

OMRON

# A Large Revolution in a Small Body

CompoBus/S Series

**SRM1** S-Controller



# CompoBus/S Master and Machine Functionality All in a Body This S

The SRM1 is the Master Unit for OMRON's CompoBus/S Series.

It controls up to 256 I/O points while also performing machine control as a programmable controller.

A revolutionary small body reduces space requirements in control panels while distributing I/O and reducing wiring.

## SRM1 Version 2

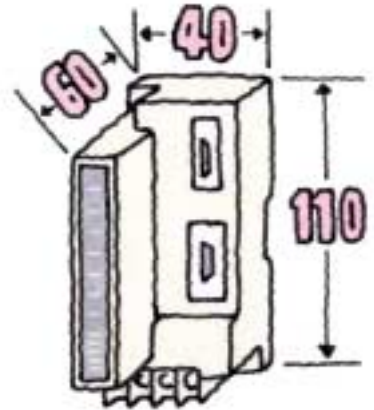
- The SRM1 can now handle analog signals, with 4-point Input Units and 2-point Output Units added to the series.
- Long-distance communications are now supported; wiring can be reduced for communications at distances of up to 500 m when using CTF cable.
- PT connection via 1:N NT Link is now possible.



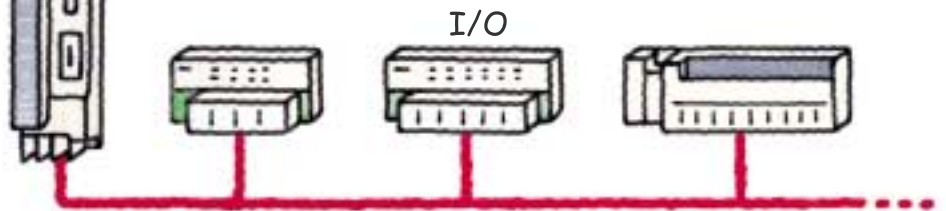
# e Controller small



The SRM1 controls machines as a programmable controller. Despite its size the SRM1 boasts a wealth of functionality supported by a 4-Kword program capacity, a 2-Kword data memory capacity, 14 basic instructions, and 81 special instructions. In addition, the SRM1 can control up to 256 I/O points as a CompoBus/S Master Unit. Use CompoBus/S Slaves to control up to 128 input and 128 output points.



CompoBus/S Slave Units can be used for SRM1 I/O. Significant wiring reductions are possible using a special flat cable or a vinyl-clad (VCTF) cable.



Special flat cable or VCTF cable

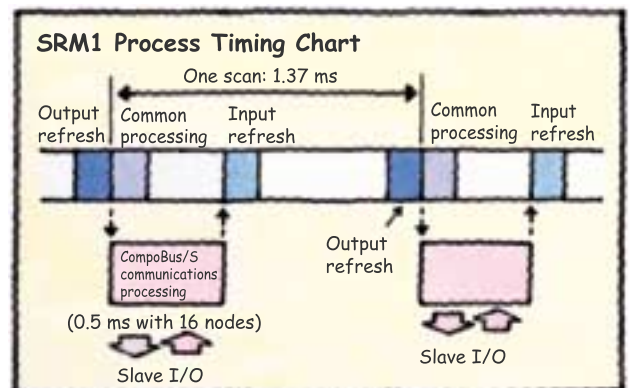
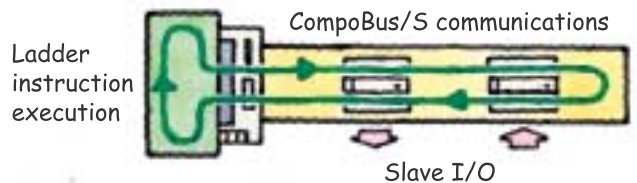


The SRM1 scan time for 500 steps with basic instructions is 1.37 ms, including the CompoBus/S communications time (see note). This kind of high-speed processing makes it hard to believe that the system is handling remote I/O!

Note: The figure of 1.37 ms is with 16 Slaves. With 32 Slaves, it is 1.67 ms.

Processing for CompoBus/S communications is performed after outputs are refreshed and then after communications is completed, inputs are refreshed. This means that CompoBus/S communications is performed once without fail within one scan.

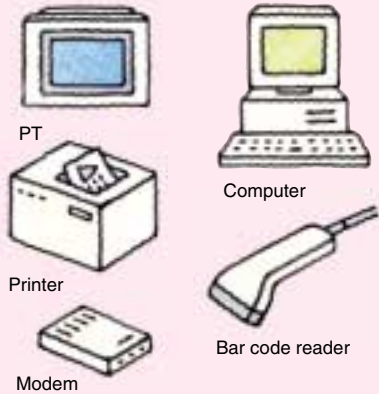
PLC scan time: 1.37 ms



# A Compact Body and Easy Instal a Wide Range of Applications

## Product Lineup

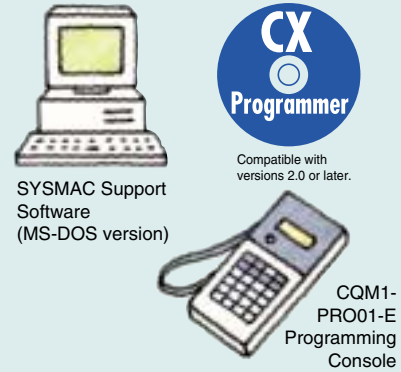
### RS-232C Communications Devices



### SRM1

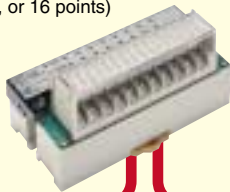


### Programming Device



**High-speed remote CompoBus/S system with 4-Kwords of user memory and 2-Kwords of data memory.**  
 ●Up to 128 inputs and 128 outputs (with 32 Slaves). ●Main line length: 100 m max.; Total branch line length: 50 m max. (high-speed communications mode) ●Main line length: 500 m max.; Total branch line length: 120 m max. (long-distance communications mode)

Remote Terminal (4, 8, or 16 points)



Connector Terminal (with sensor connectors; 8 points)



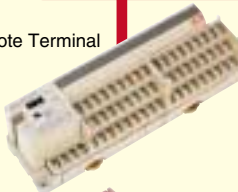
Connector Terminal (with MIL connectors; 16 or 32 points)



Relay-mounted Remote Terminal (8 or 16 points)



Transistor Remote Terminal (with three-row terminal block; 16 points)

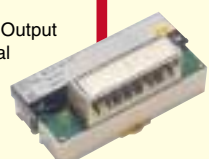


Either a special flat cable (SCA1-4F10) or a vinyl-clad (VCTF; 0.75 x 20) cable can be used.

Analog Input Terminal (4 points max.)



Analog Output Terminal (1 or 2 points)



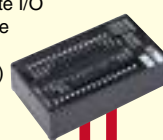
Sensor Terminal (8 points)



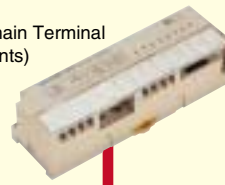
Sensor Amplifier Terminal



Remote I/O Module (16 points)



Bit Chain Terminal (8 points)



Terminating Resistor



I/O Link Unit (8 inputs and 8 outputs)

### T-branch Connection Supported

- Special flat cable
- Vinyl-clad (VCTF) cable



Simple expansion possible with T-shape pressure-welded connectors.



Expansion with relay terminal block.



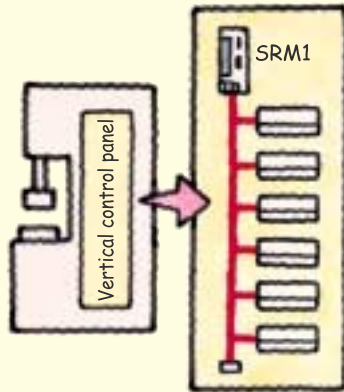
FND-X Position Driver

# ation for

## Miniature Devices Applications

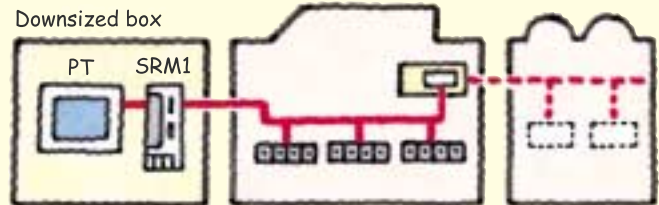
### Pressing Equipment

- Create a vertical control panel using the SRM1.
- Delivery the machine and the control panel together as one block instead of separately.



### Device Expansion

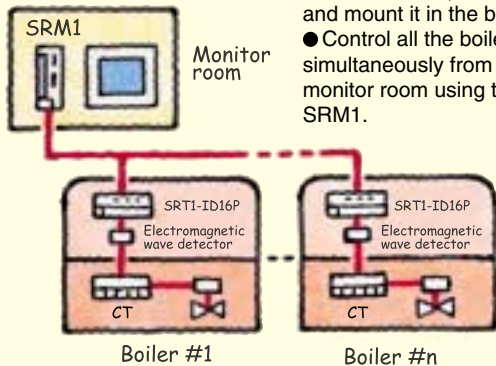
- The system can be easily expanded with a wide range of Slave Units.
- Slave Units can be arranged according to requirements.



## Monitoring Applications

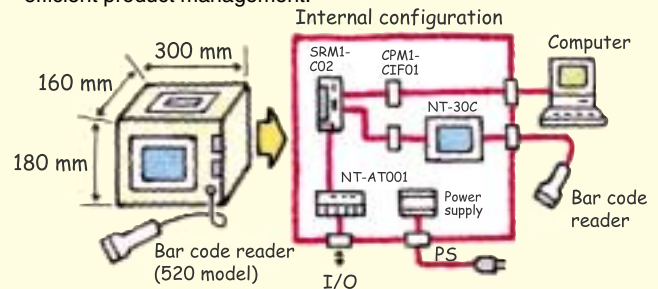
### Monitoring Boiler Status

- Construct a special board and mount it in the boiler.
- Control all the boilers simultaneously from the monitor room using the SRM1.



### Operator Interface for Mixed Foodstuff Work Instructions

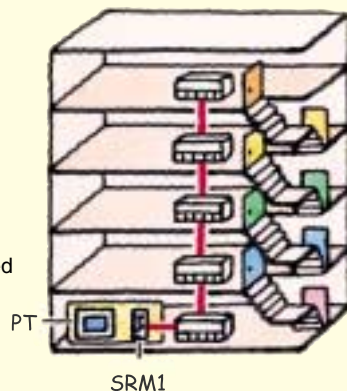
- Using bar codes and display devices for work instructions eliminates careless mistakes.
- Data checks can be performed after work is finished, enabling efficient product management.



## Non-FA Applications

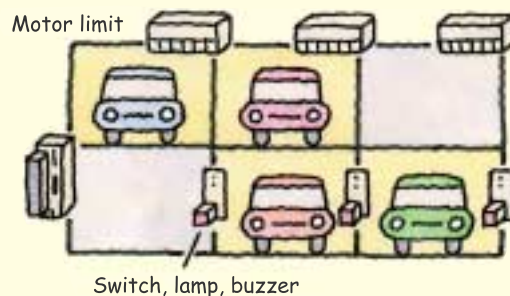
### Locking Control for Emergency Exits

- By installing a Sensor Terminal on every floor, all the exits can be monitored from just one SRM1 on the first floor.
- Status monitoring and locking can be performed using display devices.



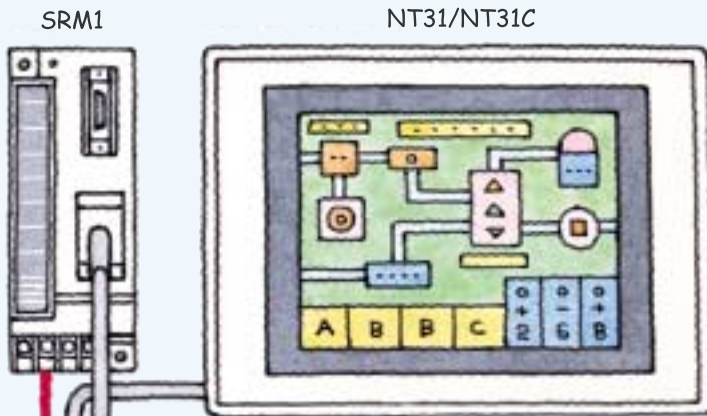
### Multi-level Parking Lots

- Space availability can be confirmed from one control room.
- Up to 256 points can be connected with one SRM1 enabling management of large-scale parking facilities.



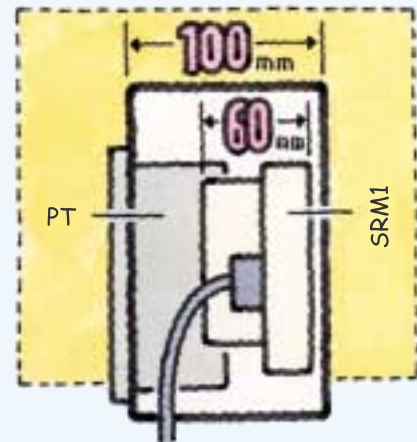
# Connect to PTs, Computers, or P Easy Operation and Data Manage

## Connection to PTs



### Installation Possible in Control Panels Only 100-mm Wide

The depth (front-to-back) of the SRM1 is only 60 mm. This means that even with an RS-232C cable connected, the SRM1 still fits easily into a control panel only 100-mm wide.

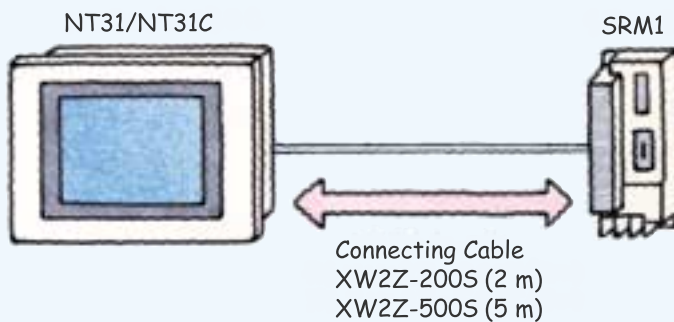


### Compatible with PT's Programming Console Function.

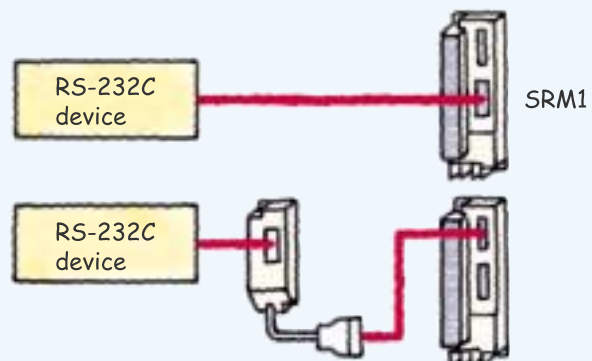
(Applicable model: SRM1-C02-V2.)

### **NEW** Compatible with NT Link (1:N) Function.

(Applicable model: SRM1-C02-V2.)



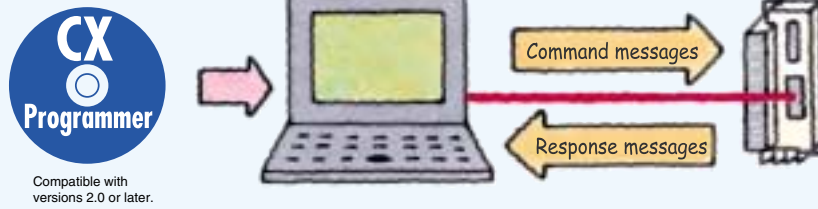
With no-protocol communications, by using TXD instructions and RXD instructions, communications with RS-232C devices such as bar code readers and printers are possible, and Host Link commands can be sent to OMRON PLCs. No-protocol communications can be performed using either the peripheral port or the RS-232C port.



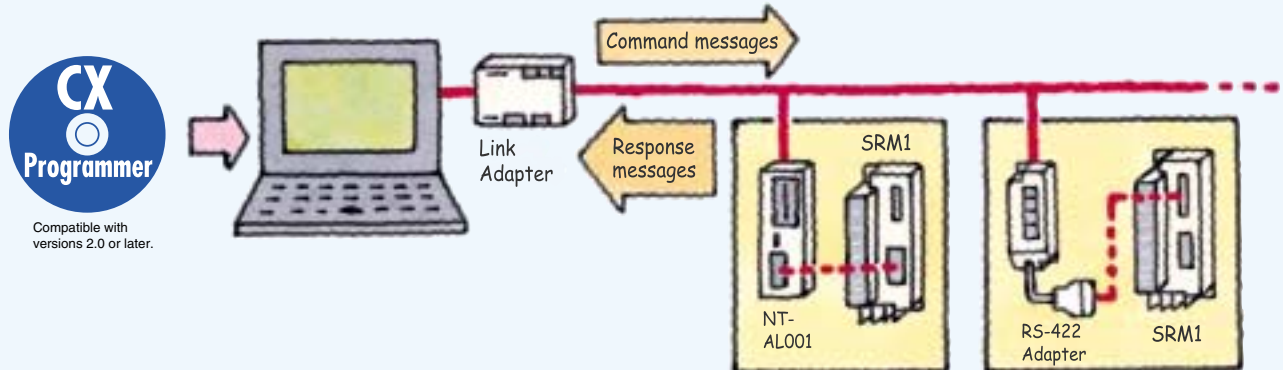
# LCs for ment

## Connection to Computers

### ● 1:1 Host Link Communications

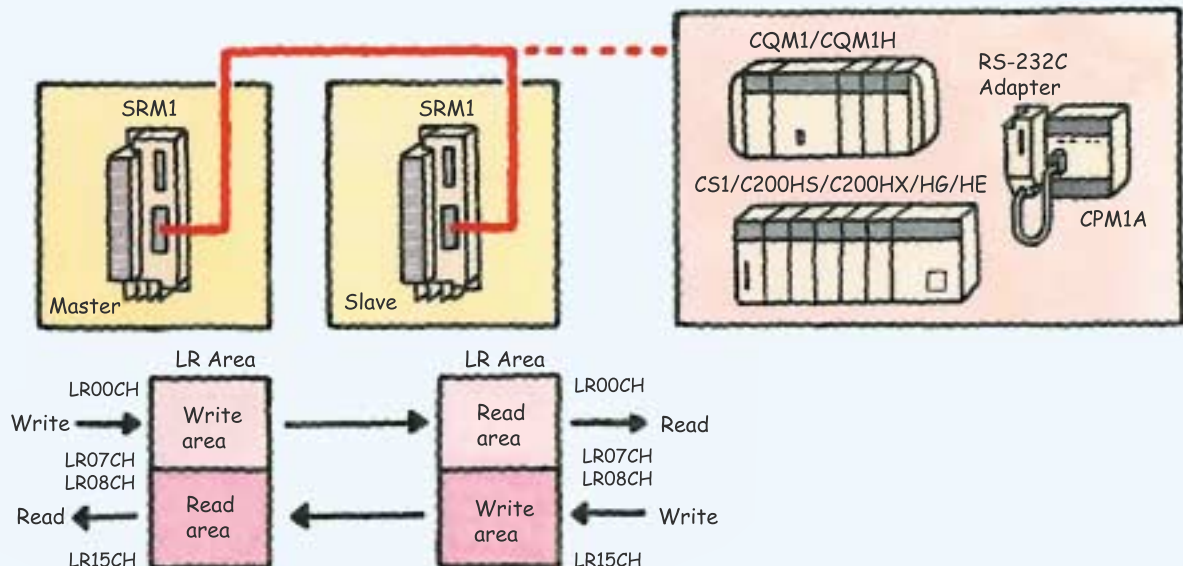


### ● 1:n Host Link Communications



## Connections Between 2 SRM1s and a Host PLC

### ● Connections Between 2 SRM1s and a Host PLC



# CompoBus/S Slave Units

## CPM2C-SRT21 I/O Link Unit

### I/O Link Unit for SYSMAC CPM2C PLCs

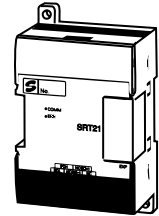
- Functions as the Slave of a CompoBus/S Master Unit.
- Number of points for I/O with the Master Unit: 8 inputs and 8 outputs.



## CPM1A-SRT21 I/O Link Unit

### I/O Link Unit for CPM2A/CPM1A PLCs

- Functions as the Slave of a CompoBus/S Master Unit.
- Number of points for I/O with the Master Unit: 8 inputs and 8 outputs.
- Applicable standards: UL, CSA, CE.

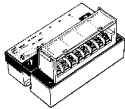


## SRT2-ID/OD(-1) Transistor Remote Terminals

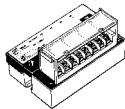
### Miniature remote terminals with 4, 8, or 16 transistor I/O points

- Both 4-points models and 8-points models have ultra-miniature dimensions: 80 x 50 x 45 mm (W x D x H).
- Internal circuits and I/O circuits are isolated and so separate power supplies can be used.
- Both DIN track mounting and screw mounting models are available.

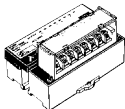
SRT2-ID04(-1)  
4 inputs



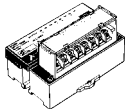
SRT2-OD04(-1)  
4 outputs



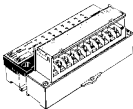
SRT2-ID08(-1)  
8 inputs



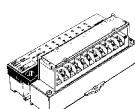
SRT2-OD08(-1)  
8 outputs



SRT2-ID016(-1)  
16 inputs



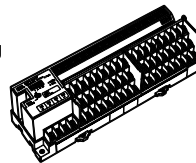
SRT2-OD016(-1)  
16 outputs



## SRT2-D16T(-1) Transistor Remote Terminals with 3-Tier Terminal Blocks

Transistor Remote Terminals with 3-tier terminal blocks (16 points) have been added to the series. Up to 6 different models are available including input-only models, output-only models, mixed-I/O models, and both NPN and PNP models.

- Wiring is simple. (No common tightening; wiring positions easily identified.)
- Easier system design and reduced wiring.
- Cassette-mounting construction used for the circuit.

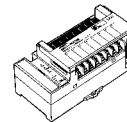


## SRT2-R Relay-mounted Remote Terminals

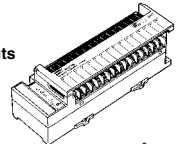
### Relay-mounted ultra-miniature Remote Terminals with 8 or 16 outputs

- Ultra-miniature dimensions: 101 x 51 x 51 mm (W x D x H) for 8-point models and 156 x 51 x 51 mm (W x D x H) for 16-point models.
- Internal circuits and I/O circuits are isolated and so separate power supplies can be used.
- Relay models and power MOS FET relay models are included in the lineup.
- Both DIN track mounting and screw mounting models are available.

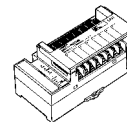
SRT2-ROC08  
8 relay outputs



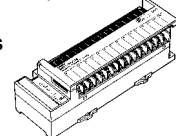
SRT2-ROC16  
16 relay outputs



SRT2-ROF08  
8 power MOS  
FET relay  
outputs



SRT2-ROF16  
16 power MOS  
FET relay  
outputs

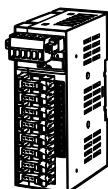


## SRT2-VID/VOD(-1) Connector Terminals (8 Points or 16 Points)

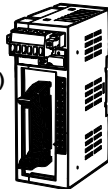
### Remote I/O terminals that enable wiring reductions, downsizing, and long-distance communications

- Switching possible between long-distance and high-speed modes.
- Connectors used for I/O, enabling system downsizing.
- Use of connectors also makes wiring easier.
- DIN track attachment allows greater flexibility with mounting.
- Sensor connector models and MIL connector models available with the same dimensions.

SRT2-VD08S(-1)  
Sensor Connector



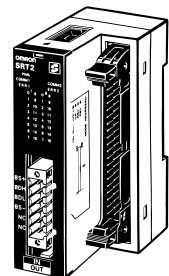
SRT2-VD16ML(-1)  
MIL Connector



## SRT2-32ML(-1) Connector Terminals (32 Points)

### Compact 32-point remote terminals

- Compact dimensions: 35 x 60 x 80 mm (W x D x H)
- Up to 6 different models are available including input-only models, output-only models, mixed-I/O models, and both NPN and PNP models.
- Switching possible between long-distance and high-speed modes.

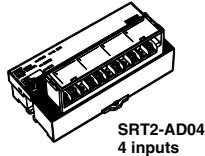




**SRT2-AD04**  
Analog Input Terminal

Compact Analog Input Terminal with the same dimensions as a 16-point Remote Terminal

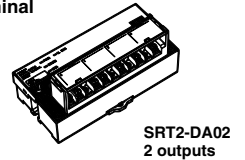
- The number of input points can be set according to requirements: 4 max.
- Resolution: 1/6000.
- High-speed conversion: 1 ms per point.
- Wide input range available.
- Dimensions: 105 x 50 x 48 mm (W x D x H)



**SRT2-DA02**  
Analog Output Terminal

Compact Analog Output Terminal with the same dimensions as a 16-point Remote Terminal

- The number of output points can be set to either 1 or 2.
- Resolution: 1/6000
- Dimensions: 105 x 50 x 48 mm (W x D x H)

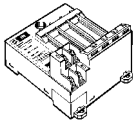


**SRT1-□□D04S**  
Sensor Amplifier Terminals

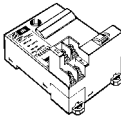
One-touch connection of sensor amplifiers enables significant wiring reductions.

- Costs reduced and space saved by connecting to a 4-channel Connector Unit for photoelectric sensors.
- A Terminal Block Unit, handy for connecting to sensors with built-in amplifiers and limit switches, is also included in the lineup.
- By using expansion blocks, up to 8 channels of sensor input can be made available.
- Connection to proximity sensors is also supported.

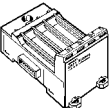
SRT1-TID04S  
Communications Unit



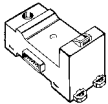
SRT1-TKD04S  
Communications Unit



SRT1-XID04S  
Expansion Unit



SRT1-XKD04S  
Expansion Unit

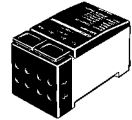


**Connector Units (for Photoelectric Sensors)**

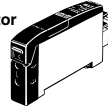
E3X-NT16  
General-purpose, teaching  
1 channel  
E3X-N Connector



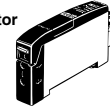
E3X-NM16  
General-purpose, teaching, multi-functional  
4 channels  
E3X-N Connector



E3X-NT26  
General-purpose, teaching, multi-functional  
1 channel  
E3X-N Connector



E3X-NH16  
Bar-display, teaching, long-distance, high-precision  
1 channel  
E3N Connector

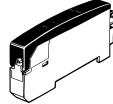


E3X-DA16  
Digital  
1 channel

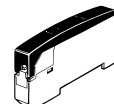


**Connector Units (for Proximity Sensors)**

E2CY-T16  
Aluminum detection

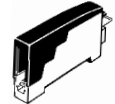


E2C-T16  
Miniature specifications



**Terminal Block Unit**

E39-JID01  
1 input

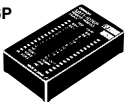


**SRT1-ID□P/OD□P**  
Remote I/O Modules

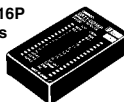
Modular models that can be mounted on PCBs

- Compact dimensions: 60 x 35 x 16 mm (W x D x H).
- 16-point input and 16-point output models available.

SRT1-ID16P  
16 inputs



SRT1-OD16P  
16 outputs

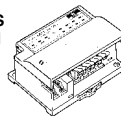


**SRT1-□D08S**  
Sensor Terminals

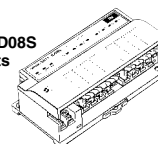
Easy connection to sensors using connectors.

- Easy mounting of sensors with XS8 connectors.
- 2-wire sensors can also be connected.
- With the mixed-I/O model, remote teaching is possible with the PLC using output signals.

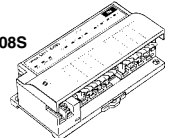
SRT1-ND08S  
4 inputs and 4 outputs



SRT1-OD08S  
8 outputs



SRT1-ID08S  
8 inputs

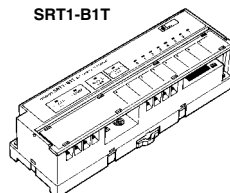


**SRT1-B1T**  
Bit Chain Terminal

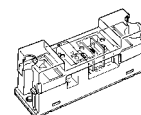
Communications Slave that provides 8 inputs and 8 outputs for distributed control of 1-point devices.

- Switching of input and output settings.
- Transmits I/O device signals in 1-point units along 4-core cable.
- Connection to a Bit Chain Slave is easy using special pressure-welded connectors.
- A service power supply terminal is provided on B1T Bit Chain Input Slaves, and sensors can be mounted directly.

SRT1-B1T

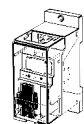


Input Slave



B1T-J

Output Slave



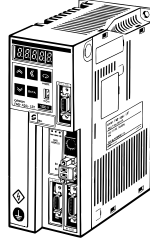
B1T-JV24/JR/JM

# CompoBus/S Slave Units

## FND-X□□□-SRT CompoBus/S Position Driver

### Easy-to-use servo drivers with positioning functionality

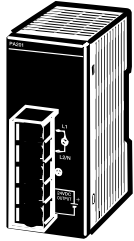
- Can be connected to 30-W to 2.2-kW servomotors.
- Feature 2 modes: feeder control and PTP control.
- Positioning is performed simply by specifying a point number and turning on the start signal.



## Recommended Power Supplies

These products provide the DC power supply required for all types of I/O devices.

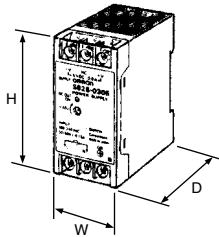
### CPM2C-PA201



Model	Input voltage	Output voltage	Output current	Output capacity	External dimensions (mm) H x W x D
CPM2C-PA201	100 to 240 VAC	24V	0.6A	15W	90 x 40 x 60 (not including the terminals)

For details, refer to SYSMAC CPM2A/CPM2C (P049).

### S82K Series



Model	Input voltage	Output power supply/current	Output capacity	External dimensions (mm) H x W x D
S82K-00324	100 to 240 VAC	24 VDC, 0.13 A	3W	75 x 37.5 x 65
S82K-00724		24 VDC, 0.3 A	7.5W	
S82K-01524	100 to 240 VAC	24 VDC, 0.6 A	15W	75 x 45 x 96
S82K-03024		24 VDC, 1.3 A	30W	75 x 90 x 96
S82K-05024		24 VDC, 2.1 A	50W	
S82K-10024	100/200 VAC switchable	24 VDC, 4.1 A	100W	75 x 145 x 96

For details, refer to Power Supply Selection Guide (Y102).

**Note: Do not use this document to operate the Unit.**

**OMRON Corporation**

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**Authorized Distributor:**

Note: Specifications subject to change without notice.

Cat.No.P040-E1-4  
Printed in Japan  
0101-0.5M

# Specifications

## ■ General Specifications

Item	SRM1-C01/02-V2
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	2 kV, conforming to IEC61000-4-4 (power lines)
Vibration resistance	10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8 m/s <sup>2</sup> 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 <sup>2</sup> 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.

## ■ Performance Specifications

Item	SRM1-C01/02-V2
Control method	Stored program method
I/O control method	Cyclic scan method
Programming language	Ladder diagram
Instruction length	1 step per instruction, 1 to 5 words per instruction
Types of instructions	Basic instructions: 14 Special instructions: 81 instructions, 125 variations
Execution time	Basic instructions: 0.97 μs (LD instruction) Special instructions: 9.1 μs (MOV instruction)
Program capacity	4,096 words
Maximum number of I/O points	256 points (IN 128 points/OUT 128 points)
Input bits	160 bits: 00000 to 00715 (Bits not used as input bits can be used as work bits.)
Output bits	160 bits: 01000 to 01715 (Bits not used as output bits can be used as work bits.)
Work bits	704 bits: 00800 to 00915 (Words IR 008 and IR 009) 01800 to 01915 (Words IR 018 and IR 019) 20000 to 23915 (Words IR 200 to IR239)
Special bits (SR area)	248 bits: 24000 to 25507 (Words IR 240 to IR 255)
Temporary bits (TR area)	8 bits (TR0 to TR7)
Holding bits (HR area)	320 bits: HR 0000 to HR 1915 (Words HR 00 to HR 19)
Auxiliary bits (AR area)	256 bits: AR 0000 to AR 1515 (Words AR 00 to AR 15)
Link bits (LR area)	256 bits: LR 0000 to LR 1515 (Words LR 00 to LR 15)
Timers/Counters	128 timers/counters (TIM/CNT 000 to TIM/CNT 127)  100-ms timers: TIM 000 to TIM 127 10-ms timers (high-speed counter): TIM 000 to TIM 003 Decrementing counters and reversible counters  (Note: A malfunction may occur if the cycle time is over 10 ms when TIM 004 to TIM 127 are used with the TIMH instruction.)
Data memory	Read/Write: 2,022 words (DM 0000 to DM 2021) Read-only: 512 words (DM 6144 to DM 6655)
Interval timer interrupts	One-shot mode / Scheduled interrupt mode, one bit (0.5 to 319.968 ms)

# Specifications

Item	SRM1-C01/02-V2
Memory protection	HR, AR, and DM area contents; and counter values maintained during power interruptions.
Memory backup	Flash memory: The program and read-only DM area are backed up without a battery.  Capacitor backup: The read/write DM area, HR area, AR area, and counter values are backed up by a capacitor for 20 days at 25°C. The capacitor backup time depends on the ambient temperature. See the graph on the following page for details.
Self-diagnostic functions	CPU failure (watchdog timer), memory check, communications errors, setting errors
Program checks	No END instruction, programming errors (continuously checked during operation)
Peripheral port	One point; tool connection, Host Link, no protocol
RS-232C Port	One point (SRM1-C02-V2 only); Host Link, 1:1 NT Link, 1:N NT Link, 1:1 PC Link, no protocol

## ■ CompoBus/S Communications Specifications

Item		Specifications
Communications method		CompoBus special protocol
Transmission method		Multi-drop, T-branch
Baud rate (See note 1.)	High-speed communications mode	750 kbps
	Long-distance communications mode	93.75 kbps
Modulation method		Baseband method
Code method		Manchester coding method
Maximum number of connectible terminals		32: 16 IN and 16 OUT 16: 8 IN and 8 OUT
Number of points per frame		256 (128 IN and 128 OUT), when maximum number of connectible terminals is 32. 128 (64 IN and 64 OUT), when maximum number of connectible terminals is 16.
Communications cycle time	High-speed communications mode	0.8 ms, when maximum number of connectible terminals is 32.
		0.5 ms, when maximum number of connectible terminals is 16.
	Long-distance communications mode	6.0 ms, when maximum number of connectible terminals is 32.
		4.0 ms, when maximum number of connectible terminals is 16.
Communications function		Cyclic transfer only (no message communications)
Error control checks		Manchester code check, frame length check, parity check, two-transfer comparison
Communications distance	High-speed communications mode	Main line length: 100 m max.; branch-line length: 3 m max.; total length of branches: 50 m max. (when using VCTF cable)
		Main line length: 30 m max.; branch-line length: 3 m max.; total length of branches: 30 m max. (when using special flat cable) (See note 2.)
	Long-distance communications mode	Main line length: 500 m max.; branch-line length: 6 m max.; total length of branches: 120 m max. (when using VCTF cable)
		Free branching (up to a total cable length of 200 m) (when using special flat cable) (See note 3.)
Cable	Vinyl-clad VCTF JIS C3306	Two 0.75 mm <sup>2</sup> conductors (2 signal wires)
	Flat cable	Four 0.75 mm <sup>2</sup> conductors (2 signal wires and 2 power supply wires)

**Note:** 1. Changed using a DIP switch. (Switched using DM Area settings. Default setting = 750 kbit/s.)

# Specifications

2. When the total number of connected Slaves is 16 or less, communications are possible with a main line length of 100 m max. and a total branch line length of 50 m max.
3. There are no restrictions on the branching configuration, main line length, branch line length, and total branch line length. Connect a terminating resistance to the point in the system farthest away from the Master.

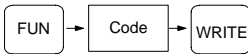
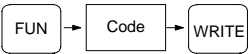
## ■ Memory Area Allocations

Name		Number of bits	Word addresses	Bit addresses	Function
Input area		160 (10 words)	IR 000 to IR 009	IR 00000 to IR 00915	These bits can be allocated to CompoBus/S. (Words that are not used for input or output can be used as work words.)
Output area		160 (10 words)	IR 010 to IR 019	IR 01000 to IR 01915	
Work area		640 (40 words)	IR 200 to IR 239	IR 20000 to IR 23915	These bits can be used freely within the program.
SR area		248	IR 240 to IR 255	IR 24000 to IR 25507	These bits are used for specific functions.
TR area		8	TR 0 to TR 7		These bits are used to temporarily store the status of branch points in instruction blocks.
HR area		320 (20 words)	HR 00 to HR 19	HR 0000 to HR 1915	These bits can be freely used within the program. Their statuses are held when power is interrupted.
AR area		256 (16 words)	AR 00 to AR 15	AR 0000 to AR 1515	These bits are used for specific functions. AR 04 to AR 07 are used as Slave Status Flags.
LR area		256 (16 words)	LR 00 to LR 15	LR 0000 to LR 1515	These bits are used for 1-to-1 links for data I/O. (They can also be used as work bits.)
TIM/CNT area		128	TIM/CNT 000 to TIM/CNT 127		These bits are used for timers and counters. The same bit can be used for either a timer or a counter.
DM area	Read/Write only	2022 words	DM 0000 to DM 2021		These bits are used in word units (i.e. in 16-bit blocks). Their statuses are held when power is interrupted. DM 6144 to DM 6599 and DM 6600 to DM 6655 cannot be written to from the program. (They can, however, be set from a Programming Device.)
	Read only	456 words	DM 6144 to DM 6599		
	PC Setup	56 words	DM 6600 to DM 6655		

# Programming Instructions

## Summary of Programming Instructions

### ■ Function Code Chart

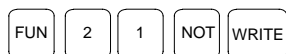
Table symbols	Details	Key operations for specifying programming instructions
○	Allocated to instruction keys on the Programming Console. These need not be specified with function codes.	---
Code	Special instructions specified with function codes.	
★	Expansion instructions. The following operations are required in order to use these instructions.	(After sorting operations) 

### ■ Differentiated Instructions

Differentiated instructions can sometimes be used for SRM1 special instructions. Instructions marked with (@) in the mnemonics can also be used as differentiated instructions. Here the input rise time (shift from OFF to ON) is used to execute the instruction in just one cycle.

To specify an instruction, press the NOT Key after the function code.

Example: Specifying the @MOV (21) instruction



### ■ Sequence Instructions

#### Sequence Input Instructions

Instruction	Mnemonic	Code	Function
LOAD	LD	○	Connects an NO condition to the left bus bar.
LOAD NOT	LD NOT	○	Connects an NC condition to the left bus bar.
AND	AND	○	Connects an NO condition in series with the previous condition.
AND NOT	AND NOT	○	Connects an NC condition in series with the previous condition.
OR	OR	○	Connects an NO condition in parallel with the previous condition.
OR NOT	OR NOT	○	Connects an NC condition in parallel with the previous condition.
AND LOAD	AND LD	○	Connects two instruction blocks in series.
OR LOAD	OR LD	○	Connects two instruction blocks in parallel.

**Note:** ○: Instruction keys allocated to the Programming Console.

#### Sequence Output Instructions

Instruction	Mnemonic	Code	Function
OUTPUT	OUT	○	Outputs the result of logic to a bit.
OUT NOT	OUT NOT	○	Reverses and outputs the result of logic to a bit.
SET	SET	○	Force sets (ON) a bit.
RESET	RSET	○	Force resets (OFF) a bit.
KEEP	KEEP	11	Maintains the status of the designated bit.
DIFFERENTIATE UP	DIFU	13	Turns ON a bit for one cycle when the execution condition goes from OFF to ON.
DIFFERENTIATE DOWN	DIFD	14	Turns ON a bit for one cycle when the execution condition goes from ON to OFF.

**Note:** ○: Instruction keys allocated to the Programming Console.

#### Sequence Control Instructions

Instruction	Mnemonic	Code	Function
NO OPERATION	NOP	00	---
END	END	01	Required at the end of the program.
INTER-LOCK	IL	02	If the execution condition for IL(02) is OFF, all outputs are turned OFF and all timer PVs reset between IL(02) and the next ILC(03).
INTER-LOCK CLEAR	ILC	03	ILC(03) indicates the end of an interlock (beginning at IL(02)).
JUMP	JMP	04	If the execution condition for JMP(04) is ON, all instructions between JMP(04) and JME(05) are treated as NOP(00).
JUMP END	JME	05	JME(05) indicates the end of a jump (beginning at JMP(04)).

### ■ Timer/Counter Instructions

Instruction	Mnemonic	Code	Function
TIMER	TIM	○	An ON-delay (decrementing) timer.
COUNTER	CNT	○	A decrementing counter.
REVERSIBLE COUNTER	CNTR	12	Increases or decreases PV by one.
HIGH-SPEED TIMER	TIMH	15	A high-speed, ON-delay (decrementing) timer.

**Note:** ○: Instruction keys allocated to the Programming Console.

# Programming Instructions

## ■ Step Instructions

Instruction	Mnemonic	Code	Function
STEP DE-FINE	STEP	08	Defines the start of a new step and resets the previous step when used with a control bit. Defines the end of step execution when used without a control bit.
STEP START	SNXT	09	Starts the execution of the step when used with a control bit.

## ■ Increment/Decrement Instructions

Instruction	Mnemonic	Code	Function
INCREMENT	(@)INC	38	Increases the BCD content of the specified word by 1.
DECREMENT	(@)DEC	39	Decrements the BCD content of the specified word by 1.

## ■ BCD/Binary Calculation Instructions

Instruction	Mnemonic	Code	Function
BCD ADD	(@)ADD	30	Adds the content of a word (or a constant).
BCD SUBTRACT	(@)SUB	31	Subtracts the content of a word (or constant) and CY from the content of a word (or constant).
BCD MULTIPLY	(@)MUL	32	Multiplies the contents of two words (or constants).
BCD DIVIDE	(@)DIV	33	Divides the content of a word (or constant) by the content of a word (or constant).
BINARY ADD	(@)ADB	50	Adds the contents of two words (or constants) and CY.
BINARY SUBTRACT	(@)SBB	51	Subtracts the content of a word (or constant) and CY from the content of a word (or constant).
BINARY MULTIPLY	(@)MLB	52	Multiplies the contents of two words (or constants).
BINARY DIVIDE	(@)DVB	53	Divides the content of a word (or constant) by the content of a word and obtains the result and remainder.
DOUBLE BCD ADD	(@)ADDL	54	Add the 8-digit BCD contents of two pairs of words (or constants) and CY.
DOUBLE BCD SUBTRACT	(@)SUBL	55	Subtracts the 8-digit BCD contents of a pair of words (or constants) and CY from the 8-digit BCD contents of a pair of words (or constants).
DOUBLE BCD MULTIPLY	(@)MULL	56	Multiplies the 8-digit BCD contents of two pairs of words (or constants).
DOUBLE BCD DIVIDE	(@)DIVL	57	Divides the 8-digit BCD contents of a pair of words (or constants) by the 8-digit BCD contents of a pair of words (or constants).

## ■ Data Conversion Instructions

Instruction	Mnemonic	Code	Function
BCD TO BINARY	(@)BIN	23	Converts 4-digit BCD data to 4-digit binary data.
BINARY TO BCD	(@)BCD	24	Converts 4-digit binary data to 4-digit BCD data.
4 TO 16 DECODER	(@)MLPX	76	Takes the hexadecimal value of the specified digit(s) in a word and turns ON the corresponding bit in a word(s).
16 TO 4 DECODER	(@)DMPX	77	Identifies the highest ON bit in the specified word(s) and moves the hexadecimal value(s) corresponding to its location to the specified digit(s) in a word.
ASCII CODE CONVERT	(@)ASC	86	Converts the designated digit(s) of a word into the equivalent 8-bit ASCII code.
2'S COMPLEMENT (-V2 models only)	(@)NEG	★	Converts the four-digit hexadecimal content of the source word to its 2's complement and outputs the result to R.

## Data Comparison Instructions

Instruction	Mnemonic	Code	Function
COMPARE	CMP	20	Compares two four-digit hexadecimal values.
DOUBLE COMPARE	CMPL	60	Compares two eight-digit hexadecimal values.
BLOCK COMPARE	(@)BCMP	68	Judges whether the value of a word is within 16 ranges (defined by lower and upper limits).
TABLE COMPARE	(@)TCMP	85	Compares the value of a word to 16 consecutive words.
AREA RANGE COMPARE (-V2 models only)	ZCP	★	Compares a word to a range defined by lower and upper limits and outputs the result to the GR, EQ, and LE flags.



# Programming Instructions

## ■ Data Movement Instructions

Instruction	Mnemonic	Code	Function
MOVE	(@)MOV	21	Copies a constant or the content of a word to a word.
MOVE NOT	(@)MVN	22	Copies the complement of a constant or the content of a word to a word.
BLOCK TRANSFER	(@)XFER	70	Copies the content of a block of up to 1,000 consecutive words to a block of consecutive words.
BLOCK SET	(@)BSET	71	Copies the content of a word to a block of consecutive words.
DATA EXCHANGE	(@)XCHG	73	Exchanges the content of two words.
SINGLE WORD DISTRIBUTE	(@)DIST	80	Copies the content of a word to a word (whose address is determined by adding an offset to a word address).
DATA COLLECT	(@)COLL	81	Copies the content of a word (whose address is determined by adding an offset to a word address) to a word.
MOVE BIT	(@)MOVB	82	Copies the specified bit from one word to the specified bit of a word.
MOVE DIGIT	(@)MOVD	83	Copies the specified digits (4-bit units) from a word to the specified digits of a word.

## ■ Logic Instructions

Instruction	Mnemonic	Code	Function
COMPLEMENT	(@)COM	29	Turns OFF all ON bits and turns ON all OFF bits in the specified word.
LOGICAL AND	(@)ANDW	34	Logically ANDs the corresponding bits of two words (or constants).
LOGICAL OR	(@)ORW	35	Logically ORs the corresponding bits of two words (or constants).
EXCLUSIVE OR	(@)XORW	36	Exclusively ORs the corresponding bits of two words (or constants).
EXCLUSIVE NOR	(@)XNRW	37	Exclusively NORs the corresponding bits of two words (or constants).

## ■ Shift Instructions

Instruction	Mnemonic	Code	Function
SHIFT REGISTER	SFT	○/10	Copies the specified bit (0 or 1) into the rightmost bit of a shift register and shifts the other bits one bit to the left.
WORD SHIFT	(@)WSFT	16	Creates a multiple-word shift register that shifts data to the left in one-word units.
ASYNCHRONOUS SHIFT REGISTER	(@)ASFT	17	Creates a shift register that exchanges the contents of adjacent words when one is zero and the other is not.
ARITHMETIC SHIFT LEFT	(@)ASL	25	Shifts a 0 into bit 00 of the specified word and shifts the other bits one bit to the left.
ARITHMETIC SHIFT RIGHT	(@)ASR	26	Shifts a 0 into bit 15 of the specified word and shifts the other bits one bit to the right.
ROTATE LEFT	(@)ROL	27	Moves the content of CY into bit 00 of the specified word, shifts the other bits one bit to the left, and moves bit 15 to CY.
ROTATE RIGHT	(@)ROR	28	Moves the content of CY into bit 15 of the specified word, shifts the other bits one bit to the right, and moves bit 00 to CY.
ONE DIGIT SHIFT LEFT	(@)SLD	74	Shifts a 0 into the rightmost digit (4-bit unit) of the shift register and shifts the other digits one digit to the left.
ONE DIGIT SHIFT RIGHT	(@)SRD	75	Shifts a 0 into the leftmost digit (4-bit unit) of the shift register and shifts the other digits one digit to the right.
REVERSIBLE SHIFT REGISTER	(@)SFTR	84	Creates a single or multiple-word shift register that can shift data to the left or right.

**Note:** ○: Instruction keys allocated to the Programming Console.

## ■ Special Calculation Instruction

Instruction	Mnemonic	Code	Function
BIT COUNTER	(@)BCNT	67	Counts the total number of bits that are ON in the specified block of words.

# Programming Instructions

## ■ Subroutine Instructions

Instruction	Mnemonic	Code	Function
SUBROUTINE ENTRY	(@)SBS	91	Executes a subroutine in the main program.
SUBROUTINE ENTRY	SBN	92	Marks the beginning of a subroutine program.
SUBROUTINE RETURN	RET	93	Marks the end of a subroutine program.
MACRO	MCRO	99	Calls and executes the specified subroutine, substituting the specified input and output words for the input and output words in the subroutine.

## ■ Interrupt Control Instructions

Instruction	Mnemonic	Code	Function
INTERVAL TIMER	(@)STIM	69	Controls interval timers used to perform scheduled interrupts.
INTERUPT CONTROL	(@)INT	89	Performs interrupt control, such as masking and unmasking the interrupt bits for I/O interrupts.

## ■ Peripheral Device Control Instructions

### I/O Unit Instructions

Instruction	Mnemonic	Code	Function
7-SEGMENT DECODER	(@)SDEC	78	Converts the designated digit(s) of a word into an 8-bit, 7-segment display code.
I/O REFRESH	(@)IORF	97	Refreshes the specified I/O word.

### Display Instruction

Instruction	Mnemonic	Code	Function
MESSAGE	(@)MSG	46	Reads up to 8 words of ASCII code (16 characters) from memory and displays the message on the Programming Console or other Peripheral Device.

### High-speed Counter Control Instructions

Instruction	Mnemonic	Code	Function
MODE CONTROL	(@)INI	61	Starts and stops counter operation, compares and changes counter PVs, and stops pulse output.
PV READ	(@)PRV	62	Reads counter PVs and status data.
COMPARE TABLE LOAD	(@)CTBL	63	Compares counter PVs and generates a direct table or starts operation.

## ■ Damage Diagnosis Instructions

Instruction	Mnemonic	Code	Function
FAILURE ALARM	(@)FAL	06	Generates a non-fatal error when executed. The Error/Alarm indicator flashes and the CPU continues operating.
SEVERE FAILURE ALARM	FALS	07	Generates a fatal error when executed. The Error/Alarm indicator lights and the CPU stops operating.

## ■ Special System Instructions

Instruction	Mnemonic	Code	Function
SET CARRY	(@)STC	40	Sets Carry Flag 25504 to 1.
CLEAR CARRY	(@)CLC	41	Sets Carry Flag 25504 to 0.

## ■ RS-232C Instructions

Instruction	Mnemonic	Code	Function
RECEIVE	(@)RXD	47	Receives data via a communications port.
TRANSMIT	(@)TXD	48	Sends data via a communications port.
FCS CALCULATE	(@)FCS	★	Checks for errors in data transmitted by a Host Link command.
ASCII-TO-HEXADECIMAL	(@)HEX	★	Converts ASCII data to hexadecimal data.
CHANGE RS-232C SETUP	(@)STUP	★	Sends the designated word content (for 5 words) to the system setting area of designated RS-232 port.

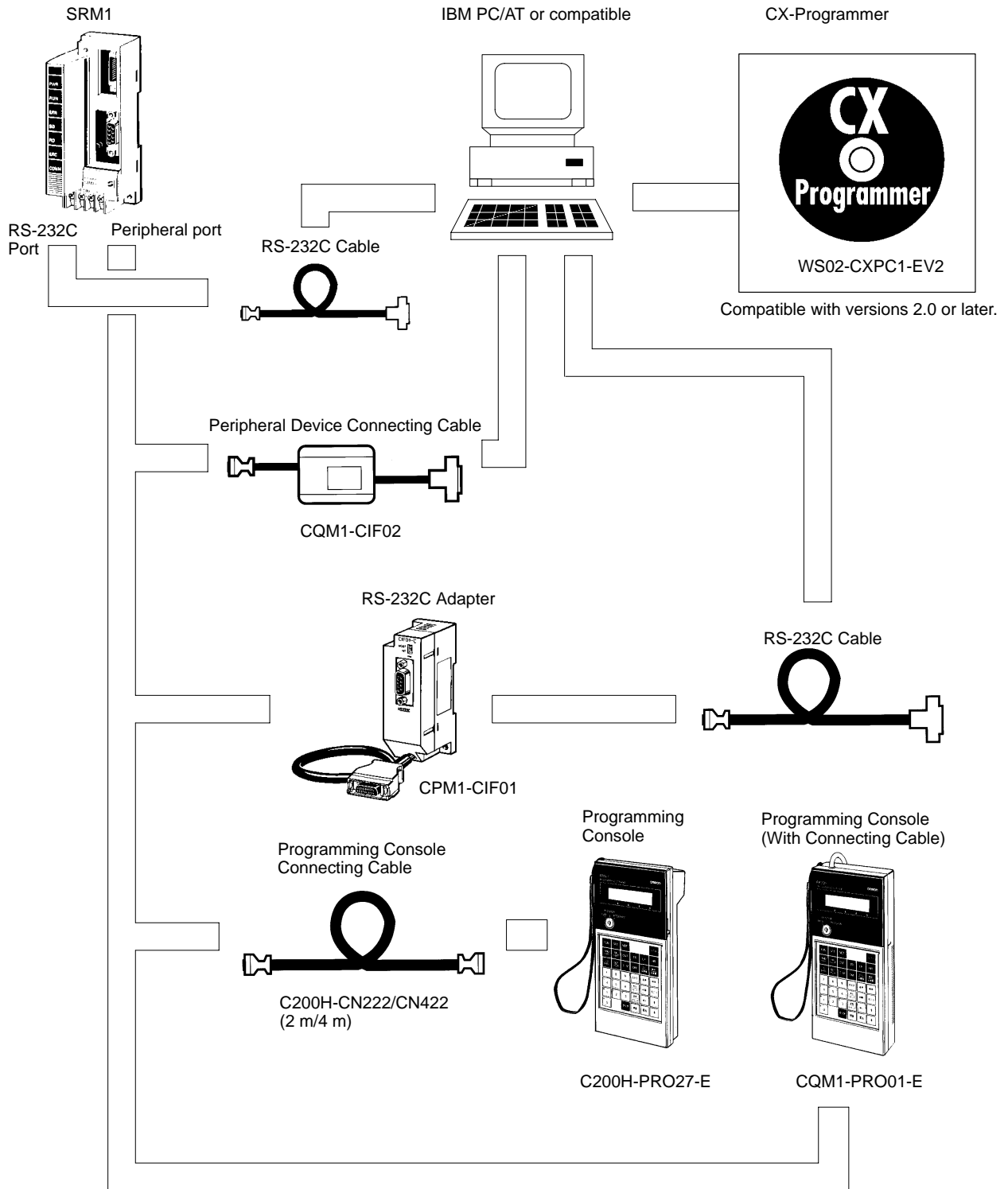
## ■ Data Control Instructions

Instruction	Mnemonic	Code	Function
SCALE (-V2 models only)	(@)SCL	66	Performs a scaling conversion on the calculated value.
PID CONTROL (-V2 models only)	PID	★	Performs PID control based on the specified parameters.
AREA RANGE COMPARE (See note.)	ZCP	★	Compares a value to a specified range.
2's COMPLEMENT (See note.)	(@)NEG	★	Converts 4-digit hexadecimal data to its 2's complement.

**Note:** These instructions can only be used with SRM1-C01/C02 models and with CX-Programmer versions 2.0 or later.

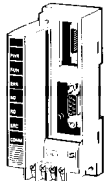


# Peripheral Devices



# Standard Models

## ■ Masters

Model	Specifications	Standard	
CompoBus/S Master 	SRM1-C01-V2	Without RS-232C port	U, C, CE
	SRM1-C02-V2	With RS-232C port	

## ■ Slaves

### Remote Terminals

Model	Specifications	Standard
SRT2-ID04	4 transistor inputs, multiple power supply, NPN	U, C, CE
SRT2-ID04-1	4 transistor inputs, multiple power supply, PNP	
SRT2-ID08	8 transistor inputs, multiple power supply, NPN	
SRT2-ID08-1	8 transistor inputs, multiple power supply, PNP	
SRT2-ID16	16 transistor inputs, multiple power supply, NPN	
SRT2-ID16-1	16 transistor inputs, multiple power supply, PNP	
SRT2-ID16T	16 transistor inputs, multipoint common terminal, multiple power supply, NPN	
SRT2-ID16T-1	16 transistor inputs, multipoint common terminal, multiple power supply, PNP	
SRT2-OD04	4 transistor outputs, multiple power supply, NPN	
SRT2-OD04-1	4 transistor outputs, multiple power supply, PNP	
SRT2-OD08	8 transistor outputs, multiple power supply, NPN	
SRT2-OD08-1	8 transistor outputs, multiple power supply, PNP	
SRT2-OD16	16 transistor outputs, multiple power supply, NPN	
SRT2-OD16-1	16 transistor outputs, multiple power supply, PNP	
SRT2-OD16T	4 transistor outputs, multiple power supply, NPN	
SRT2-OD16T-1	16 transistor outputs, multiple power supply, PNP	
SRT2-ROC08	8 relay outputs, local power supply	
SRT2-ROC16	16 relay outputs, local power supply	
SRT2-ROF08	8 power MOSFET relay outputs, local power supply	
SRT2-ROF16	16 power MOSFET relay outputs, local power supply	
SRT2-MD16T	8 transistor inputs/8 transistor outputs, multipoint common terminal, multiple power supply, NPN	
SRT2-MD16T-1	8 transistor inputs/8 transistor outputs, multiple power supply, PNP	

● U: UL, cUL: Canada UL, C: CSA, N: NK, L: LLOYD, CE: EC Directives

See OMRON sales representatives for conditions under which UL, cUL, CSA, NK, LLOYD, and CE standards were met.

# Standard Models

## Connector Terminals

Model	Specifications	Standard
SRT2-ID32ML	32 inputs	CE
SRT2-ID32ML-1	32 inputs, PNP	
SRT2-OD32ML	32 outputs	
SRT2-OD32ML-1	32 outputs, PNP	
SRT2-MD32ML	32 inputs/outputs	
SRT2-MD32ML-1	32 inputs/outputs	
SRT2-VID08S	8 transistor inputs, sensor cable connector, multiple power supply, NPN	U, C, CE
SRT2-VID08S-1	8 transistor inputs, sensor cable connector, multiple power supply, PNP	
SRT2-VID16ML	16 transistor inputs, MIL connector, multiple power supply, NPN	
SRT2-VID16ML-1	16 transistor inputs, MIL connector, multiple power supply, PNP	
SRT2-VOD08S	8 transistor outputs, sensor cable connector, multiple power supply, NPN	
SRT2-VOD08S-1	8 transistor outputs, sensor cable connector, multiple power supply, PNP	
SRT2-VOD16ML	16 transistor outputs, MIL connector, multiple power supply, NPN	
SRT2-VOD16ML-1	16 transistor outputs, MIL connector, multiple power supply, PNP	

## Sensor Amplifier Terminals

Model	Specifications	Standard
SRT1-TID04S	4 inputs (1 word x 4), network power supply	CE
SRT1-TKD04S	4 inputs (4 words x 1), network power supply	
SRT1-XID04S	4 inputs (1 word x 4), Expansion Sensor Amplifier Terminal	
SRT1-XKD04S	4 inputs (4 words x 1), Expansion Sensor Amplifier Terminal	

### • Connector Units for photoelectric sensors

Model	Specifications	Standard
E3X-NT16	General-purpose, teaching, 1 channel	U, C, CE
E3X-NT26	General-purpose, teaching, multi-functional, 1 channel	
E3X-NM16	General-purpose, teaching, multi-functional, 4 channels	
E3X-NH16	General-purpose, bar-display, teaching, long-distance, high-precision, 1 channel	
E3X-DA16	Digital, 1 channel	

### • Connector Units for proximity sensors

Model	Specifications	Standard
E2CY-T16	Used for aluminum detection	U, C
E2C-T16	Miniature specifications	

### • Terminal Block Unit

Model	Specifications	Standard
E39-JID01	1 input	---

● U: UL, cUL: Canada UL, C: CSA, N: NK, L: LLOYD, CE: EC Directives

See OMRON sales representatives for conditions under which UL, cUL, CSA, NK, LLOYD, and CE standards were met.

**Note:** For details regarding CompoBus/S, refer to the *CompoBus/S Catalog*. (Catalog number: Q103-E1-□)

# Standard Models

## Analog I/O Terminals

Model	Specifications	Standard
SRT2-AD04	4 analog inputs (settable to 1, 2, 3, or 4 inputs), network power supply	U, C, CE
SRT2-DA02	2 analog outputs (settable to 1 or 2 outputs), network power supply	

## Sensor Terminals

Model	Specifications	Standard
SRT1-ID08S	8 inputs, network power supply	CE
SRT1-OD08S	8 outputs, local power supply	
SRT1-ND08S	4 inputs, 4 outputs, network power supply	

## Bit Chain Terminal

Model	Specifications	Standard
SRT1-B1T	8 inputs/outputs (I/O set via switch), local power supply	---

**Note:** The above model does not support long-distance communications mode.

## Remote I/O Module (for mounting to PCB)

Model	Specifications	Standard
SRT1-ID16P	16 inputs	---
SRT1-OD16P	16 outputs	

## CPM1A/CPM2A/CPM2C I/O Link Unit

Model	Specifications	Standard
CPM2C-SRT21	Used with CPM2C PLCs; 8 inputs and 8 outputs	CE
CPM1A-SRT21	Used with CPM2A and CPM1A PLCs; 8 inputs and 8 outputs	U, C, CE

## Position Drivers

Model	Specifications	Standard
FND-X06H-SRT	200-VAC input, momentary maximum output current: 6.0 A	U, cUL, CE
FND-X12H-SRT	200-VAC input, momentary maximum output current: 12 A	
FND-X25H-SRT	200-VAC input, momentary maximum output current: 25 A	
FND-X50-SRT	200-VAC input, momentary maximum output current: 50 A	
FND-X06L-SRT	100-VAC input, momentary maximum output current: 6.0 A	
FND-X12L-SRT	100-VAC input, momentary maximum output current: 12 A	

- U: UL, cUL: Canada UL, C: CSA, N: NK, L: LLOYD, CE: EC Directives  
See OMRON sales representatives for conditions under which UL, cUL, CSA, NK, LLOYD, and CE standards were met.

**Note:** For details regarding CompoBus/S, refer to the *CompoBus/S Catalog*. (Catalog number: Q103-E1-□)

# Standard Models

## ■ Connection Devices

### Communications Cables

Model	Specifications	Standard
Commercially available	VCTF cable (JIS C3306), 0.75 mm <sup>2</sup> x 2 conductors	---
SCA1-4F10	Special Flat Cable, 100 m, 0.75 mm <sup>2</sup> x 4 conductors	

### Specified Communications Cables


Model	Manufacturer	Comments	Standard
#9409	Belden	USA manufacturer	---

**Note:** The electrical characteristics of the above cable are the same as those of the following: VCTF cable (JIS C3306), 0.75 mm<sup>2</sup> x 2 conductors. It can thus be used with the same specifications as the VCTF cable listed above.

### Connectors and Terminal Blocks

Model	Name	Comments	Standard
SCN1-TH4	Branch Crimp Connector	Connector used to branch from the main line. Can be used only on the Special Flat Cable.	---
SCN1-TH4E	Extension Crimp Connector	Used to extend the Special Flat Cable.	
SCN1-TH4T	Terminating Resistor Crimp Connector	A connector equipped with terminating resistance. Can be used only on the Special Flat Cable.	
SRT1-T	Terminal-block Terminator	A terminal block equipped with terminating resistance. Can be used either on the Special Flat Cable or VCTF cable.	

### SRM1 RS-232C Port Connecting Cable

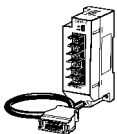
Model	Name	Specifications	Standard
 CQM1-CIF02	Peripheral Port Conversion Cable	For connecting IBM PC/AT compatible computers. (Cable length: 3.3 m)	U, C, CE, N, L

● U: UL, cUL: Canada UL, C: CSA, N: NK, L: LLOYD, CE: EC Directives  
See OMRON sales representatives for conditions under which UL, cUL, CSA, NK, LLOYD, and CE standards were met.

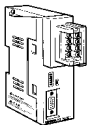


# Standard Models

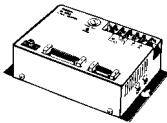
## RS-422 Adapter

Model	Name	Specifications	Standard
 CPM1-CIF11	RS-422 Adapter	For level conversion between the Peripheral Port and RS-422	CE, N, L

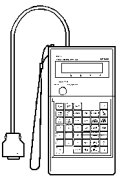


## Link Adapters

Model	Name	Specifications	Standard
 NT-AL001	Link Adapter	One RS-232C connector and one RS-422 terminal block. Power supply: 5 VDC; 150 mA	---

## Link Adapter for IBM PC/AT-compatible Computers

Model	Name	Specifications	Standard
 3G2A9-AL004-E	Link Adapter	One RS-232C connector, one RS-422 connector, and one fibre-optic connector. Power supply: 100/200 VAC	---

## Peripheral Devices

Model	Name	Specifications	Standard
 CQM1-PRO01-E	CQM1 Programming Console	With cable (2 m)	U, C, CE, N
	C200H-PRO27-E	C200H Programming Console	Hand-held, with backlight; requires the C200H-CN222 or C200H-CN422, see below.
	C200H-CN222	C200H-PRO27-E Connecting Cable	Cable length: 2 m
	C200H-CN422		Cable length: 4 m
	C200H-ATT01	Mounting Bracket	For panel mounting.
	C500-ZL3AT1-E	SYSMAC Support Software	3.5", 2HD for IBM PC/AT compatible

## Programming Device

Model	Name	Function
WS02-CXPC1-EV2	CX-Programmer (Windows 95/98/NT) (Compatible with versions 2.0 or later.)	CD-ROM (English)

● U: UL, cUL: Canada UL, C: CSA, N: NK, L: LLOYD, CE: EC Directives  
See OMRON sales representatives for conditions under which UL, cUL, CSA, NK, LLOYD, and CE standards were met.

## ■ 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, wir-

# Standard Models

ing, 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.

## ■ Connections to a Wider Range of Slaves Ensured by Upgraded Models

				Master	Conventional models	New models	
Slave					C200HW-SRM21 CQM1-SRM21 SRM1-C01 SRM1-C02 SRM1-C01-V1 SRM1-C02-V1 3G8B3-SRM00 3G8B3-SRM01 C200PC-ISA02-SRM C200PC-ISA12-SRM	C200HW-SRM21-V1 CQM1-SRM21-V1 SRM1-C01-V2 SRM1-C02-V2 TP1000-A-SRM C200C-ISA03-SRM C200PC-ISA13-SRM	
					NKE-made Uniwire CompoBus/S Send Unit SDD-CS1	Communications mode	
						High-speed communications mode	Long-distance communications mode
SRT1 Series				Yes	Yes	Yes	No
FND-X□-SRT				Yes	Yes	Yes	No
Products from other companies	SMC	Solenoid valve for SI manifold use	VQ Series SX Series SY Series	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes
	CKD	Solenoid valve for saving wiring effort	4TB1 and 4TB2 Series 4TB3 and 4TB4 Series 4G Series MN4SO Series	Yes Yes Yes Yes	Yes Yes Yes Yes	Yes Yes Yes Yes	No No Yes No
	Koganei	Valve for saving wiring effort	YS1A1, A2 YS2A1, A2	Yes Yes	Yes Yes	Yes Yes	No No
Existing products				SRT2-AD04	No	Yes	Yes
				SRT2-DA02	No	Yes	Yes
				SRT2-VID08S(-1)	Yes	Yes	Yes
				SRT2-VOD08S(-1)	Yes	Yes	Yes
				SRT2-VID16ML(-1)	Yes	Yes	Yes
				SRT2-VOD16ML(-1)	Yes	Yes	Yes
				SRT2-ID16(-1)	Yes	Yes	Yes
				SRT2-OD16(-1)	Yes	Yes	Yes
				SRT2-ID08(-1)	Yes	Yes	Yes
				SRT2-OD08(-1)	Yes	Yes	Yes
				SRT2-ROC16	Yes	Yes	Yes
				SRT2-ROF16	Yes	Yes	Yes
				CPM1A-SRT21	Yes	Yes	Yes
				SRT2-ID04(-1)	Yes	Yes	Yes
				SRT2-OD04(-1)	Yes	Yes	Yes
				SRT2-ID16T(-1)	Yes	Yes	Yes
				SRT2-OD16T(-1)	Yes	Yes	Yes
				SRT2-MD16T(-1)	Yes	Yes	Yes
				SRT2-ROC08	Yes	Yes	Yes
				SRT2-ROF08	Yes	Yes	Yes
New products				CPM2C-SRT21	Yes	Yes	Yes
				SRT2-ID32ML (-1)	Yes	Yes	Yes
				SRT2-OD32ML (-1)	Yes	Yes	Yes
				SRT2-MD32ML (-1)	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.

# Notes

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