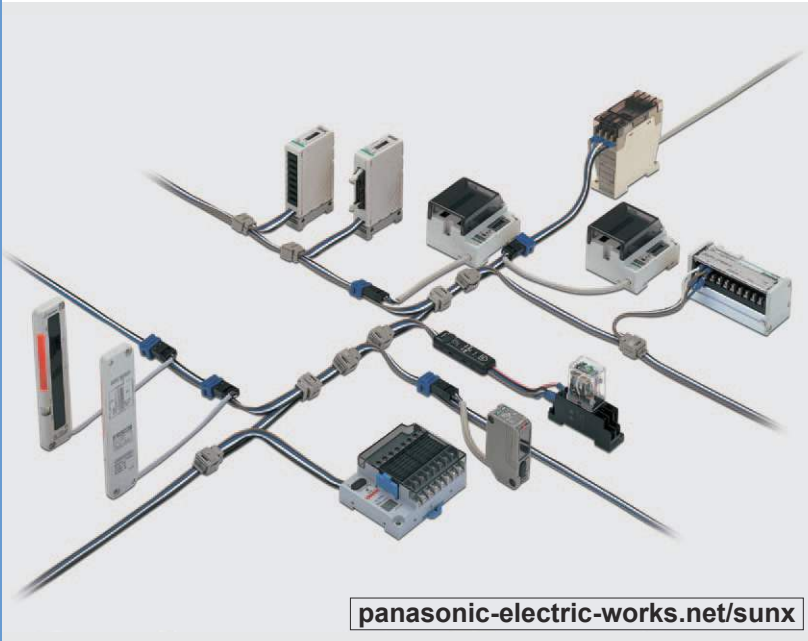


S-LINK

Related Information ■ General terms and conditions..... F-17



panasonic-electric-works.net/sunx

This product is introduced to only limited countries. Please contact our office for details.

S-LINK transmits 128 points on two signal lines, and “T”-branch multi-drop system enabling flexible cable layout

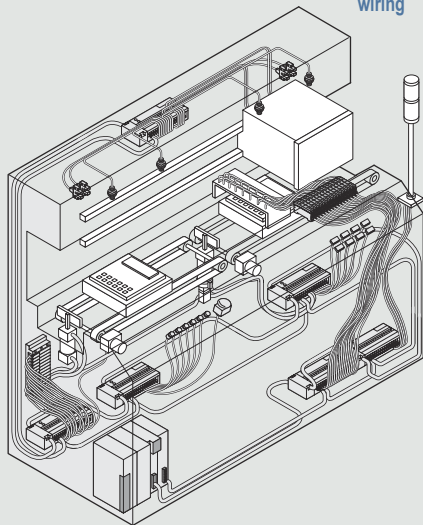
We've realized a wire-saving system that's easy to use

Remote I/O

Just with the wire-saving between the PLC and the sub-stations, you'll be able to save a mountain of I/O device connection wires.



The remote I/O is one-dimensional wiring

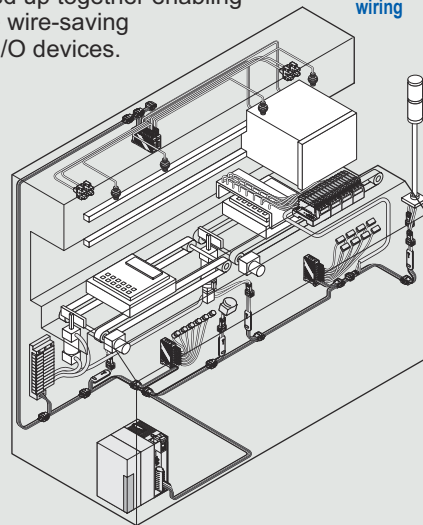


S-LINK

Allows for great wire-saving for all connections. Installation is made easy with no faulty wiring. The power supply line can also be wired up together enabling true wire-saving for I/O devices.



The S-LINK is two-dimensional wiring



Transmission distance:
 200 m **656.168 ft** (400 m **1312.336 ft** when using booster)
 Total wiring length:
 400 m **1312.336 ft** (800 m **2624.672 ft** when using one booster)
 Connectable I/O: 128 points
 (The maximum number of sub-stations which can be connected: 128 nodes)

- FIBER SENSORS
- LASER SENSORS
- PHOTOELECTRIC SENSORS
- MICRO PHOTOELECTRIC SENSORS
- AREA SENSORS
- LIGHT CURTAINS
- PRESSURE / FLOW SENSORS
- INDUCTIVE PROXIMITY SENSORS
- PARTICULAR USE SENSORS
- SENSOR OPTIONS
- SIMPLE WIRE-SAVING UNITS
- WIRE-SAVING SYSTEMS**
- MEASUREMENT SENSORS
- STATIC CONTROL DEVICES
- ENDOSCOPE
- LASER MARKERS
- PLC / TERMINALS
- HUMAN MACHINE INTERFACES
- ENERGY CONSUMPTION VISUALIZATION COMPONENTS
- FA COMPONENTS
- MACHINE VISION SYSTEMS
- UV CURING SYSTEMS

For Large Scale Systems
 For Medium Scale Systems

S-LINK

High noise immunity

Large voltage amplitude (24 V) and wide pulse width (35 μ s) signal transmissions make for units less prone to impulse noise effects with no code errors. This high level of noise proofing enables them to be used even in worksites with conventional, high-priced optical communication remote I/O units.

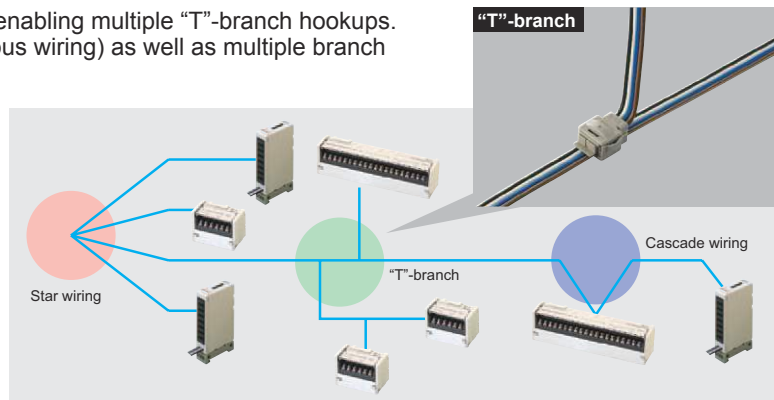
Specifies malfunctioning S-LINK I/O devices

In the event that verification cannot be obtained from an **S-LINK** I/O unit, such as if the main cable is cutoff, the address of the particular unverifiable **S-LINK** I/O unit is specified and displayed allowing equipment recovery time to be greatly reduced.



Alleviates the burden laid on engineer for designing and wiring

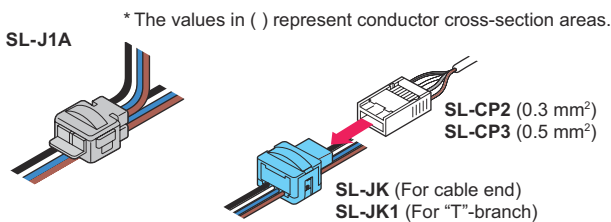
Labor-saving hook-up connectors are used enabling multiple "T"-branch hookups. It goes without saying that cascade wiring (bus wiring) as well as multiple branch wiring (star wiring) is also possible.



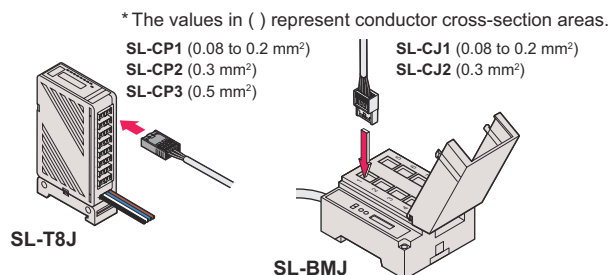
Simple and reliable connections

We've provided all types of hook-up connectors. Connections from **S-LINK** I/O devices to the main cable and from sensors and other devices to **S-LINK** I/O devices are all realized with one-touch hook-up connectors. They can be connected anywhere quickly and maintenance is easy.

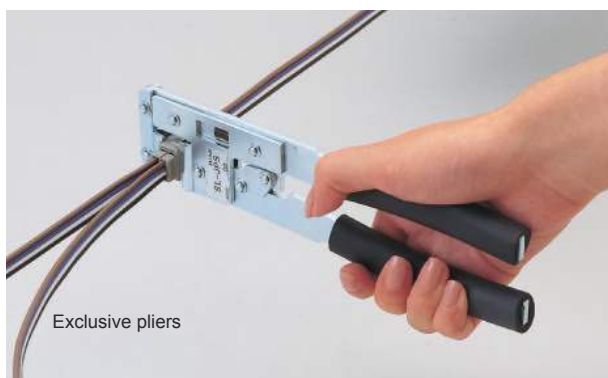
Branch cable to main cable connection and S-LINK I/O device to main cable connection



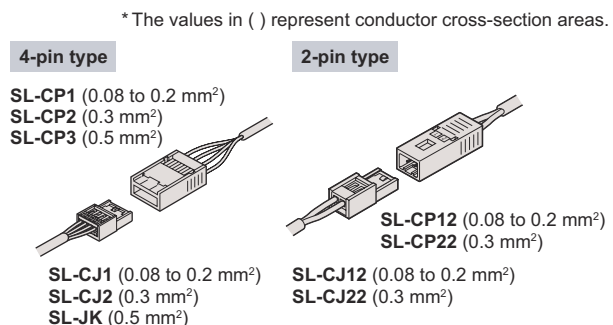
Connection from various connected units to S-LINK I/O devices



In addition, to enhance the reliability of the crimping, **S-LINK** exclusive pliers are made available so that anyone can do it with ease.



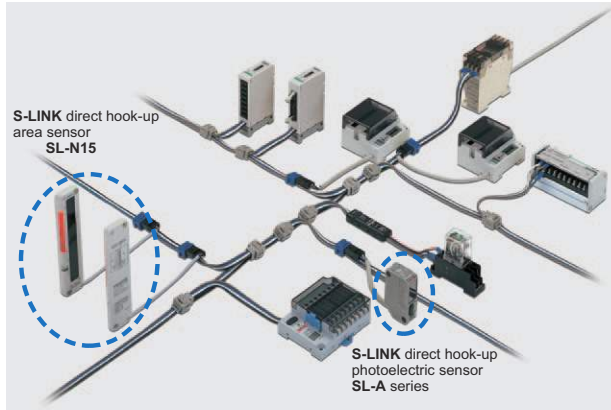
Connected device extensions



- FIBER SENSORS
- LASER SENSORS
- PHOTOELECTRIC SENSORS
- MICRO PHOTOELECTRIC SENSORS
- AREA SENSORS
- LIGHT CURTAINS
- PRESSURE / FLOW SENSORS
- INDUCTIVE PROXIMITY SENSORS
- PARTICULAR USE SENSORS
- SENSOR OPTIONS
- SIMPLE WIRE-SAVING UNITS
- WIRE-SAVING SYSTEMS
- MEASUREMENT SENSORS
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- ENDOSCOPE
- LASER MARKERS
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- HUMAN MACHINE INTERFACES
- ENERGY CONSUMPTION VISUALIZATION COMPONENTS
- FA COMPONENTS
- MACHINE VISION SYSTEMS
- UV CURING SYSTEMS
- For Large Scale Systems
- For Medium Scale Systems
- S-LINK**

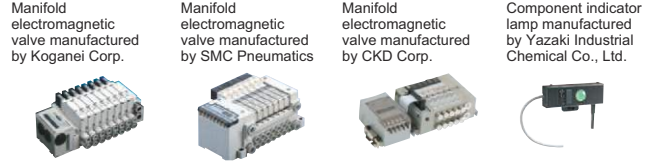
- FIBER SENSORS
- LASER SENSORS
- PHOTOELECTRIC SENSORS
- MICRO PHOTOELECTRIC SENSORS
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- S-LINK**

Direct main cable connecting of sensors and actuators possible



All types of transmission line direct-connecting type sensors are made available. Even partner makers are putting on the market manifold electromagnetic valves and limit switches that can be directly connected with the **S-LINK** system making wire-saving and labor-saving a reality.

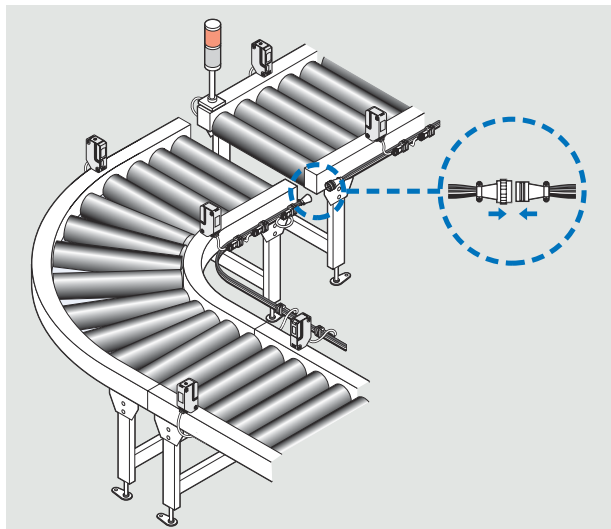
Items offered by partner makers



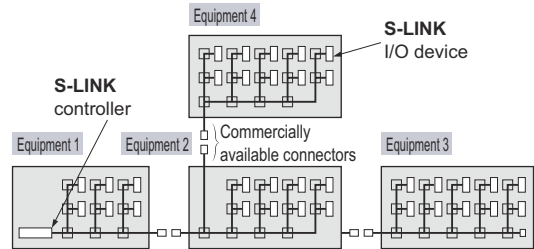
Mid-system main / branch cable installation and removal possible

For conveyors or other large scale equipment, transport can also be done after dividing the whole into units of several meters in length right at the factory. Then, reassembly and wiring can be effectuated onsite afterwards. Because the **S-LINK** can be easily divided even from mid-system main / branch cables with the help of commercially available connectors and terminals, the segmented equipment can be wired up prior to transport. Once onsite, assembly work is all but complete with just the connecting of the individual units to each other.

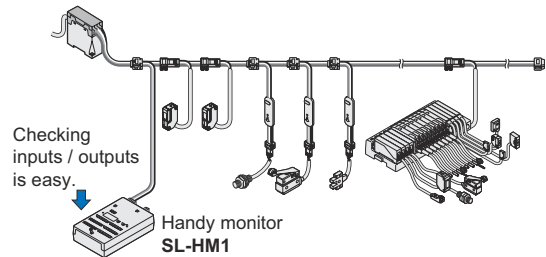
In addition, when assembling the equipment, the **S-LINK** can work even disconnected from the PLC enabling software (PLC programming) and hardware (machine assembly, I/O check) work to be done concurrently, which results in quick delivery time. With the handy monitor, I/O devices can be checked for each piece of equipment separately enabling subcontractors to conduct check work on delivery. This results in a total delivery deadline reduction and clearly defined subcontractor responsibilities. Also, checking can be performed even without programming so you'll know immediately if malfunctions are coming from the PLC or the **S-LINK**.



Dividing equipment into subunits possible



Individual equipment subunits can be checked separately

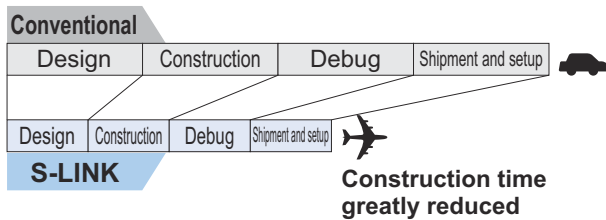


Total cost reductions and great savings in setup time

By introducing the **S-LINK**, you can reduce the total cost of system construction to one-fifth. Total costs including for materials go down dramatically and, by decreasing the workload, construction time is lessened which means you can easily meet that tough deadline.

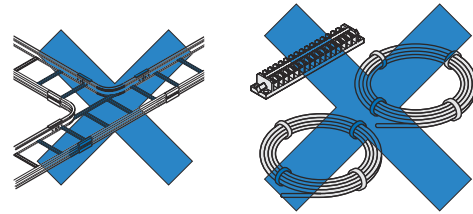
The **S-LINK** system:

- A hardware-only construction makes layout design simple
- With hook-up connectors, construction time is greatly reduced
- Layout modifications made easy
- Equipment divided into separate segments make for easy debugging
- Segmented equipment can be easily interlinked with commercially available connectors



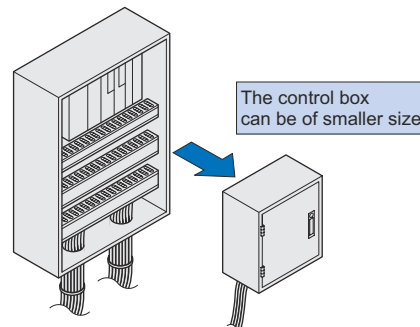
Auxiliary materials reduced

Great reductions in auxiliary materials such as cable racks, cable ducts, intermediate terminal blocks, and cables. This system also contributes greatly to the reduction waste caused by cutting cable ends.



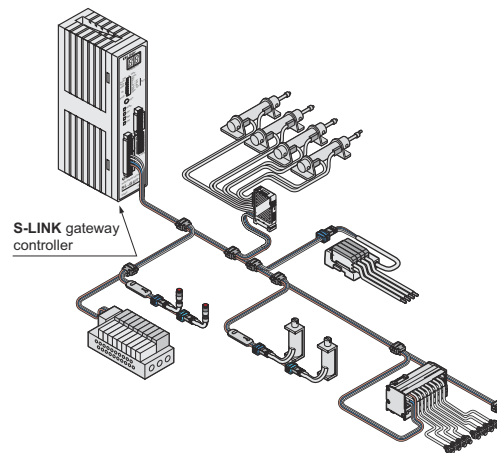
Space-saving

Because of great reductions in the amount of intermediate terminal blocks and cables needed, you can save space and minimize the size of your control board and machines. This will finally let you put all that wasted space to good use.



Upper-level network connection possible

Because it can be connected to any main open network, long-distance and multi-point transmission networks can be constructed enabling a greatly enhanced network upgrade. Also, by wiring up scattered bit-oriented I/O devices that include mostly connected sensors and switches, an efficient wire-saving layout can be realized. If exporting equipment that was setup with any open network, it can be made to correspond to different networks just by installing an **S-LINK** gateway controller with the entire **S-LINK** system left as it is.



FIBER SENSORS

LASER SENSORS

PHOTOELECTRIC SENSORS

MICRO PHOTOELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL DEVICES

ENDOSCOPE

LASER MARKERS

PLC / TERMINALS

HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

For Large Scale Systems

For Medium Scale Systems

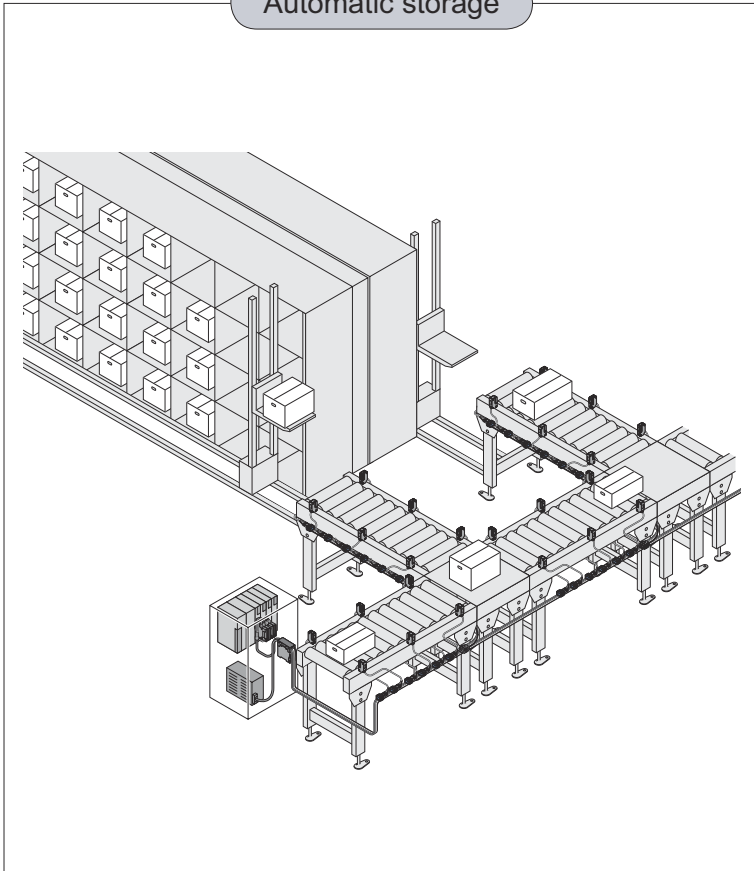
S-LINK

- FIBER SENSORS
- LASER SENSORS
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APPLICATIONS

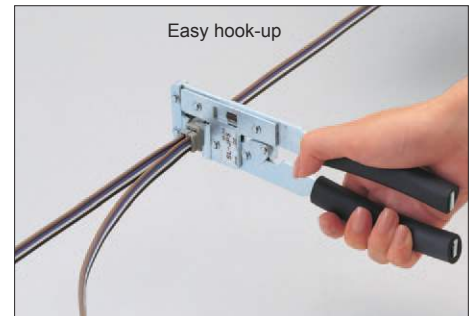
Distributed installation

Automatic storage

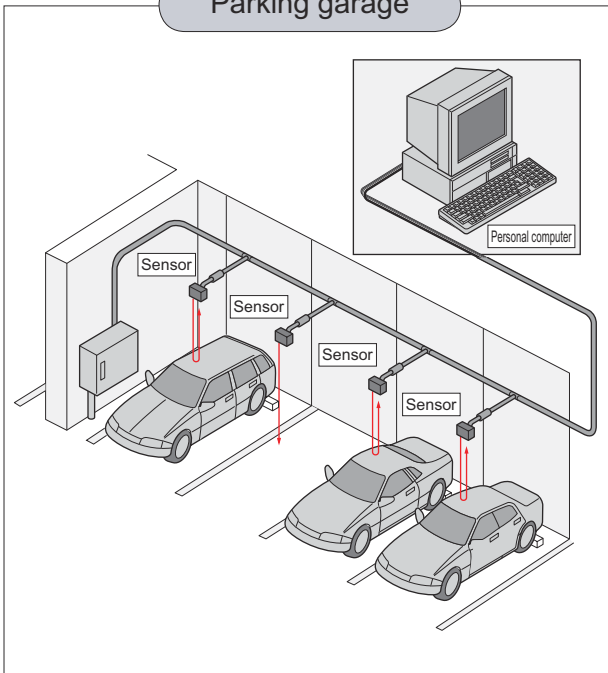


Because conveyors have multiple I/O device points, wire-saving and construction efficiency are the key to lowering overall costs. Other systems may be wire-saving but if they can't prove useful for long-distance distribution lines and be reliable, then they are useless. On this point, the **S-LINK** system offers a total wiring length of 400 m **1312 ft**, 800 m **2625 ft** when using booster, with reliable T-branch I/O device connections that can be mounted in any desired location.

Because T-branching renders layout designing simple, not only is it a wire-saving and construction efficient system, but you can even save time in the actual design stage. In addition, you can divide main and branch cables in mid-system with commercially available connectors and terminals so the time it takes to setup your conveyor decreases greatly.

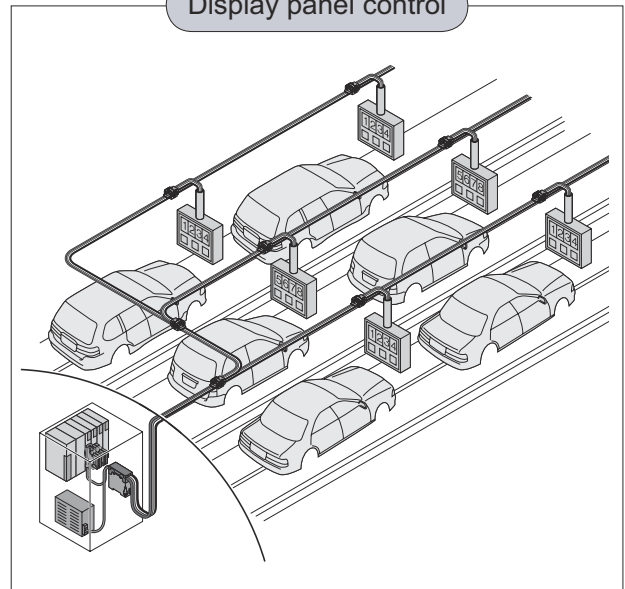


Parking garage



The **S-LINK** system is very suitable to wire up car detection sensors in a large parking garage. It reduces wires and installation time.

Display panel control



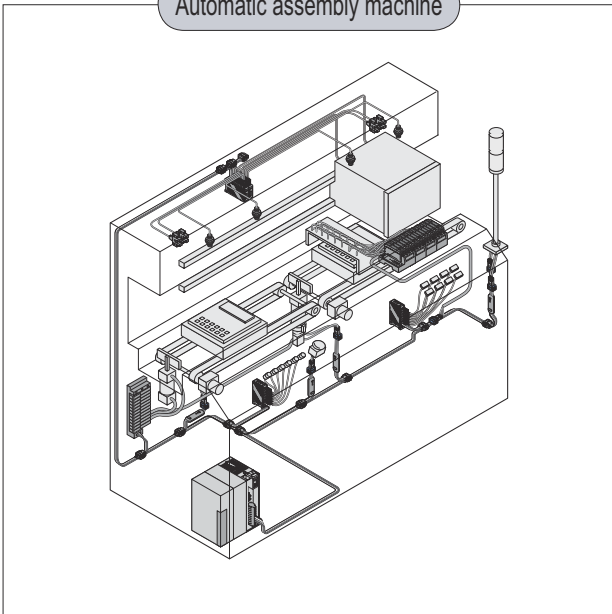
Display equipment can be mounted in automobile production lines to notify operators when malfunctions occur or just to keep a reliable count of units in each line.

Because each type of display equipment shows variegated data, they necessitate a great amount of wiring. This wiring must be conducted in very large factories requiring a substantial amount of cables and wires. A wire-saving system in this situation would be most effective.

Using the **S-LINK** system means that even display equipment can be wired up with just one flat cable, and clearing up all the bulky wiring inside the display panels themselves and realizing great material cost savings as well as a reduced workload.

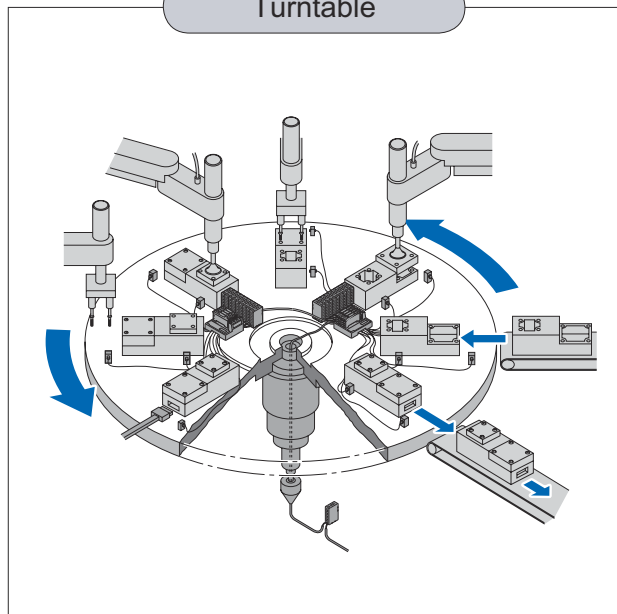
APPLICATIONS**Integrated installation**

Automatic assembly machine



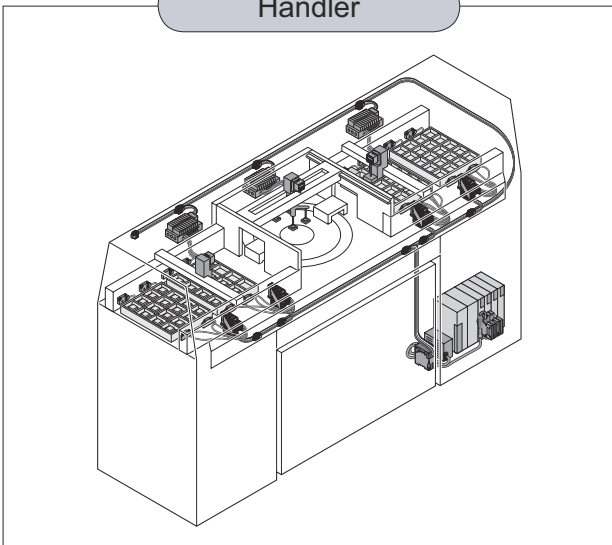
The wire-saving system is being greatly emphasized even for assembly lines crowded with multiple I/O devices. Also, to enhance productivity, using a wire-saving system is the key to reliability and avoiding the occurrence of troubles. In the **S-LINK** loop wiring, the system maintains signal transmission even when the loop may break at any one place. Also, the controller displays disconnected unit address. Further, when excess current flows or short-circuit occurs in the signal transmission lines, the signal transmission is stopped to protect the system. **S-LINK** is a wire-saving system optimal for the automatic assembly machinery.

Turntable



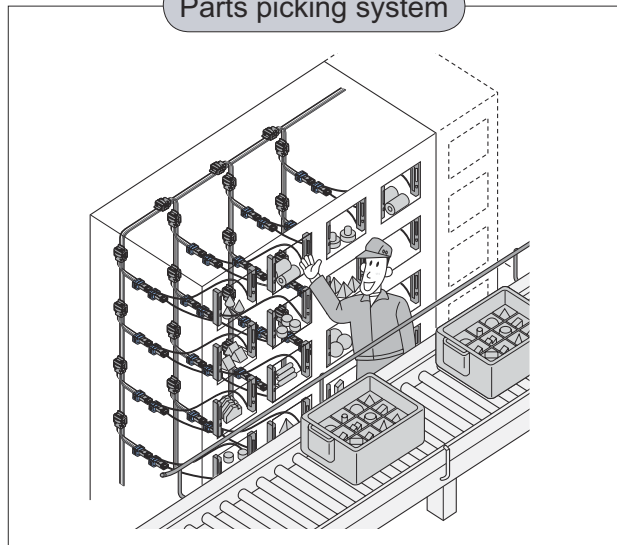
The wiring of I/O devices mounted on a rotating board (turntable) used to be quite a difficult task. Because a slip ring with the same number of terminals as wires had to be used. Therefore, there have been difficulties such as employing a large slip ring or reduction of I/O point count. **S-LINK** enables the connection of up to 128 I/O points on a 4-pole slip ring. A compact slip ring can be used without worrying about I/O points.

Handler



"The handler" as the IC test equipment uses multiple sensors. Cost reduction or downsizing depends on how to reduce these wires and to save space. **S-LINK** realizes wire-saving and space-saving; hence these problems are solved all at once.

Parts picking system



Many small picking sensors are employed in the parts picking system in order to verify the correct selection of components. The number of input points is required as much as the number of shelves, the number of output points is also required to be the same in adopting the operational indicators. **S-LINK** system greatly contributes to wire-saving both in I/O points and in space. Also, extra shelves can be added easily.

FIBER SENSORS

LASER SENSORS

PHOTOELECTRIC SENSORS

MICRO PHOTOELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS

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SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

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STATIC CONTROL DEVICES

ENDOSCOPE

LASER MARKERS

PLC / TERMINALS

HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

For Large Scale Systems

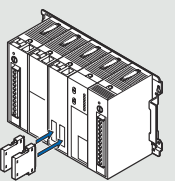
For Medium Scale Systems

S-LINK

SYSTEM LAYOUT

Upper-level control devices

PLC



S-LINK control components

PLC I/O connectors (for connectable PLC) **SL-S□, SL-P□**

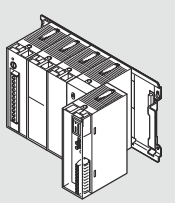
Multi-core cable PLC I/O units (for screw-on terminal type PLC) **SL-S, SL-SP, SL-P, SL-PP**

S-LINK controller SL-CU1A

Booster SL-BS1A



PLC (Direct connection to PLC bus)



S-LINK controller for direct connection to PLC bus / S-LINK control boards

FPΣ S-LINK unit FPG-SL

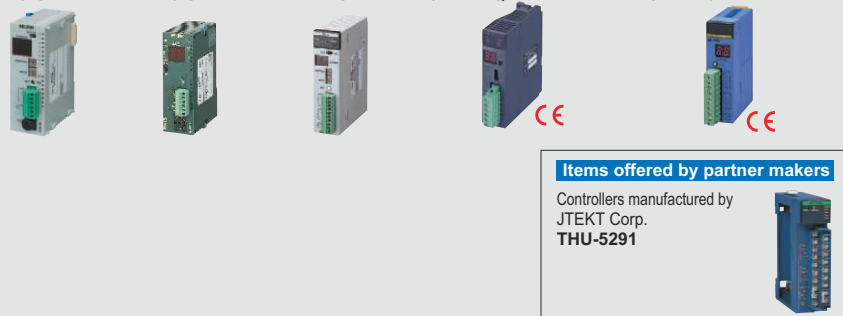
FP0 S-LINK Control unit FP0-SL1

FP2SH S-LINK unit FP2-SL2

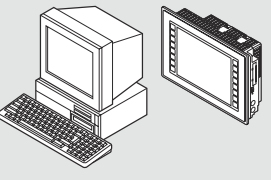
For Mitsubishi Electric Corp. PLC MELSEC-Q series **SL-MEL-Q**

For Yokogawa Electric Corp. PLC FA-M3 series **SL-FAM3**

Items offered by partner makers
 Controllers manufactured by JTEKT Corp. **THU-5291**




Personal computers

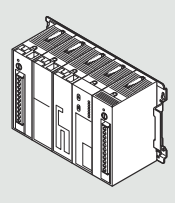


For ISA bus **SL-PCAT**

For PC/104 bus **SL-PC104**



Open network compatible PLC



For CC-Link **SL-GU1-C**

For Device Net **SL-GU1-D**



- FIBER SENSORS
- LASER SENSORS
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- S-LINK**



SYSTEM LAYOUT

S-LINK I/O devices

Analog I/O arrayed terminal unit
SL-TBAD4, SL-TBDA1



CE 4 inputs
1 output

1 • 2 channel I/O unit
SL-CH□(-PN)



CE

8 channel snap-connector I/O unit
SL-T8J(-PN), SL-TP8J(-PN)



CE

For e-con 8 channel snap-connector I/O unit
SL-T8E(-PN), SL-TP8E(-PN)



CE

16 channel MIL connector I/O unit
SL-T16C1(-PN), SL-TP16C1(-PN)



CE

8-branch connector tap
SL-T8PW



CE

I/O arrayed terminal unit
**SL-TB□(-PN), SL-TBP□(-PN)
SL-TBP□-TY**



CE 4, 8 or 16 inputs
4, 8 or 16 outputs

Relay output terminal unit
SL-TPR4, SL-TPR8



Snap-connector sensor block
SL-BMJ, SL-BXJ



Plug-in unit sensor block
SL-BM, SL-BX



CE

S-LINK direct hook-up
photoelectric sensor
SL-A□



S-LINK direct hook-up
picking sensor
SL-N15



CE

Items offered by partner makers

Manifold electromagnetic valve
manufactured by Koganei Corp.



Manifold electromagnetic valve
manufactured by SMC Pneumatics



Manifold electromagnetic valve
manufactured by CKD Corp.



Component indicator lamp
manufactured by Yazaki
Industrial Chemical Co., Ltd.



FIBER
SENSORS

LASER
SENSORS

PHOTOELECTRIC
SENSORS

MICRO
PHOTOELECTRIC
SENSORS

AREA
SENSORS

LIGHT
CURTAINS

PRESSURE /
FLOW
SENSORS

INDUCTIVE
PROXIMITY
SENSORS

PARTICULAR
USE SENSORS

SENSOR
OPTIONS

SIMPLE
WIRE-SAVING
UNITS

WIRE-SAVING
SYSTEMS

MEASUREMENT
SENSORS

STATIC CONTROL
DEVICES

ENDOSCOPE

LASER
MARKERS

PLC /
TERMINALS

HUMAN MACHINE
INTERFACES

ENERGY CONSUMPTION
VISUALIZATION
COMPONENTS

FA COMPONENTS

MACHINE VISION
SYSTEMS

UV CURING
SYSTEMS

For Large
Scale Systems

For Medium
Scale Systems

S-LINK

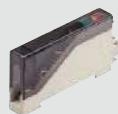
Plug-in units (for SL-BM, SL-BX)

Amplifier-separated
photoelectric sensor
SU-7J



CE

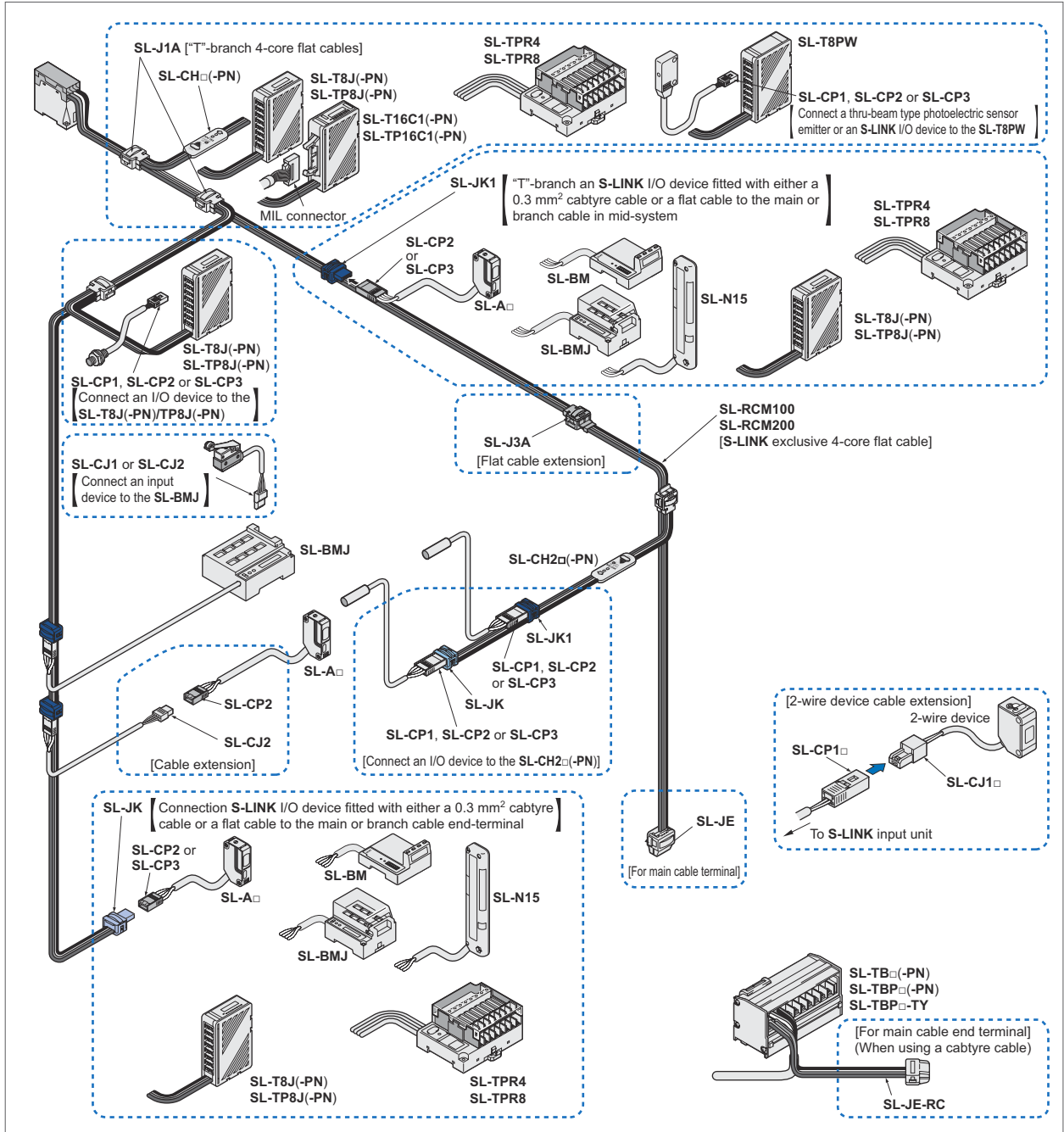
Input terminal unit
SL-TJ1



CE

SYSTEM LAYOUT

Connectors and cables



Other S-LINK devices









I/O modules
SL-M□, SL-M□F
 8 or 16 inputs
 8 or 16 outputs
 4 inputs and 4 outputs

Handy monitor
SL-HM1



- FIBER SENSORS
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- MICRO PHOTOELECTRIC SENSORS
- AREA SENSORS
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- FA COMPONENTS
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ORDER GUIDE**S-LINK control units**

Designation	Appearance (Note)	Model No.	Description
S-LINK controller	 CE	SL-CU1A	It supplies the synchronization signal to the complete system to send and receive I/O data from external devices correctly. It also monitors the signal transmission line, and specifies the addresses of the disconnected devices if the line breaks, etc.
FPΣ S-LINK unit		FPG-SL (AFP780)	It controls the S-LINK system by directly connecting to the FPΣ series.
FP0 S-LINK Control unit		FP0-SL1 (AFP02700)	It controls the S-LINK system by directly connecting to the FP0 series.
FP2SH S-LINK unit		FP2-SL2 (AFP2780)	It controls the S-LINK system by directly connecting to the FP2SH series.
Mitsubishi Electric PLC bus S-LINK controller	 CE	SL-MEL-Q	It can be directly connected to the bus line of the MELSEC-Q series PLC manufactured by Mitsubishi Electric Corp. (Has S-LINK controller as well as PLC input and output connector functions so you don't have to prepare for these items. Also, it doesn't need a PLC input or output module.)
Yokogawa Electric PLC bus S-LINK controller	 CE	SL-FAM3	It can be directly connected to the bus line of the FA-M3 series PLC manufactured by Yokogawa Electric Corp. (Has S-LINK controller as well as PLC input and output connector functions so you don't have to prepare for these items. Also, it doesn't need a PLC input or output module.)
PC/AT S-LINK control board	 CE	SL-PCAT	It can be fitted into the expansion slot (ISA bus) of PC/AT series or compatible to control the S-LINK system. (Has S-LINK controller as well as PLC input and output connector functions so you don't have to prepare for these items.)
PC/104 bus S-LINK control board	 CE	SL-PC104	Controls the S-LINK system by directly coupling (stack) the PC/104 bus line to a PC/104 bus compatible PC board or panel computer. (Has S-LINK controller as well as PLC input and output connector functions so you don't have to prepare for these items.)

Note: Components with "CE" mark conform to the CE marking EMC Directive.

The following condition must be met to conform to EN 61000-6-2.

• **Conditions**

- ① Cable length between the main power supply and the **S-LINK** control unit should be less than 10 m **32.808 ft**.
- ② When the power is supplied from **S-LINK** control unit to **S-LINK** I/O devices at a cable distance of more than 10 m **32.808 ft** add a surge absorber between 24 V and 0 V at a cable distance of less than 10 m **32.808 ft**, or use a local power supply at a cable distance of less than 10 m **32.808 ft** from each **S-LINK** I/O device.

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Products for open network

Designation	Appearance (Note)	Model No.	Description
S-LINK gateway controller for CC-Link	 CE	SL-GU1-C	S-LINK gateway controller for connection to open network CC-Link, promoted by Mitsubishi Electric Corp.
S-LINK gateway controller for DeviceNet	 CE	SL-GU1-D	S-LINK gateway controller for connection to open network DeviceNet.

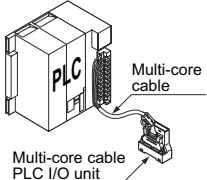
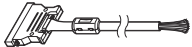
Note: Components with “**CE**” mark conform to the CE marking EMC Directive.

The following condition must be met to conform to EN 61000-6-2.

• **Conditions**

- ① Cable length between the main power supply and the **S-LINK** control unit should be less than 10 m **32.808 ft**.
- ② When the power is supplied from **S-LINK** control unit to **S-LINK** I/O devices at a cable distance of more than 10 m **32.808 ft** add a surge absorber between 24 V and 0 V at a cable distance of less than 10 m **32.808 ft**, or use a local power supply at a cable distance of less than 10 m **32.808 ft** from each **S-LINK** I/O device.

PLC related units

Designation	Appearance (Note 1)	Model No.		Description
		For input	For output	
Multi-core cable PLC I/O unit		SL-S	SL-P	This is the Multi-core cable PLC I/O unit for connecting the screw-on terminal type PLC with the S-LINK system. Interfaces I/O data between the S-LINK controller and PLC. It includes the I/O data conversion circuit for serial to parallel or parallel to serial conversion. I/O points: 32 points per unit. Connection to screw-on terminal type PLC is by an optional multi-core cable attached with an MIL connector on one end.
		SL-SP	SL-PP	
Multi-core cable		SL-L2000F		Length: 2 m 6.562 ft The multi-core cable attached with an MIL connector on one end links the multi-core cable PLC I/O unit to a screw-on terminal type PLC I/O module.


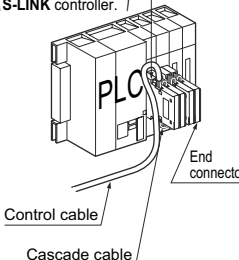
Notes: 1) Components with “**CE**” mark conform to the CE marking EMC Directive.

However, note that for the multi-core cable PLC I/O units to conform to CE marking EMC Directive, it is necessary to use cascade cable **SL-F70**, **SL-F150** or **SL-F250**, control cable **SL-C2000F** and multi-core cable **SL-L2000F**.

- 2) In case the output circuit of the PLC output module contains capacitive components for improving the noise characteristics, since it is possible that the multi-core cable PLC output units **SL-P**, **SL-PP** may not be able to receive the signal correctly, please use output modules which have an output circuit capacitance of 0.01 μF or less.
- 3) Since the multi-core cable PLC output units **SL-P**, **SL-PP** are high input impedance, time division input type devices, please use PLC output modules whose output circuit can operate at a load current of even 0.1 mA.

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PLC related units

Designation	Appearance (Note 1)	Model No.		Description			
		For input	For output	Manufacturer	PLC	PLC input module (Note 4)	PLC output module (Note 4)
PLC input connector PLC output connector End connector Cascade cable Control cable	<p>Fujitsu Component connector specs. MIL connector specs.</p>  <p>PLC input connectors PLC output connectors (same shape) (Note 2)</p> <p>The listed PLC I/O modules (NPN I/O type) allow the mating PLC I/O connector to be plugged on them for signal transmission between the PLC and the S-LINK controller.</p> <p>(The PLC I/O connector converts I/O data from serial to parallel, and vice versa. I/O points: 32 points per connector)</p> <p>Max. four PLC I/O connectors can be cascaded with one S-LINK controller.</p> 	SL-S1	SL-P1	Panasonic Electric Works SUNX Co., Ltd. Toshiba Machine Co., Ltd.	FPΣ (Excluding the FPG-C32T) FP2 TC200	FPG-XY64D2T (X side) FPG-XY64D2T (Y side) FP2-X32D2 FP2-Y32T TC64DI TC64DON	FPG-XY64D2T (Y side) FP2-Y32T TC64DON
		SL-S2	SL-P2	Fuji Electric FA Components & Systems Co., Ltd.	NS series F55 F70	NS-X64-1 NS-XY64-1 (X side) NS-XY64-1 (Y side) NV1X3204 NV1X3204-W NV1X3206 NC1X3204 NC1X3204-3 NC1X3206 NC1X6404 NC1X6406 NC1W6406T (X side)	NS-Y64-T1 NS-XY64-1 (Y side) NV1Y32T05P1 NC1Y32T05P1 NC1Y64T05P1-1 NC1W6406T (Y side)
		SL-S3	SL-P3	Fuji Electric FA Components & Systems Co., Ltd. Mitsubishi Electric Corp.	SX series SPH AnS AnN, AnA AnU, QnA QnAs Q A2CJ	NP1X3206-W NP1X6406-W A1SX41 A1SX42 A1SH42 (X side) AX42 AH42 (X side) QX41, QX42 AJ35TC1-32D	NP1Y32T09P1 NP1Y64T09P1 A1SY41 A1SY42 A1SH42 (Y side) AY42 AH42 (Y side) QY41P, QY42P AJ35TC1-32T
		SL-S4	SL-P4	Sharp Manufacturing Systems Corp.	JW20, JW20H JW30H JW50H	JW-234N JW-264N JW-34NC JW-64NC	JW-232S JW-262S JW-32SC JW-62SC
		SL-S5	SL-P5	Omron Corp.	CJ1 CS1 CVM1, CV C500 C1000H C2000H C200H series CQM1	CJ1W-ID231 CJ1W-ID261 CJ1W-MD261 (X side) CS1W-ID231 CS1W-ID261 CS1W-MD261 (X side) C500-ID219 C200H-ID216 C200H-ID217 CQM1-ID213 CQM1-ID213	CJ1W-OD231 CJ1W-OD261 CJ1W-MD261 (Y side) CS1W-OD231 CS1W-OD261 CS1W-MD261 (Y side) C500-OD213 C200H-OD218 C200H-OD219 CQM1-OD213
		SL-S6	SL-P6	Hitachi Ltd.	EH-150	EH-XD32	EH-YT32
		SL-S7	—	Yasukawa Electric Corp.	GL20, GL40S GL60S, GL60H GL70H	—	B2604
		SL-E	—	Hitachi Ltd.	H series	XDC24D2H	YTR24DH
		SL-F70	—	Yasukawa Electric Corp.	GL20, GL40S GL60S, GL60H GL70H	B2605	—
		SL-F150	—	—	—	—	—
		SL-F250	—	—	—	—	—
		SL-F1000	—	—	—	—	—
		SL-C1000	—	—	—	—	—
		SL-C2000	—	—	—	—	—
		SL-C5000	—	—	—	—	—
SL-C2000F	—	—	—	—	—		

- Notes: 1) Components with "CE" mark conform to the CE marking EMC Directive.
 However, note that for the PLC I/O connectors to conform to CE marking EMC Directive, it is necessary to use cascade cable **SL-F70**, **SL-F150** or **SL-F250** and control cable **SL-C2000F**.
- 2) The PLC I/O connectors use Fujitsu connectors. However, **SL-S1**, **SL-S6**, **SL-P1** and **SL-P6** connectors use MIL connectors.
- 3) PLC I/O connectors are connectable to **S-LINK** controller **SL-CU1A** only.
- 4) X side and Y side indicate the input and the output connectors, respectively, of the compound input / output module.









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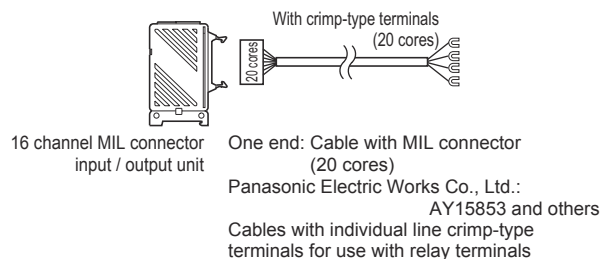
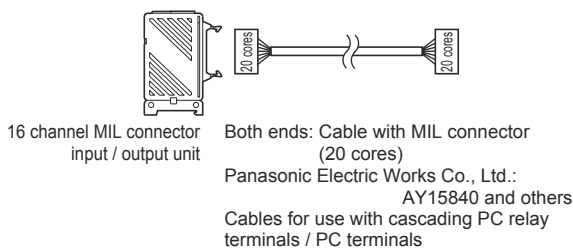
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S-LINK I/O devices



Designation	Appearance (Note 1)	Model No.		Description
1 channel I/O unit		SL-CH1	NPN type	It can be used as either an input unit or an output unit by switch selection. Signals, such as from the sensor and limit switch, can be transmitted by the signal transmission line. These signals from the signal transmission line can turn ON / OFF the transistor output.
		SL-CH1-PN	PNP type	
2 channel I/O mixed unit		SL-CH21	NPN type	1 input and 1 output are equipped. 1 input device and 1 output device are connectable.
		SL-CH21-PN	PNP type	
2 channel input unit		SL-CH20	NPN type	2 input devices are connectable.
		SL-CH20-PN	PNP type	
2 channel output unit		SL-CH22	NPN type	2 output devices are connectable.
		SL-CH22-PN	PNP type	
Connector I/O unit		SL-T8J	8 NPN inputs	8 input or 8 output devices are connectable with snap male connectors. The output unit is incorporated with an output signal hold function, which retains the output state just prior to an error on the signal transmission line.
		SL-T8J-PN	8 PNP inputs	
		SL-TP8J	8 NPN outputs	
		SL-TP8J-PN	8 PNP outputs	
Connector I/O unit		SL-T16C1	16 NPN inputs	Since connection can be made with an MIL connector, 16 input or 16 output devices can be connected to this slim I/O unit. The output unit is incorporated with an output signal hold function, which retains the output state just prior to an error on the signal transmission line.
		SL-T16C1-PN	16 PNP inputs	
		SL-TP16C1	16 NPN outputs	
		SL-TP16C1-PN	16 PNP outputs	
Connector I/O unit		SL-T8E	8 NPN inputs	Up to 8 input or output devices can be easily connected via e-CON. Also, when there is an abnormality in the signal communication line, the output status just before the abnormality can be preserved since the output unit is equipped with an output hold function. *For the connector, please separately purchase a commercial product which supports e-CON standards.
		SL-T8E-PN	8 PNP inputs	
		SL-TP8E	8 NPN outputs	
		SL-TP8E-PN	8 PNP outputs	
Analog I/O arrayed terminal unit		SL-TBAD4	4 inputs	This is an analog input terminal unit which can connect 4 devices having an analog output. Since power supply terminals have been provided for each input channel, neat wiring is possible.
		SL-TBDA1	1 output	

Notes: 1) Components with "CE" mark conform to the CE marking EMC Directive.
2) It is convenient to use a MIL connector cable made by Panasonic Electric Works Co., Ltd. when connecting to a device. Connect the 20-core connector side to a 16 channel unit when using it. Contact our office for details.



16 channel MIL connector input / output unit give support for the Panasonic Electric Works Co., Ltd. MIL connector relay terminal pin arrangement. Contact our office for details.

ORDER GUIDE**S-LINK I/O devices**

Designation		Appearance (Note 1)	Model No.	Description			
I/O arrayed terminal unit	Input terminal		SL-TB4	4 NPN inputs	They are screw-on terminal units to which 4, 8 or 16 input devices are connectable. Since power supply terminals have been provided for every two input channel, neat wiring is possible.		
			SL-TB4-PN	4 PNP inputs			
			SL-TB8	8 NPN inputs			
			SL-TB8-PN	8 PNP inputs			
			SL-TB16	16 NPN inputs			
			SL-TB16-PN	16 PNP inputs			
	Output terminal		SL-TBP4	4 NPN outputs	They are screw-on terminal units to which 4, 8 or 16 output devices are connectable. The output unit is incorporated with an output signal hold function, which retains the output state just prior to an error on the signal transmission line.		
			SL-TBP4-PN	4 PNP outputs			
			SL-TBP8	8 NPN outputs			
			SL-TBP8-PN	8 PNP outputs			
			SL-TBP16	16 NPN outputs			
			SL-TBP16-PN	16 PNP outputs			
			Separate load power supply type	SL-TBP4-TY		4 NPN outputs	In the case that a malfunction occurs to the output device that is being connected, they enable forced turning OFF of the output device connected to the output terminal without halting the complete S-LINK system, by switching off the load power supply.
				SL-TBP8-TY		8 NPN outputs	
SL-TBP16-TY	16 NPN outputs						
Relay output terminal unit	4 relay output		SL-TPR4	4 outputs (Note 2)	They are terminal units to which 4 or 8 output devices can be connected by slim socket relays that can be easily replaced. They are incorporated with an output signal hold function which retains the output state just prior to an error on the signal transmission line.		
	8 relay output		SL-TPR8	8 outputs (Note 2)			

Notes: 1) Components with “**CE**” mark conform to the CE marking EMC Directive.

2) Relay output is “Contact a” only. Further, when replacing the relay, use PA relay (APA3312) manufactured by Panasonic Electric Works Co., Ltd.

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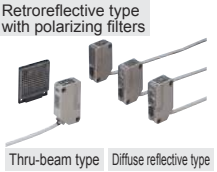

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









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S-LINK I/O devices

Designation	Appearance (Note)	Model No.	Description	
Sensor block	Snap-connector	Sensor main block	 SL-BMJ	It allows connection of various kinds of input devices, such as, photoelectric sensors, inductive proximity sensors, limit switches, and push buttons with the snap female connectors. Changes signals from input devices into serial signals and transmits them to the signal transmission line. One SL-BMJ can be extended by one SL-BXJ or two SL-BXs , up to 16 input points. (It can generate the ORed self-diagnosis output of all the connected devices.) (In this case, the first channel gets occupied.)
		Extension block	 SL-BXJ	It can follow either main block, and allows connection of 8 input devices.
	For plug-in unit	Sensor main block	 SL-BM	It allows connection of various kinds of plug-in units and changes signals from plug-in units into serial signals and transmits them to the signal transmission line. One SL-BM can be extended by three SL-BXs or one SL-BX plus one SL-BXJ , up to 16 input points. (It can generate the ORed self-diagnosis output of all connected units. In this) case, the first channel gets occupied.)
		Extension block	 SL-BX	It can follow either main block, and allows connection of four plug-in units.
Plug-in unit	Amplifier-separated photoelectric sensor	 SU-7J	Its thickness is merely 10 mm 0.394 in . The sensitivity is automatically set with ease. 12 kinds of sensor heads are suitable with it. (For details, refer to the SU-7/SH series pages.)	
	Input terminal unit	 SL-TJ1	It allows connection of 1 No. of various kinds of input devices, such as, a photoelectric sensor, an inductive proximity sensor or a limit switch.	
S-LINK direct hook-up photoelectric sensor	 Retroreflective type with polarizing filters Thru-beam type Diffuse reflective type	SL-A11	Thru-beam type 10 m 32.808 ft	These can be hooked up to the S-LINK cable, at any place, without any interface.
		SL-A13	Thru-beam type 30 m 98.425 ft	
		SL-A19	Retroreflective type with polarizing filters 0.1 to 5 m 0.328 to 16.404 ft	
		SL-A12	Diffuse reflective type 700 mm 27.559 in	
S-LINK direct hook-up picking sensor	 SL-N15	Sensing range: 0.2 to 3 m 0.656 to 9.843 ft (0.05 to 1 m 0.164 to 3.281 ft) (when the switch is set to SHORT) Beam pitch: 25 mm 0.984 in Sensing height: 100 mm 3.937 in Sensing object: ø35 mm ø1.378 in or more opaque object	It is a parts-taking verification sensor with five sensing beams and can be hooked up to the S-LINK cable without any interface. Both the emitter and the receiver are incorporated with bright orange LED job indicators that are easily visible to the operator.	

Note: Components with "CE" mark conform to the CE marking EMC Directive.

ORDER GUIDE**Connectors**

Designation	Appearance	Model No.	Description
Hook-up connector	 (Note)	SL-J1A 10 pcs. per set	It creates a "T"-branch connection between two S-LINK exclusive flat cables (4-core). For 0.5 mm ² flat cable to 0.5 mm ² flat cable connection (Gray) Applicable hook-up pliers: SL-JPS, SL-JPD
Cable extension hook-up connector	 (Note)	SL-J3A 10 pcs. per set	It can extend the S-LINK exclusive flat cable (4-core). For 0.5 mm ² flat cable to 0.5 mm ² flat cable connection (Black) Applicable hook-up pliers: SL-JPS, SL-JPD
End hook-up connector	 (Note)	SL-JE 5 pcs. per set	It must be connected at the end of the main cable. For 0.5 mm ² flat cable (Gray) Applicable hook-up pliers: SL-JPS, SL-JPD
Cable attached end connector	 (Note)	SL-JE-RC 1 pc.	When cabtyre cable is used as the main cable, it must be connected at the end of the main cable.
Cable end socket-branch hook-up connector	 (Note)	SL-JK 10 pcs. per set	It enables one I/O device to be connected at the S-LINK exclusive 0.5 mm ² flat cable (4-core) end with the snap male connector (SL-CP□). (Light blue) Applicable hook-up pliers: SL-JPS, SL-JPD
"T"-branch hook-up connector	 (Note)	SL-JK1 10 pcs. per set	It enables one I/O device to be branched off in the middle of the S-LINK exclusive 0.5 mm ² flat cable (4-core) with the snap male connector (SL-CP□). (Blue) Applicable hook-up pliers: SL-JPS, SL-JPD
4-pin type snap female connector	 (Note)	SL-CJ1 (White) 10 pcs. per set	This snap female connector is used for plugging into the socket of SL-BMJ or SL-BXJ to connect an input device, or into the snap male connector SL-CP1 or SL-CP2 . Applicable hook-up pliers: SL-JPC
	 (Note)	SL-CJ2 (Black) 10 pcs. per set	
4-pin type snap male connector	 (Note)	SL-CP1 (White) 10 pcs. per set	This snap male connector is used for connecting S-LINK I/O devices to SL-T8J(-PN) and SL-TP8J(-PN) 8-channel snap-connector I/O units as well as to SL-JK and SL-JK1 hook-up connectors. Applicable hook-up pliers: SL-JPC (for the SL-CP1 and SL-CP2) SL-JPE (for the SL-CP3)
	 (Note)	SL-CP2 (Black) 10 pcs. per set	
	 (Note)	SL-CP3 (Greenish blue) 10 pcs. per set	

Note: For UL compatibility, please contact our office.

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FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

LIGHT CURTAINS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL DEVICES

ENDOSCOPE

LASER MARKERS

PLC / TERMINALS

HUMAN MACHINE INTERFACES

ENERGY CONSUMPTION VISUALIZATION COMPONENTS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS



For Large Scale Systems

For Medium Scale Systems



S-LINK

ORDER GUIDE

Basic units






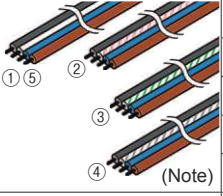
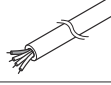
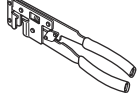
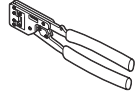
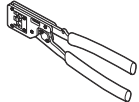
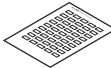
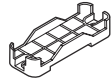
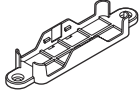
Designation		Appearance	Model No.	Description
I/O module	Vertical type		SL-M8	8 inputs
			SL-M16	16 inputs
			SL-M4P4	4 inputs and 4 outputs
			SL-MP8	8 outputs
	Horizontal type		SL-M8F	8 inputs
			SL-M16F	16 inputs
			SL-M4P4F	4 inputs and 4 outputs
			SL-MP8F	8 outputs
			SL-MP16F	16 outputs
These are IC type modules which enable external connection of address setting switches and operation indicators. They increase the design flexibility.				

Optional units

Designation	Appearance	Model No.	Description
Booster		SL-BS1A	It can extend the signal transmission distance by 200 m 656.168 ft. A maximum of seven boosters can be connected for one S-LINK control unit. However, one booster can never be followed by another booster in series.
Handy monitor		SL-HM1	It can be connected at any place on the signal transmission line and the I/O states can be checked in batches of 16. The handy monitor is also incorporated with the S-LINK control functions, so that, for example, it can perform an I/O check on conveyor system segments, still under assembly, even without the S-LINK controller.

Note: Components with "CE" mark conform to the CE marking EMC Directive.

ORDER GUIDE**Others**

Designation	Appearance	Model No.	Description	
8-branch connector tap		SL-T8PW	Connects easily to up to 8 thru-beam type photoelectric sensor emitters or S-LINK I/O devices with snap male connectors.	
2-pin type snap female connector	 (Note)	SL-CJ12 (White) 10 pcs. per set	For 0.08 to 0.2 mm ² (Conductor cross-section area) Wire dia.: $\varnothing 0.7$ to $\varnothing 1.2$ mm $\varnothing 0.028$ to $\varnothing 0.047$ in	It can be used for cable extension of 2-wire I/O devices by combining with a 2-pin type snap male connector SL-CP \square 2. Applicable hook-up pliers: SL-JPC
	 (Note)	SL-CJ22 (Black) 10 pcs. per set	For 0.3 mm ² (Conductor cross-section area) Wire dia.: $\varnothing 1.1$ to $\varnothing 1.6$ mm $\varnothing 0.043$ to $\varnothing 0.063$ in	
2-pin type snap male connector	 (Note)	SL-CP12 (White) 10 pcs. per set	For 0.08 to 0.2 mm ² (Conductor cross-section area) Wire dia.: $\varnothing 0.7$ to $\varnothing 1.2$ mm $\varnothing 0.028$ to $\varnothing 0.047$ in	It can be used for cable extension of 2-wire I/O devices by combining with a 2-pin type snap female connector SL-CJ \square 2. Applicable hook-up pliers: SL-JPC
	 (Note)	SL-CP22 (Black) 10 pcs. per set	For 0.3 mm ² (Conductor cross-section area) Wire dia.: $\varnothing 1.1$ to $\varnothing 1.6$ mm $\varnothing 0.043$ to $\varnothing 0.063$ in	
Exclusive flat cable (4-core)	 (Note)	SL-RCM100	D line: White ①	S-LINK / S-LINK V exclusive flat cable (4-core) Conductor cross-section area: 0.5 mm ² Outer diameter: $\varnothing 2.5$ mm $\varnothing 0.098$ in $\times 4$
		SL-RCM100-PK	D line: White with pink stripe ②	
		SL-RCM100-GN	D line: White with green stripe ③	
		SL-RCM100-GY	D line: White with gray stripe ④	
		SL-RCM200	Length: 200 m 656.168 ft , D line: White ⑤	
Exclusive cabtyre cable (4-core)		SL-CBM100	Length: 100 m 328.084 ft	S-LINK / S-LINK V exclusive cabtyre cable (4-core) Conductor cross-section area: 0.5 mm ² Outer diameter: $\varnothing 7.4$ mm $\varnothing 0.291$ in (Hook-up connector cannot be used)
		SL-CBM200	Length: 200 m 656.168 ft	
Exclusive pliers		SL-JPS	Hook-up connector (SL-J \square) can be connected in one grip.	
SL-CP3 exclusive pliers		SL-JPE	4-pin type snap male connector (SL-CP3) can be connected in one grip.	
Male / female connector exclusive pliers		SL-JPC	Snap female connector (SL-CJ1/CJ2 , SL-CJ11/CJ12) and snap male connector (SL-CP1/CP2 , SL-CP11/CP12) can be connected in one grip.	
Address label		SL-MA1-SET 4 sheets. per set	By sticking the labels on the respective S-LINK devices, the set addresses can be confirmed at one glance. SL-MA1-SET is available in white, pink, green and gray colors, as a 4-sheet set, and is convenient when used by matching the color with that of the S-LINK exclusive flat cable (100 m 328.084 ft type).	
DIN rail mounting bracket for SL-CH \square		MS-CH\times10 10 pcs. per set	Mounting bracket enabling the SL-CH \square (-PN) I/O units to be mounted onto a 35 mm 1.378 in width DIN rail. They can also be affixed with screws. (When affixing with screws, arrange two M4 pan-head screws separately.)	
I/O unit holder for SL-CH \square		MS-SLH 5 pcs. per set	It is used to mount the SL-CH \square (-PN) unit. (Please arrange two M4 pan-head screws separately.)	

Note: For UL compatibility, please contact our office.

FIBER
SENSORSLASER
SENSORSPHOTO-
ELECTRIC
SENSORSMICRO
PHOTO-
ELECTRIC
SENSORSAREA
SENSORSLIGHT
CURTAINSPRESSURE /
FLOW
SENSORSINDUCTIVE
PROXIMITY
SENSORSPARTICULAR
USE
SENSORSSENSOR
OPTIONSSIMPLE
WIRE-SAVING
UNITSWIRE-SAVING
SYSTEMSMEASURE-
MENT
SENSORSSTATIC
CONTROL
DEVICES

ENDOSCOPE

LASER
MARKERSPLC /
TERMINALSHUMAN
MACHINE
INTERFACESENERGY
CONSUMPTION
VISUALIZATION
COMPONENTSFA
COMPONENTSMACHINE
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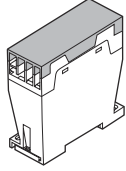
S-LINK

ORDER GUIDE

Accessories

• **NPS-CV**

(Protective cover for the **SL-CU1A**, **SL-BS1A** or **SL-CU1-485**)



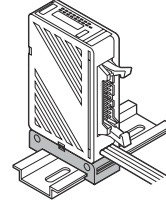
• **RF-230**

(Reflector for the **SL-A19**)



• **MS-SL-2**

(Mounting base for connector I/O units)

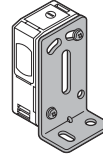


OPTIONS

Designation	Model No.	Description
Sensor mounting bracket for SL-A □	MS-NX5-1	Foot angled mounting bracket (The thru-beam type sensor needs two brackets.)
	MS-NX5-2	Foot biangled mounting bracket (sensor protection bracket) (The thru-beam type sensor needs two brackets.)
	MS-NX5-3	Back angled mounting bracket (The thru-beam type sensor needs two brackets.)
Sensor mounting bracket for SL-N15	MS-NA1-1	Four bracket set Four M4 (length 15 mm 0.591 in) screws with washers, eight nuts, four hooks, four spacers and eight M4 (length 18 mm 0.709 in) screws with washers are attached. (Spacers are not attached with MS-NA1-1 .)
	MS-NA2-1	
Sensor protection bracket for SL-N15	MS-NA3	It protects the sensor body. Two bracket set (Silver) Four M4 (length 15 mm 0.591 in) screws with washers, and four nuts are attached.
	MS-NA3-BK	It protects the sensor body. Two bracket set (Black) Four M4 (length 15 mm 0.591 in) screws with washers, and four nuts are attached.
Reflector mounting bracket	MS-RF23	Reflector mounting bracket for RF-230
Slit mask for SL-N15	OS-NA1-5 10 sheets. per set	The seal type slit mask restrains the amount of beam emitted or received. (Take care that the sensing range will be reduced when the slit mask is used.)
Connector I/O unit mounting bracket, 8-branch connector tap mounting bracket	MS-DIN-3	It is a DIN rail mounting bracket which can be fitted on the mounting base of SL-T8J , SL-TP8J , SL-T16C1 , SL-TP16C1 and SL-T8PW .
DIN rail adapter	MS-DIN-IDC	This adapter is used when mounting the SL-GU1 □ to the 35 mm 1.378 in width DIN rail.

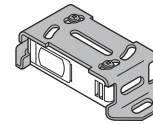
Sensor mounting bracket for **SL-A**□

• **MS-NX5-1**



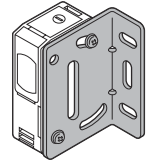
Two M4 (length 25 mm 0.984 in) screws with washers and two M4 nuts are attached.

• **MS-NX5-2**



Two M4 (length 25 mm 0.984 in) screws with washers and two M4 nuts are attached.

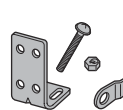
• **MS-NX5-3**



Two M4 (length 25 mm 0.984 in) screws with washers and two M4 nuts are attached.

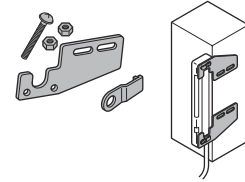
Sensor mounting bracket for **SL-N15**

• **MS-NA1-1**



M4 screws with washers, nuts and hooks are attached.

• **MS-NA2-1**

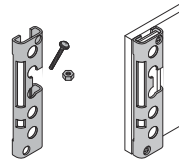


M4 screws with washers, nuts, hooks and spacers are attached.

Sensor protection bracket for **SL-N15**

• **MS-NA3**

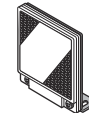
• **MS-NA3-BK**



M4 screws with washers and nuts are attached.

Reflector mounting bracket

• **MS-RF23**

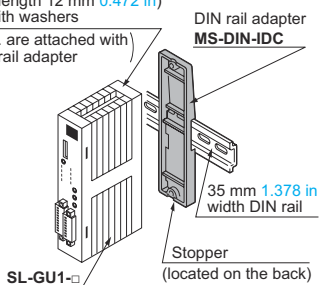


Two M4 (length 10 mm 0.394 in) screws with washers are attached.

DIN rail adapter

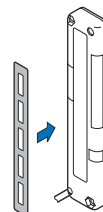
• **MS-DIN-IDC**

Two M4 (length 12 mm 0.472 in) screws with washers
(Two pcs. are attached with the DIN rail adapter)



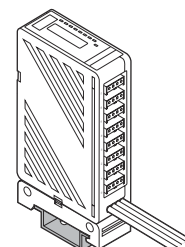
Slit mask for **SL-N15**

• **OS-NA1-5**



Connector I/O unit mounting bracket, 8-branch connector tap mounting bracket

• **MS-DIN-3**



PRECAUTIONS FOR PROPER USE



- Never use this product in a device for personal protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.
- Handle safety related or emergency stop signals without passing them through the **S-LINK** system due to fail-safe considerations.
- Before touching this product, remove any electrostatic charge that may be present on your body. There is a danger of this product getting damaged due to the electrostatic charge.

The sensor & wire-saving link system **S-LINK** are not mutually interchangeable with the flexible wire-saving system **S-LINK V** and cannot be mixed or matched. Please exercise caution.

Nevertheless, any of the exclusive 4-core flat cable, connectors, hook-up pliers, or **SL-T8PW** 8-branch connector taps can be used.

Information about S-LINK partner makers

Refer directly to our partner makers for more details pertaining to the S-LINK compatible devices introduced here.

[Controllers suitable for S-LINK]

JTEKT Corp.



[S-LINK direct hook-up I/O devices]

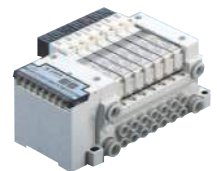
Component indicator lamp
Yazaki Industrial Chemical Co., Ltd.



Manifold electromagnetic valves
Koganei Corp.



Manifold electromagnetic valves
SMC Pneumatics



Manifold electromagnetic valves
CKD Corp.



Information about the “Design Manual” and “Construction Manual” for the S-LINK sensor & wire-saving link system

We have two manuals available with more detailed information pertaining to the S-LINK sensor & wire-saving link system. Please contact our office for details.



S-LINK Design Manual

Holds information necessary when designing the layout for the **S-LINK** system. Refer to it for specifications and for illustration showing exterior dimensions.



S-LINK Construction Manual

Holds information necessary when introducing, constructing, and activating the **S-LINK** system. Refer to it for construction or startup cautionary items.

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