC FND-X-series User's Manual (I524)*.

Specifications

■ General Specifications

Ambient temperature	Operating: 0°C to 55°C Storage: –10°C to 70°C
Ambient humidity	Operating: 35% to 90% (with no icing) Storage: 35% to 90% (with no icing)
Operating atmosphere	No corrosive gases
Dielectric strength	1,500 VAC_{RMS} for 1 min at 50/60 Hz
Insulation resistance	5 MΩ min. (at 500 VDC) between power input terminals and between the power terminal and the case
Vibration resistance	10 to 150 Hz in X, Y, and Z directions with 0.10-mm single amplitude; acceleration: 9.8 m/s^2 max.; time coefficient: 8 min; 4 sweeps
Shock resistance	98 m/s^2 max., three times each in X, Y, and Z directions
Degree of protection	Built into panel (IP00)

■ Performance Specifications

Item		DIO models (see note 1)	FND-X06L	FND-X12L	FND-X06H	FND-X12H	FND-X25H	FND-X50H
		CompoBus/S models (see note 1)	FND-X06L-SRT	FND-X12L-SRT	FND-X06H-SRT	FND-X12H-SRT	FND-X25H-SRT	FND-X50H-SRT
Continuous output current (0-P)			2.0 A	3.0 A	2.0 A	4.8 A	8.0 A	20 A
Momentary maximum output current (0-P)			6.0 A	12 A	6.0 A	12 A	25 A	50 A
Input power supply	Main circuit		Single-phase 100/115 VAC (85 to 127 V) 50/60 Hz (The same terminals are used for the main circuit and the control circuit.)		Single-phase 200/240 VAC (170 to 264 V) 50/60 Hz (The same terminals are used for the main circuit and the control circuit.)			3-phase 200/240 VAC (170 to 264 V) 50/60 Hz
	Control circuit							Single-phase 200/240 VAC (170 to 264 V) 50/60 Hz
Position/speed feedback	U Series (INC)		30 to 750 W: Optical incremental encoder, 2,048 pulses/revolution 1 to 2 kW: Optical incremental encoder, 4,096 pulses/revolution					
	U Series (ABS)		30 to 750 W: Optical absolute encoder, 1,024 pulses/revolution 1 to 2 kW: Optical absolute encoder, 8,192 pulses/revolution					
	U-UE Series		Optical incremental encoder, 1,024 pulses/revolution					
	H Series		Magnetic incremental encoder, 2,000 pulses/revolution					
	M Series		Resolver, absolute accuracy 0.18° max.; ambient temperature 25°C					
Applicable load inertia	U Series (INC)		Maximum of 30 times motor's rotor inertia		Maximum of 30 times motor's rotor inertia		Maximum of 20 times motor's rotor inertia (10 times for 1-kW motor)	Maximum of 10 times motor's rotor inertia
	U Series (ABS)		Maximum of 20 times motor's rotor inertia		Maximum of 20 times motor's rotor inertia		Maximum of 18 times motor's rotor inertia (10 times for 1-kW motor)	Maximum of 10 times motor's rotor inertia
	U-UE Series		Maximum of 30 times motor's rotor inertia		Maximum of 30 times motor's rotor inertia		Maximum of 20 times motor's rotor inertia	---
	H Series		Maximum of 10 times motor's rotor inertia					---
	M Series		Maximum of 10 times motor's rotor inertia					
Inverter method			PWM method based on IGBT					
PWM frequency			10 kHz					
Weight			Approx. 1.5 kg		Approx. 1.5 kg		Approx. 2.5 kg	Approx. 4.5 kg
Frequency response (speed control)			100 Hz (at a load inertia equivalent to motor's rotor inertia)					
Position loop gain			1 to 200 (rad/s)					
Feed forward			0% to 200% of speed reference					
Pulse rate			1/32,767 ≤ (pulse rate 1 / pulse rate 2) ≤ 32,767/1					
Positioning completion width			1 to 32,767 (pulses)					
Acceleration/Deceleration time			0 to 9,999 (ms); acceleration and deceleration times set separately. Two types can be set for each. S-curve acceleration/deceleration function available (filter time constant: 0.00 to 32.76 s).					
Sequence input			19 pts. (limit inputs, origin proximity, RUN command, START, alarm reset, origin search, JOG operation, teaching, point selection, position data, deceleration stop) Photocoupler input: 24 VDC, 8 mA External power supply: 24 VDC ±1 V, 150 mA min.					
Sequence output			15 pts. (brake output, READY, origin search completion, origin, teaching, motor running, positioning completion, alarm, point output, position selection, speed selection) Open collector output: 24 VDC, 40 mA					
Monitor output (See note 2.)	Speed monitor		3 V/motor's rated speed (output accuracy: approx. ±10%)					
	Current monitor		3 V/motor's maximum current (output accuracy: approx. ±10%)					
Regenerative absorption capacity			13 W + 17 J	17 W + 17 J	13 W + 17 J	24 W + 17 J	37 W + 22 J	160 W + 38 J
Protective functions			Overcurrent, overvoltage, voltage drop, resolver disconnection, power status error, clock stopped, overcurrent (soft), speed amp saturation, motor overload, temporary overload, resolver error, speed over, error counter over, parameter setting error, software limit over, coordinate counter over, overrun, encoder disconnection, encoder communications error, absolute encoder backup error, absolute encoder checksum error, absolute encoder absolute error, absolute encoder over speed, encoder data not transmitted, BCD data error, present value undetermined, PTP data not set					

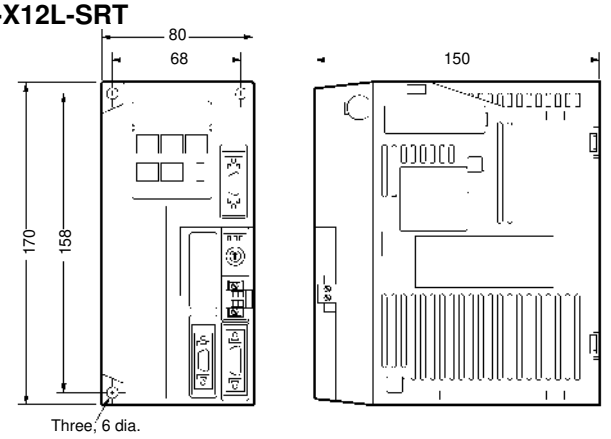
Note: 1. When using the 100-VAC-input Position Drivers in combination with the U-series or U-series UE type models, use 200-VAC Servomotors (-HA, -TA, -VA, -XA, -H, or -V models).

2. For the monitor output, the monitor items and voltage polarity can be set by parameter UP-25 (monitor output selection).

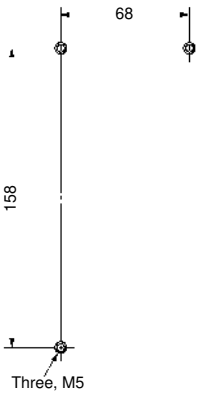
Dimensions

Note: All units are in millimeters unless otherwise indicated.

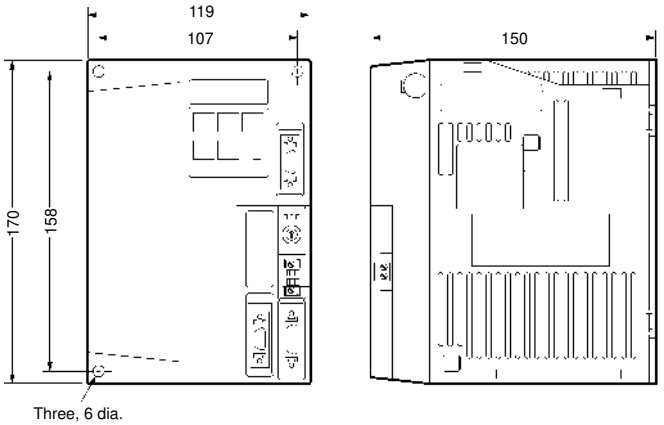
200-VAC FND-X06H-SRT/-X12H-SRT
100-VAC FND-X06L-SRT/-X12L-SRT



Mounting Holes

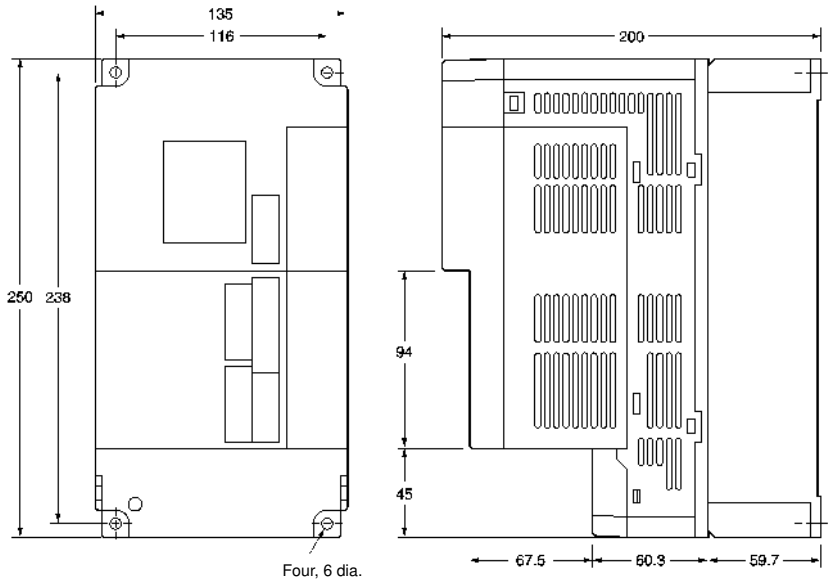


200-VAC FND-X25H-SRT

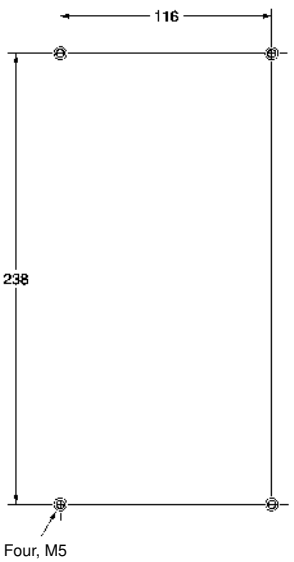


Mounting Holes

200-VAC FND-X50H-SRT

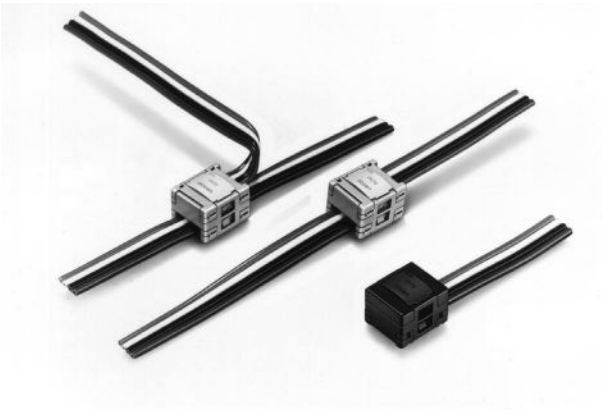


Mounting Holes



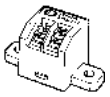
Peripheral Devices

Special Flat Cable Allows Communication Path Extension and T-branching with Ease

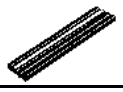


Ordering Information

VCTF Cable Products

Product	Appearance	Model	Specification
Terminal-block Terminator		SRS1-T	Resistance: 100 Ω
T-branch Connector		XS2R-D427-5	Used to branch communications lines and power lines. (Waterproof specifications)
Connector Terminator (plug)		SRS2-1	Waterproof terminating resistance

Special Flat Cable Products

Product	Appearance	Model	Specification
Branch Connector		SCN1-TH4	Used with Special Flat Cable.
Extension Connector		SCN1-TH4E	Used with Special Flat Cable.
Connector Terminator		SCN1-TH4T	Used with Special Flat Cable.
Special Flat Cable		SCA1-4F10	100 m

Note: Branch Connectors and Extension Connectors are sold in blocks of 10 Units.

Four-core VCTF Cable Products

Product	Appearance	Model	Specification
Assembling Connector		XS2C-D4S7	Communications connector plug for 4-conductor VCTF cable
		XS2G-D4S7	Communications connector socket for 4-conductor VCTF cable

Specifications

■ Ratings/Characteristics

Rated current	4 A
Contact resistance	20 mΩ max.
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Withstand voltage	1,000 VAC for 1 min, leakage current: 1 mA max.
Cable pulling strength	50 N (5.1 kgf) min.
Operating temperature	–20°C to 70°C

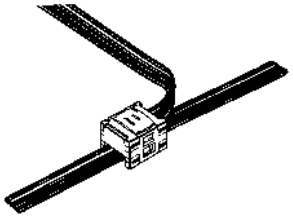
■ Materials

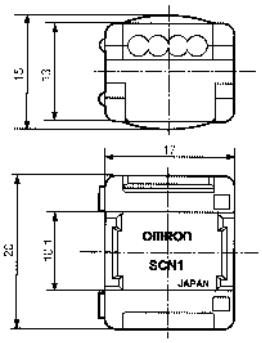
Housing	PA66 resin (UL94V-2) Branching and extension: Gray Terminator: Black
Cover	
Contact	Phosphor bronze and nickel base, tin plated

Dimensions

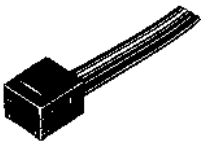
Note: All units are in millimeters unless otherwise indicated.

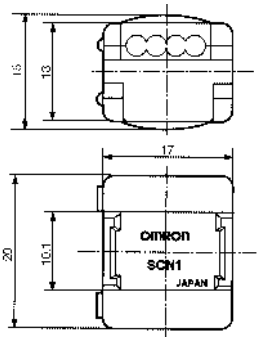
SCN1-TH4 Branch Connector
SCN1-TH4E Extension Connector



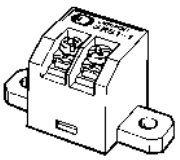


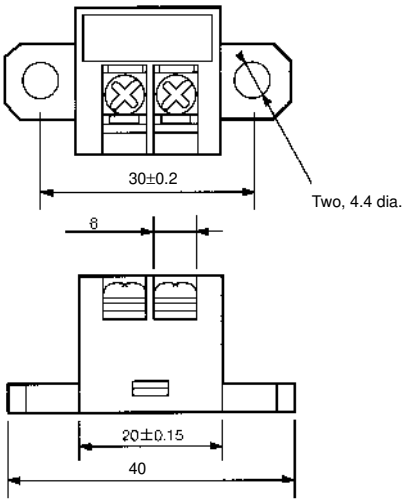
SCN1-TH4T Connector Terminator



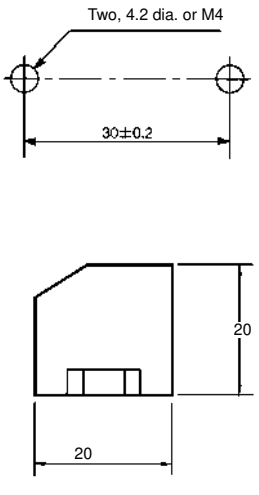


SRS1-T Terminal-block Terminator





Mounting Holes



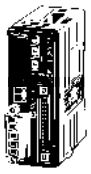
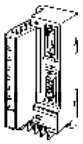
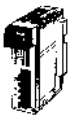
Precautions

Refer to the *CompoBus/S Operation Manual (W266-E1)* before using the Unit.

Ordering Information

Note: Abbreviations for standards: U: UL, C: CSA, CE: EC Directive

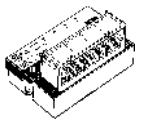
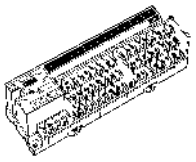
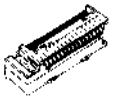
Master

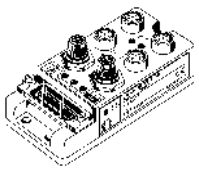
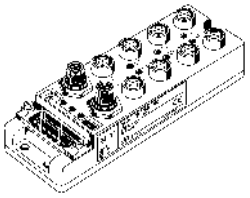
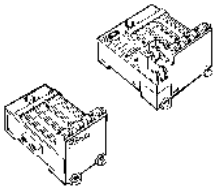
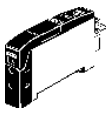
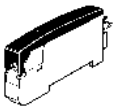
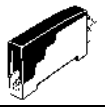
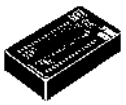
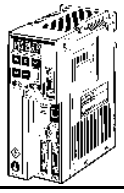
Product	Appearance	Model	Specifications	Standards
CPM2C CPU Units with CompoBus/S Master		CPM2C-S100C	Incorporates CPM2C CPU Unit and controller functions 6 inputs and 4 outputs (sinking)	U C CE (see note)
		CPM2C-S110C	Incorporates CPM2C CPU Unit and controller functions 6 inputs and 4 outputs (sourcing)	
Programmable Slaves		CPM2C-S100C-DRT	Incorporates CPM2C CPU Unit and controller functions 6 inputs and 4 outputs (sinking)	U C CE (see note)
		CPM2C-S110C-DRT	Incorporates CPM2C CPU Unit and controller functions 6 inputs and 4 outputs (sourcing)	
Master Control Units		SRM1-C01-V2	Stand-alone model with built-in controller functions No RS-232C port, 256 I/O points (128 inputs and 128 outputs)	U C CE (see note)
		SRM1-C02-V2	Stand-alone model with built-in controller functions No RS-232C port, 256 I/O points (128 inputs and 128 outputs)	
Master Units		C200HW-SRM21-V1	For CS1, C200HX/HG/HE (-ZE), and C200HS 128 inputs and 128 outputs (256 points in total)	U C CE (see note)
		CQM1-SRM21-V1	For CQM1 and CQM1H 64 inputs and 64 outputs (128 points in total)	
SYSMAC Boards with CompoBus/S Master		C200PC-ISA03-SRM	For C200HG-CPU43 128 inputs and 128 outputs (256 points in total)	CE (see note)
		C200PC-ISA13-SRM	For C200HX-CPU64 128 inputs and 128 outputs (256 points in total)	

Note: Long-distance communications mode is not supported.

Slave

Product	Appearance	Model	Specifications	Standards
I/O Link Units		CPM2C-SRT21	For CPM2C 8 inputs and 8 outputs	CE (see note)
		CPM1A-SRT21	For CPM1A/CPM2A 8 inputs and 8 outputs	U C CE (see note)

Product	Appearance	Model	Specifications	Standards
Transistor Remote I/O Terminals		SRT2-ID04 SRT2-ID04-1 SRT2-OD04 SRT2-OD04-1	4 NPN inputs (+ common) 4 PNP inputs (– common) 4 NPN outputs (– common) 4 PNP outputs (+ common)	U C CE (see note)
		SRT2-ID08 SRT2-ID08-1 SRT2-OD08 SRT2-OD08-1	8 NPN inputs (+ common) 8 PNP inputs (– common) 8 NPN outputs (– common) 8 PNP outputs (+ common)	
		SRT2-ID16 SRT2-ID16-1 SRT2-OD16 SRT2-OD16-1	16 NPN inputs (+ common) 16 PNP inputs (– common) 16 NPN outputs (– common) 16 PNP outputs (+ common)	
Transistor Remote I/O Terminals with 3-tier Terminal Block		SRT2-ID16T SRT2-ID16T-1 SRT2-MD16T SRT2-MD16T-1 SRT2-OD16T SRT2-OD16T-1	16 NPN inputs (+ common) 16 PNP inputs (– common) 16 NPN I/O points (inputs: + common; outputs: – common) 16 PNP I/O points (inputs: – common; outputs: + common) 16 NPN outputs (– common) 16 PNP outputs (+ common)	U C CE (see note)
Relay-mounted Remote I/O Terminals		SRT2-ROC08	8 relay outputs	U C CE (see note)
		SRT2-ROC16	16 relay outputs	
		SRT2-ROF08	8 power MOS FET relay outputs	
		SRT2-ROF16	16 power MOS FET relay outputs	
Transistor Remote I/O Terminals with Connectors		SRT2-ID32ML SRT2-ID32ML-1	32 NPN transistor inputs (+ common) 32 PNP transistor inputs (– common)	CE (see note)
		SRT2-OD32ML SRT2-OD32ML-1 SRT2-MD32ML SRT2-MD32ML-1	32 NPN transistor outputs (– common) 32 PNP transistor outputs (+ common) 32 NPN transistor I/O points (inputs: + common; outputs: – common) 32 PNP transistor I/O points (inputs: – common; outputs: + common)	
		SRT2-VID08S SRT2-VID08S-1 SRT2-VOD08S SRT2-VOD08S-1	8 NPN transistor inputs (+ common) 8 PNP transistor inputs (– common) 8 NPN transistor outputs (– common) 8 PNP transistor outputs (+ common)	U C CE (see note)
		SRT2-VID16ML SRT2-VID16ML-1 SRT2-VOD16ML SRT2-VOD16ML-1	16 NPN transistor inputs (+ common) 16 PNP transistor inputs (– common) 16 NPN transistor outputs (– common) 16 PNP transistor outputs (+ common)	
	---	SRT2-ATT01 SRT2-ATT02	Mounting hook A Mounting hook B	

Product		Appearance	Model	Specifications	Standards
Waterproof Transistor Terminals			SRT2-ID04CL SRT2-ID04CL-1 SRT2-OD04CL SRT2-OD04CL-1	4 NPN transistor inputs (+ common) 4 PNP transistor inputs (– common) 4 NPN transistor outputs (– common) 4 PNP transistor outputs (+ common)	CE (see note)
			SRT2-ID08CL SRT2-ID08CL-1 SRT2-OD08CL SRT2-OD08CL-1	8 NPN transistor inputs (+ common) 8 PNP transistor inputs (– common) 8 NPN transistor outputs (– common) 8 PNP transistor outputs (+ common)	
Sensor Terminals			SRT2-ID08S SRT2-ND08S SRT2-OD08S	Sensor Terminals 8 inputs (NPN) 4 automatic teaching points (NPN) 8 outputs	---
CompoBus/S Sensor Amplifier Terminals			SRT1-TID04S SRT1-TKD04S	4 communications points 4 communications points (to connect to the E3X-NM16)	---
			SRT1-XID04S SRT1-XKD04S	4 expansion points 4 expansion points (to connect to the EX-NM16)	
Connection Units (see note)	Photoelectric Sensors		E3X-NT16 E3X-NT26 E3X-NH16 E3X-DA16	1-channel general-purpose teaching 1-channel multi-functional, general-purpose teaching 1-channel long-distance, high-precision bar-display teaching 1-channel digital model	U C CE (see note)
			E3X-NM16	4-channel multi-functional, general-purpose teaching	
	Proximity Sensors		E2CY-T16 E2C-T16	Aluminum detection Compact model with teaching function	U C
	Terminal Block Unit		E39-JID01	One input point	---
Analog Input Terminal			SRT2-AD04	1 to 4 inputs (set with DIP switch)	U C CE (see note)
Analog Output Terminal			SRT2-DA02	1 or 2 outputs (set with DIP switch)	
Remote I/O Modules			SRT2-ID16P SRT2-OD16P	16 NPN inputs (+ common) 16 NPN outputs (– common)	---
Position Drivers (for CompoBus/S)			FND-X06H-SRT FND-X12H-SRT FND-X25H-SRT FND-X50H-SRT FND-X06L-SRT FND-X12L-SRT	6 A at 200-VAC input 12 A at 200-VAC input 25 A at 200-VAC input 50 A at 200-VAC input 6 A at 100-VAC input 12 A at 100-VAC input	U CE (see note) cUL

Note: The Position Driver cannot be used in long-distance communications mode.

Peripheral Devices

VCTF Cable Products

Product	Appearance	Model	Specifications	Standards
Terminal-block Terminator		SRS1-T	100 Ω	---
T-branch Connector		XS2R-D427-5	Waterproof	
Connector Terminator (plug)		SRS2-1	Waterproof terminator	

Special Flat Cable Products

Product	Appearance	Model	Specifications	Standards
Branch Connector		SCN1-TH4	Connector for Special Flat Cable	---
Extension Connector		SCN1-TH4E		
Connector Terminator		SCN1-TH4T		
Special Flat Cable		SCA1-4F10	100 m	

Four-conductor VCTF Cable Products

Product	Appearance	Model	Specifications	Standards
Assembling Connector		XS2C-D4S7	Connector plug for 4-conductor VCTF cable communications	---
		XS2G-D4S7	Connector socket for 4-conductor VCTF cable communications	

Note: Information on EC Directives

Individual OMRON products that comply with EC Directives conform to the common emission standards of EMC Directives. However, the emission characteristics of these products installed on customers' equipment may vary depending on the configuration, wiring, layout, and other conditions of the control panel used. For this reason, customers are requested to check whether the emission characteristics of the entire machine or equipment comply with the EMC Directives.