

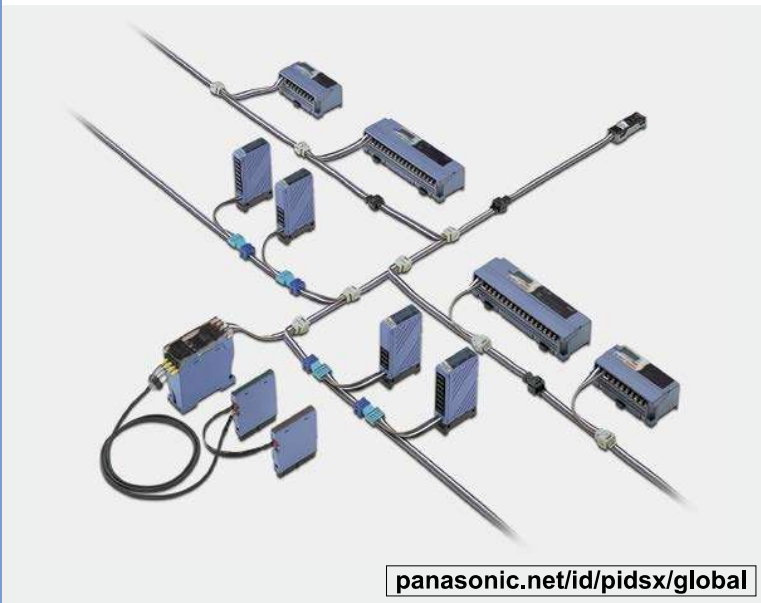
S-LINK V

Related Information

■ General terms and conditions..... F-3

■ UL P.1600

CE



panasonic.net/id/pidsx/global



- Never use this product in a device for personal protection.
- Handle safety related or emergency stop signals without passing them through the **S-LINK V** system due to fail-safe considerations.

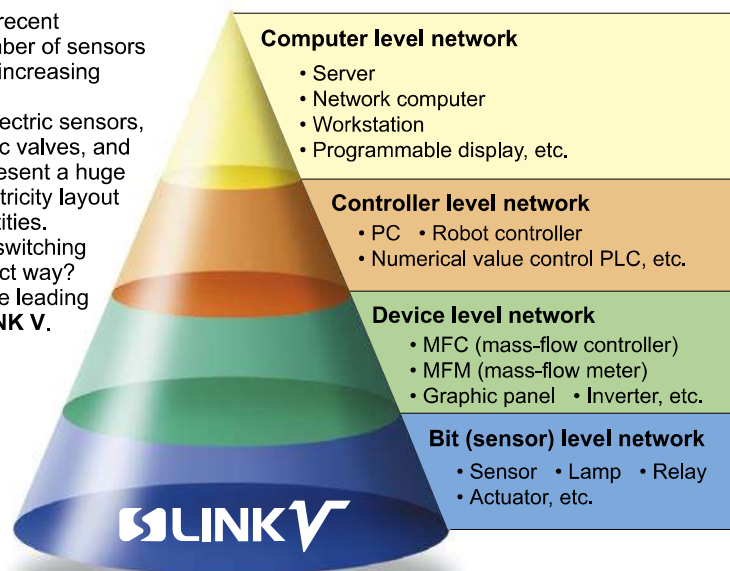
This product is introduced to only limited countries. Please contact our office for details.

Connecting to the future... our next generation wire-saving system

Ideal wire-saving system that meets the strict demands of the FA worksite

Because of the high degree of evolution of recent automation-unmanned technology, the number of sensors and actuators at work in the FA worksite is increasing evermore.

ON/OFF switching devices such as photoelectric sensors, inductive proximity sensors, electromagnetic valves, and the like, though simplistic in character, represent a huge burden on the workplace in the form of electricity layout design and wiring when used in large quantities. Can ever increasing quantities of ON/OFF switching devices be wired in a fast, easy and compact way? Panasonic Industrial Devices SUNX's as the leading FA sensor maker, has the answer the **S-LINK V**.



Design a layout with complete control and freedom

With no limit to the number of branches, layout design can be done simply without any wiring constraints thanks to the multiplication of control points (maximum of 512 points and 256 nodes, the largest in its class).

Super adaptability to the worksite

Because there are 3 different communication modes to choose from, you never have to change models even if the worksite or the equipment changes.

Truly dependable features

Simple and dependable communication protocols enable fast communication speed. We've also realized an extended communication range of 800 m **2,624 ft** maximum (when in C mode).

FIBER
SENSORS

LASER
SENSORS

PHOTOELECTRIC
SENSORS

MICRO
PHOTOELECTRIC
SENSORS

AREA
SENSORS

SAFETY LIGHT
CURTAINS /
SAFETY COMPONENTS

PRESSURE /
FLOW
SENSORS

INDUCTIVE
PROXIMITY
SENSORS

PARTICULAR
USE SENSORS

SENSOR
OPTIONS

SIMPLE
WIRE-SAVING
UNITS

WIRE-SAVING
SYSTEMS

MEASUREMENT
SENSORS

STATIC
CONTROL
DEVICES

LASER
MARKERS

PLC

HUMAN MACHINE
INTERFACES

ENERGY
MANAGEMENT
SOLUTIONS

FA COMPONENTS

MACHINE VISION
SYSTEMS

UV CURING
SYSTEMS

For Large
Scale System

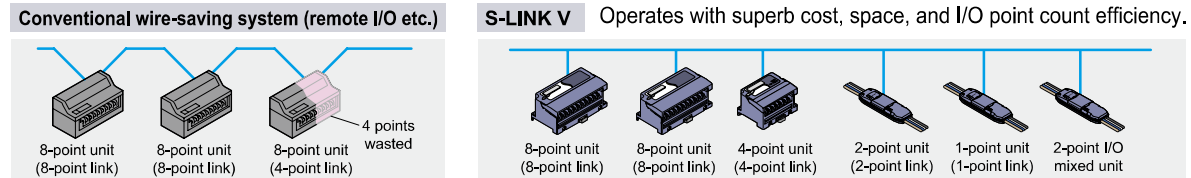
Other Products

S-LINK V

Multiplication of control points now a reality

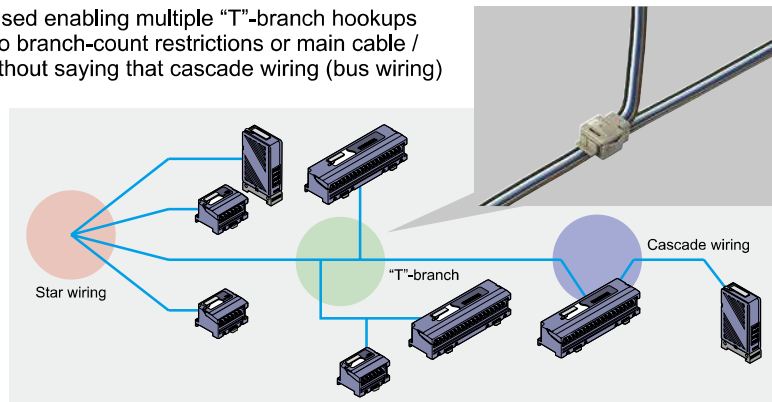
With the maximum I/O control point count is 512.

In addition, there are 256 connection nodes and, because of a variegated 1, 2, 4, 8, 16, and 32 point I/O unit lineup, you can efficiently mount up to 512 control devices to correspond to the quantity of I/O devices desired.



Alleviates the burden laid on engineer for designing and wiring

Labor-saving hook-up connectors are used enabling multiple "T"-branch hookups wherever desired. Because there are no branch-count restrictions or main cable / branch cable differentiations, it goes without saying that cascade wiring (bus wiring) as well as multiple branch wiring (star wiring) is also possible.



A bit level network without the need to specifying upper-level networks

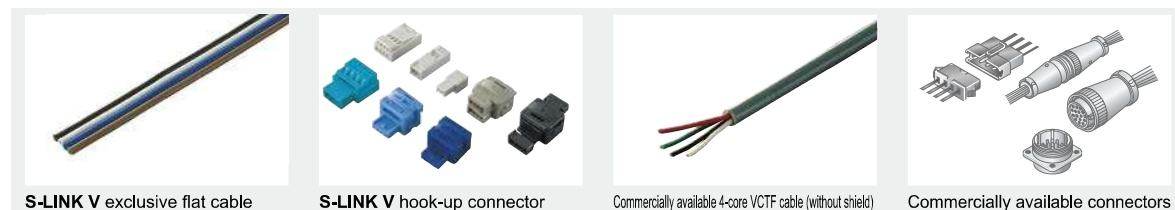
The flexible wire-saving system **S-LINK V** can be connected to various foreign or domestic PLC. Also available are a computer control board and a bus direct connection controller and controllers supporting open network and serial communications. Any upper-level network connection is possible without specifying it.

For open network	For RS-485/RS-232C	For PLC I/O connectors
<p>CC-Link DeviceNet EtherCAT</p>		
<p>S-LINK V gateway controller for open network for CC-Link SL-VGU1-C for DeviceNet SL-VGU1-D for EtherCAT SL-VGU1-EC</p>	<p>For RS-485/RS-232C S-LINK V gateway controller SL-VGU1-485</p>	<p>S-LINK V controller SL-VCU1 PLC I/O connectors SL-VSα, SL-VPα</p>
For bus direct connection		
		<p>Windows[®] 7 - compatible</p>
<p>For FP2 / FP2SH series PLC bus direct connection controller SL-VFP2</p>	<p>Mitsubishi Electric Corp. MELSEC-Q series PLC bus direct connection controller SL-VMEL-Q</p>	<p>PCI bus S-LINK V control board SL-VPCI</p>
		<p>VME bus S-LINK V control board SL-VMES2</p>

* CC-Link is a registered trademark of Mitsubishi Electric Corporation. DeviceNet is a registered trademark of ODVA (Open DeviceNet Vender Association, Inc.). EtherCAT is a registered trademark of Beckhoff Automation GmbH.

Commercially available cables and connectors can also be used

Available for the **S-LINK V** is an exclusive 4-core flat cable and exclusive hook-up connectors for your labor-saving needs. On the other hand, they are also compatible with commercially available 4-core VCTF cables (without shield) and connectors enabling hookup with the cables you have already in stock. For worksites already wired-up, new wiring work does not have to be performed making these highly efficient devices help greatly reduce material and labor costs.



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LASER MARKERS

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UV CURING SYSTEMS

For Large Scale System

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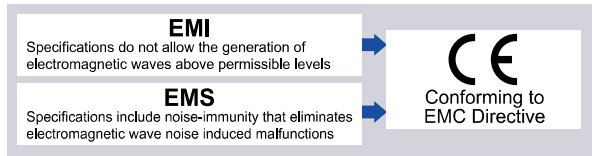
For Large Scale System
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S-LINK V

All models conform to CE marking (EMC Directive)

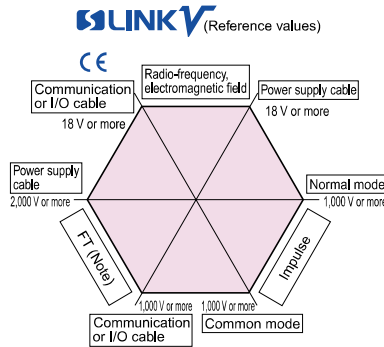
EMI standard EN 61000-6-4
EMS standard EN 61000-6-2

In noisy FA worksites, conforming to CE marking (EMC Directive) is the very least of its operating conditions. All **S-LINK V** units have withstood testing criteria that went above and beyond those reserved for field devices (sensors) that have passed the strictest of CE marking.



Superior noise-immunity performance

We've strengthened the conventional simple waveform noise resistance and enhanced reliability by eliminating the lost flexibility when setting up and the lost freedom and control when designing a layout.



Has ample resistance corresponding to every single item in the EMC noise-immunity test.

Note: FT represents first transient burst noise.

Enhanced maintainability

The system is consistently monitoring communications. In the unlikely event that a problem should arise, it lets the operators know immediately so that appropriate measures can be performed without delay. This feature enables quick and accurate troubleshooting. As error outputs for each abnormality causes can be gained, it is possible to immediately check the cause of problems in case of trouble. Replacement of input / output units due to a fault is easy with connector connection.

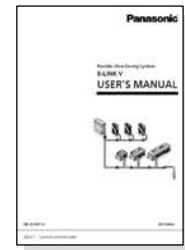
Address indicator



Errors are displayed on the address display	
Address display	Source of error
E-1	Short circuit between +24 V and D
E-2	D-G short circuit
E-3	Malfunction or disconnection in the I/O units or the PLC I/O connector verification units
E-4	Non-verification unit added
E-5	Output unit short circuit Interruption in the I/O device's startup power supply

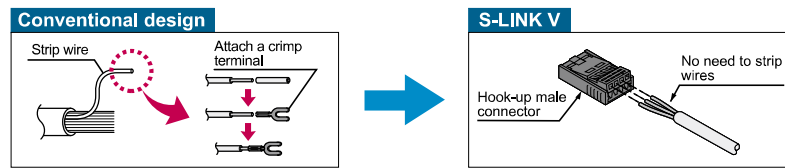
Troubleshooting according to the error number

S-LINK V user's manual is available

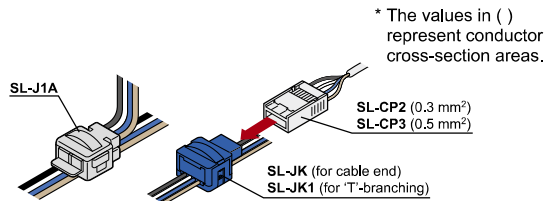


Easy and flawless connections

Every type of hook-up connector is made available enabling a one-touch connection between the **S-LINK V** I/O units and the main cable or I/O devices such as sensors.



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



Using the 4-core flat cable, one-touch branching and extensions with hook-up connectors make overwhelming labor-saving possible. Also, in order to enhance the reliability of the connection, exclusive pliers are made available so that anyone can do it with ease.



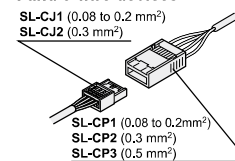
Link from connection device to S-LINK V I/O unit

Using snap connectors renders wiring even for sensors and all types of I/O devices simple and easy.

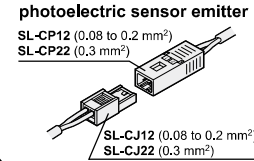


Connection device extensions

4 and 3-wire devices



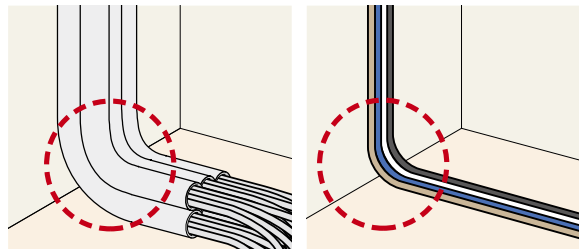
2-wire device and thru-beam type photoelectric sensor emitter



Merit of the 4-core flat cable

Easy wiring thanks to a flexible cable

The ribbon-shaped 4-core flat cables are light, flexible, don't take too much space and can be used for easy wiring in the narrow spaces inside machines, along extended production lines, etc. They can be manipulated easily for branching, extensions, and even additional wiring.

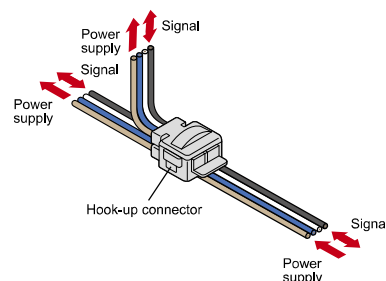


Conventional cable

4-core flat cable

Wire-saving can be achieved simultaneously

Its exclusive 4-core flat cable makeup consists of 2 signal wires (white / black) and 2 power supply wires (brown / blue). Now, only by wiring with these exclusive 4-core flat cables, power can be supplied to all I/O units scattered throughout the system as well as to every connected device.



3 different selectable communication modes

Operating only the controller, communication modes can be selected for the entire system. Thanks to the three A, B, or C selectable modes, you don't need to reconfigure or modify the controller or the I/O units depending on the communication speed or the size of your system. By selecting a communication mode corresponding to the speed and communication range, the desired communication speed/range environment can also be realized.

Main items	Comm. Mode (Note 4)	A-mode	B-mode	C-mode
Refresh time (Note 1)		1.5 ms or less (for 32 points) 3.3 ms or less (for 128 points) 10.3 ms or less (for 512 points)	6.0 ms or less (for 32 points) 13.1 ms or less (for 128 points) 41.3 ms or less (for 512 points)	24.0 ms or less (for 32 points) 52.3 ms or less (for 128 points) 165.2 ms or less (for 512 points)
Max. communication range (Note 2)		50 m 164.042 ft	200 m 656.168 ft	800 m 2624.672 ft
Total cable length		100 m 328.084 ft	400 m 1312.336 ft	1600 m 5249.344 ft
I/O control points		32 to 512 points (set in 32 point step)(Note 3)		
Number of connected nodes		Maximum 256 nodes		

Notes: 1) This value represents the maximum refresh time.

2) The maximum communication range varies depending on the cables' conductor cross-section area as well as the node count.

3) 16 units of measure settable by software in the control board (SL-VVPCI, SL-VVMS2).

4) Communication modes cannot be changed while a communication is in progress.

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For Large Scale System
Other Products

S-LINK V

Reduce the wiring of your existing system

The **S-LINK V** system can be connected to any maker's PLC. It can even be connected to PC expansion slots, open networks, etc. Because it is compatible to any controller and network, the **S-LINK V** can be introduced to variegated systems as they are already setup. Also, even when the control configuration has been changed (PLC to PC, etc.), conformance can be achieved only by changing the controllers. In this way, the **S-LINK V** is a system that allows you to utilize to the fullest your worksite's layout investment accumulated until now. Even if changing your present system for the **S-LINK V**, its features, including a reduced amount of cables, compact units, and 'T'-branching, make the addition of I/O devices as well as layout modifications simple and easy. Only by switching the controller's communication mode, you can change the entire system. Purchasing each unit that conforms to specifications or changing the layout itself is absolutely unnecessary.

High reliability for trouble-free operation

Because 4-core flat cables and hookup connectors enable the reduction of wires, the occurrence of faulty wiring or disconnections also goes down. In addition, all **S-LINK V** units conform to CE marking (EMC Directive). This certification ensures high reliability against adverse effects from noise meaning that you can use them with reassurance in the most demanding of worksites.

World-class noise-immunity performance

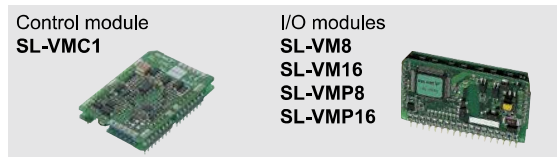


Specialized knowledge not required

Because communication occurs via hardware, program communication controls are absolutely unnecessary. Even worksites that are first-time users can put this system to work immediately after introduction.

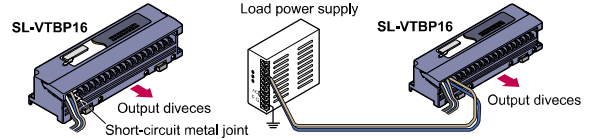
Modular design for easy customization

A control module that can control **S-LINK V** systems with custom boards and I/O modules that can connect I/O devices with custom boards are available so that you can choose the components that best suit your project's specifications.



Method of supplying power selectable

With the I/O arrayed terminal units (**SL-VTB□**, **SL-VTBP□**), the mounting or removal of short brackets enables the collective or separate supply of power from the system (**S-LINK V**) power supply and the load (I/O devices) source to be selected at will.



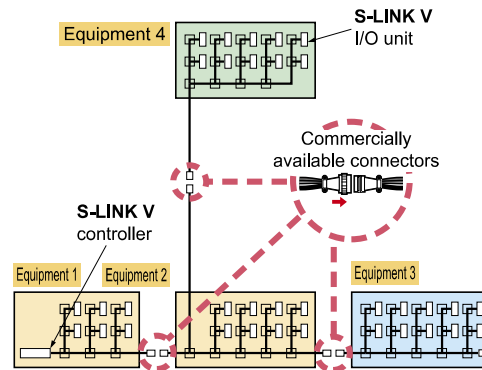
The system (**S-LINK V**) power supply and load (I/O devices) power supply can be made to supply power collectively. Therefore, electrical wiring used for the load (I/O devices) can be greatly reduced.

The system (**S-LINK V**) and load (I/O devices) power supplies can be made to supply power separately. This is not a wire-saving of power supply line method, however, the I/O devices only can be stopped without having to halt communications.

Installation and removal of mid-system communication cables possible

In case of large-scale equipment, many times we construct each unit right on site in manufacturing facilities or in subcontract factories. Because the **S-LINK V** enables the easy removal of main or branch cables even in midsystem with commercially available connectors and intermediate terminal blocks, when constructing new units, if the electric wiring is already setup, assembly can be done just by installing those units at the time of delivery and connecting the **S-LINK V** wiring.

Additionally, the ability to use the handy monitor **SL-VHM1** to check electrical wiring on a unit-by-unit basis improves productivity while facilitating the clear division of responsibility with subcontract factories.



Support for fast system launch

The **SL-VHM1** can operate and monitor all units that are connected to the system, putting efficient debugging (checking) of I/O devices installed in remote locations at your fingertips.

Handy monitor **SL-VHM1**



Greatly reducing labor when installing

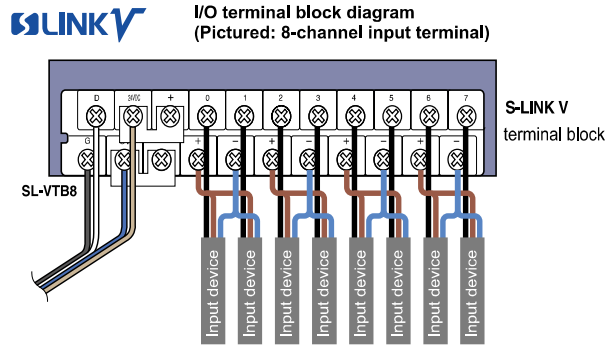
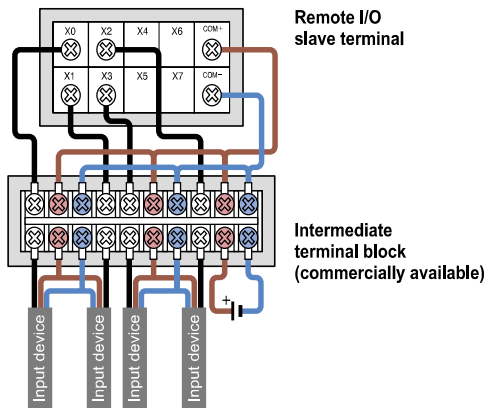
Labor saving is realized thanks to the 4-core flat cable and hook-up connectors. Because the work of peeling cable coverings, mounting crimp terminals, tightening screws, wiring cable ducts, etc. is rendered unnecessary, installation time is minimized. This enables the leadtime to be shortened resulting in more equipment completed in less time. In addition, the overall stress level of onsite personnel is relieved and morale goes up. Surplus auxiliary materials (cables, intermediate terminal blocks, etc.) are unnecessary making for reduced total cost. Also, using connectors to add on or change sensors and units is made easy. No wastes from peeled off cable ends meaning you are left with a wire-saving, environmentally friendly system.



Worksite installation friendly and easily connectable terminal blocks

Ample +COM and -COM terminals are imbedded in the I/O terminals rendering intermediate terminal blocks unnecessary.

Common remote I/O

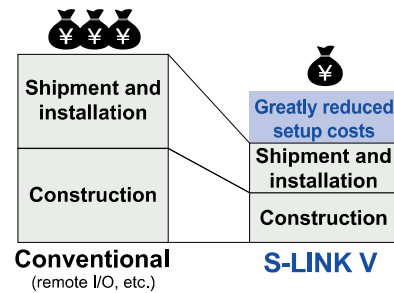


• The unit provides a large number of +COM and -COM terminals.

- The connection of 2 or 3-wire sensors was not envisioned with a low amount of COM terminals
 (There are few makers that provide +COM terminals or make 3-wire sensor connections possible.)
- The present situation among current users is to prepare separate connecting terminal blocks and reconnect anew the remote I/O terminals. It is neither wire-saving nor labor-saving.

Less time required means lower construction costs

In recent years, many production processes have been moved overseas and cases where equipment had to be set up in those new foreign worksites have increased dramatically. It goes without saying that the period of time needed for setting up the worksite equals the period personnel must remain in those countries. A long installation period means an overextended stay bringing up overall costs. The **S-LINK V** promises a short installation time period making for great reductions in labor costs for electricians.



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Comparison with conventional wiring

Setting conditions

- Estimated workload for wiring a control box to 3 processing machines.
- The control box is 10 m **32.808 ft**, 15 m **49.213 ft**, and 20 m **65.617 ft** away from the machines respectively.
- Each machine has 128 I/O points for a total of 384 points.


Estimate results

The S-LINK V system was completely setup in 161 hours and 18 minutes (about 20 days*).

* 8 hours/day

Total time needed for wiring work

- If using **S-LINK V**: 23 hours 42 minutes
- If using conventional wiring: 185 hours



Total time for wiring work

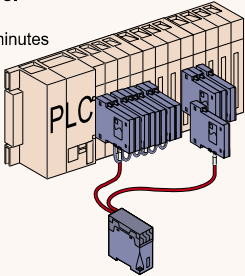
① + ② + ③ = **23 hours and 42 minutes**

- ① Time for wiring work = 1 hour and 37 minutes
- ② Time for wiring work = 26 minutes
- ③ Time for wiring work = 21 hours and 39 minutes

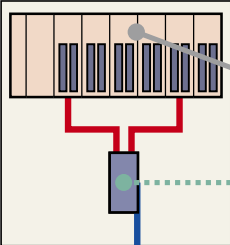
① **Connecting the PLC to the control box's inner terminal blocks**

Time for wiring work = 1 hour and 37 minutes
I/O connector attached cable × 12

- PLC module side: Connector connection
- Terminal block side: Multi-core cable



Control board



PLC

Input module (64 points) × 6 units
Output module (64 points) × 6 units

4-core flat cable × 1

Conventional wiring

Total time for wiring work

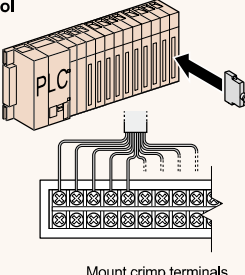
① + ② + ③ = **185 hours**

- ① Time for wiring work = 35 hours
- ② Time for wiring work = 70 hours
- ③ Time for wiring work = 80 hours


① **Connecting the PLC to the control box's inner terminal blocks**

Time for wiring work = 35 hours
I/O connector attached cable × 12

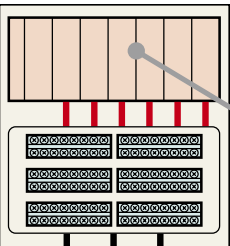
- PLC module side: Connector connection
- Terminal block side: 420 multicore cable ends must be peeled off, crimp terminals must be installed, and screws must be tightened.



Mount crimp terminals



Control board



PLC

Input module (64 points) × 6 units
Output module (64 points) × 6 units

30-core flat cable × 5 per machine

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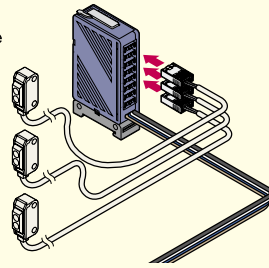
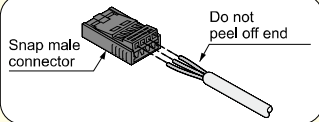
③ Inside machine (S-LINK V I/O units to I/O)

Time for wiring work = 21 hours and 39 minutes

Use **S-LINK V** 8 channel I/O units

■ **S-LINK V** units connected to 4-core flat cable with hook-up connectors.

■ Each I/O device connected to **S-LINK V** units with snap male connectors.

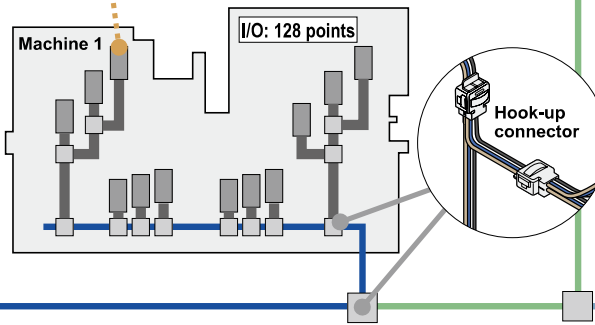
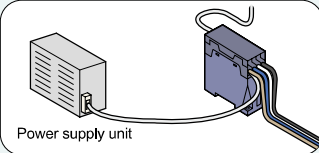


② Control box (S-LINK V controller) to machine

Time for wiring work = 26 minutes

S-LINK V exclusive 4-core flat cable

■ Use hook-up connectors to each machine and branch them.

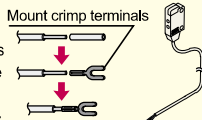


③ Inside machine (Control box terminal blocks to I/O)

Time for wiring work = 80 hours

Connect the 128-point I/O device cables in one machine to the terminal blocks

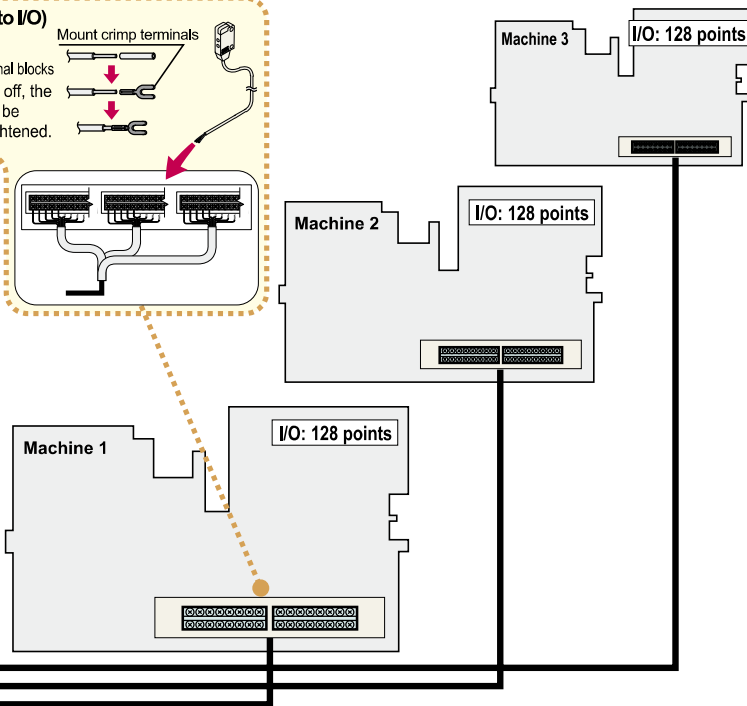
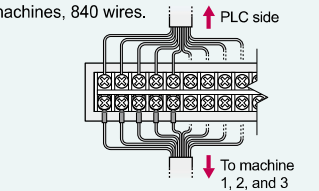
■ For each output device cable the ends must be peeled off, the lead wire end must be arranged, crimp terminals must be installed, and screws on the terminal block must be tightened.

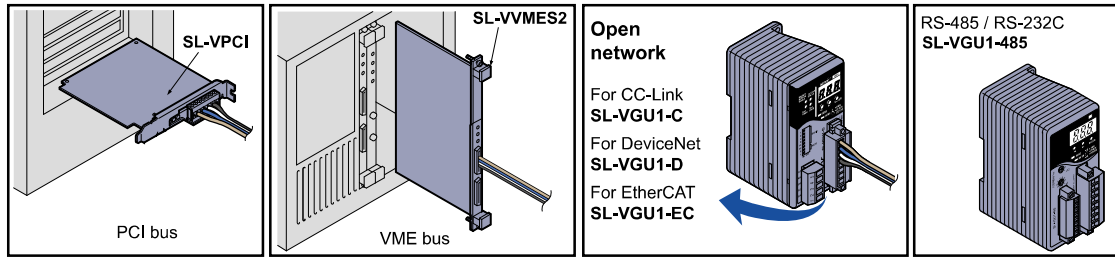


② Terminal connections between inside the control box and inside machines

Time for wiring work = 70 hours

In order to arrange either ends of 140 lead wires for each machine, 280 wires are required. For 3 machines, 840 wires.





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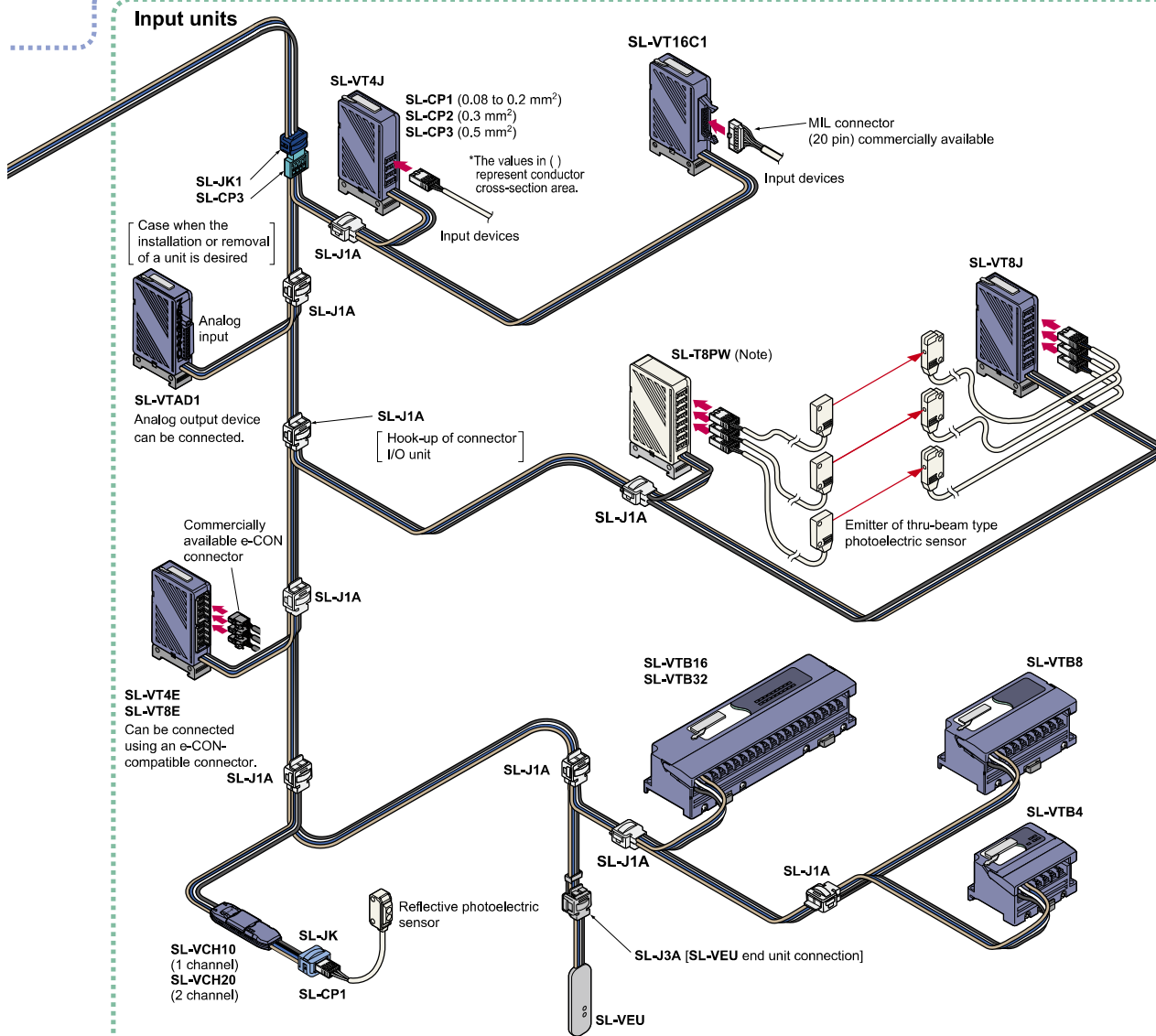
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Note: Because the exclusive 4-core flat cable allows a +24 V-0 V DC power supply, thru-beam type sensor emitters can be connected easily with low installation work.

PCB mounting

Control module
SL-VMC1



I/O module



Input
SL-VM8 (8-point)
SL-VM16 (16-point)

Output
SL-VMP8 (8-point)
SL-VMP16 (16-point)

Debugging tool

Handy monitor
SL-VHM1



APPLICATIONS

Semiconductor manufacturing equipment



Manufacturers are under even greater pressure to save space in clean rooms to prepare for the dawning of the 300 mm **11.811 in** wafer era. Thanks in part to their compact design, **S-LINK V** I/O units can be used to implement wire-saving systems across the board, including for power supply lines helping to reduce your equipment's footprint (installation area).

Automated assembly equipment



Equipment used to manufacture devices such as hard disks, DVDs, and mobile phones must accommodate quick progression from generation to generation as well as rapid growth in demand. Because the **S-LINK V** wire-saving system delivers a high degree of design freedom in every aspect of its operation, it can be used to save man-hours not only in manufacturing, but also in development and design work.










Distribution and conveyance equipment



Since it supports total wiring lengths of up to 1,600 m **5249.344 ft**, **S-LINK V** can be used on long lines such as distribution lines. In addition, all models are CE Mark compliant, ensuring their ability to deliver the level of noise resistance you demand in a high-reliability wire-saving system.

ORDER GUIDE

Control units

Designation	Appearance (Note 1)	Model No.	Description
S-LINK V controller	 CE	SL-VCU1	It can control the signal transmission of the complete system. It also monitors the signal transmission line and specifies the addresses of the disconnected devices if the breaks, etc.
S-LINK V control board for PCI bus	 CE	SL-VPCI (Note 2)	It can be fitted into the expansion slot (PCI bus) of a personal computer to control the S-LINK V system.
S-LINK V control board for VME bus	 CE	SL-VVMES2	It can be directly connected to the VME bus line to control the S-LINK V system. It provides two S-LINK V ports, each allowing 512 I/O points maximum, so that a total of 1,024 I/O points can be controlled.
S-LINK V gateway controller for open network	 CE	SL-VGU1-C	S-LINK V gateway controller for connection open network CC-Link, promoted by CC-Link Association.
	 CE	SL-VGU1-D	S-LINK V gateway controller for connection open network DeviceNet, promoted by ODVA.
	 CE	SL-VGU1-EC	S-LINK V gateway controller complied with the high speed communication system EtherCAT
S-LINK V gateway controller for RS-485/RS-232C	 CE	SL-VGU1-485	S-LINK V gateway controller that supports both RS-485 and RS-232C serial communications.
PLC bus direct connection controller for FP2 / FP2SH series	 CE	SL-VFP2	It can be directly connected to the FP2 / FP2SH series main (CPU) motherboard or expansion motherboard to control an S-LINK V system.
Mitsubishi Electric Corp. MELSEC-Q series bus direct hook-up controller	 CE	SL-VMEL-Q	Directly connects with Mitsubishi Electric Corp.'s MELSEC-Q series base unit to control the S-LINK V system.

Notes: 1) Components with "CE" mark conform to the CE marking EMC Directive.
 2) Driver software not included. Please download driver software from our website.

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PLC related units

Designation	Appearance (Note 1)	Model No.		Description				
		For input	For output	Manufacturer	PLC (Note 2)	PLC input module (Note 3)	PLC output module (Note 3)	
PLC input connector PLC output connector <p>PLC I/O connectors (Note 4) (Max. 16 PLC I/O connectors can be cascaded with one S-LINK V controller.)</p> <p>If connecting 9 PLC connectors or more to the S-LINK V controller, use 2 control cables and separate them into 2 stems for a parallel connection.</p>	<p>FUJITSU COMPONENT connector specs. MIL connector specs.</p> <p>PLC input connectors PLC output connectors (same shape) (Note 6)</p> <p>The listed PLC I/O modules (NPN only) allow the mating PLC I/O connector to be plugged on them for signal transmission between the PLC and the S-LINK V 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>		SL-VS1	SL-VP1	Panasonic Industrial Devices SUNX Co., Ltd. Toshiba Machine Co., Ltd.	FPS (Excluding the FPG-C32T) FP2 TC200	FPG-XY64D2T (X side) FP2-X32D2 TC64DI	FPG-XY64D2T (Y side) FP2-Y32T TC64DON
			SL-VS2	SL-VP2	Fuji Electric Co., Ltd.	NS series F55 F70 F80H, F120H F120S F140S F15XS	NS-XY64-1(X 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-VS3	SL-VP3	Mitsubishi Electric Corp. Fuji Electric Co., Ltd.	AnS AnN, AnA, AnU QnA, QnAs Q A2CJ	A1SX4, A1SX41-S1 A1SX42, A1SX42-S1 A1SH42(X side) A1SH42-S1(X side)	A1SY41 A1SY42 A1SH42(Y side) A1SH42-S1(Y side)
			SL-VS4	SL-VP4	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-VS5	SL-VP5	Omron Corp. Yokogawa Electric Corp. Hitachi Industrial Equipment Systems Co., Ltd. Toshiba Corp. Yasukawa Electric Corp.	CJ1 series CS1 CVM1, CV, C500, C1000HC2000H C200H series CQM1	C11W-ID231 C11W-ID261 C11W-MD261(X side) CS1W-ID231 CS1W-ID261 CS1W-MD261(X side) C500-ID219 C200H-ID216 C200H-ID217 CQM1-ID213 XD64-6N WD64-6N(X side)	C11W-OD231 C11W-OD261 C11W-MD261(Y side) CS1W-OD231 CS1W-OD261 CS1W-MD261(Y side) C500-OD213 C200H-OD218 C200H-OD219 CQM1-OD213 YD64-1A WD64-6N(Y side)
			SL-VS6	SL-VP6	Hitachi Industrial Equipment Systems Co., Ltd.	H series	XDC24D2H XDC24D3H	YTR24DH YTR24D3H
			SL-VS7		Yasukawa Electric Corp.	GL20, GL40S GL60S, GL60H GL70H	B2605	
			SL-VS8	SL-VP8	Rockwell Automation (Allen-Bradley)	SLC500	1746-IV32	1746-OV32
			Cascade cable	<p>(Note 7)</p>	SL-VF70 SL-VF150 SL-VF250	Length: 70 mm 2.756 in Length: 150 mm 5.906 in Length: 250 mm 9.843 in	It links two PLC I/O connectors	
			Control cable	<p>(Note 7)</p>	SL-VC1000 SL-VC2000	Length: 1 m 3.281 ft Length: 2 m 6.562 ft	It links the S-LINK V controller and the first PLC I/O connector.	















Notes: 1) Components with "CE" mark conform to the CE marking EMC Directive.
 2) For the production status of conforming PLCs, please contact the manufacturer.
 3) X side and Y side indicate the input and the output connectors, respectively, of the compound input/output module.
 4) PLC I/O connectors are connectable to S-LINK V controller SL-VCU1 only.
 5) The connector cap is attached with the PLC I/O connector.
 6) The PLC I/O connectors use FUJITSU COMPONENT connectors. However, SL-VS1, SL-VS6, SL-VS8, SL-VP1, SL-VP6 and SL-VP8 connectors use MIL connectors.
 7) The cascade cable and the control cable do not conform to CE marking.

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I/O units

Designation	Appearance (Note 1)	Model No.	Description	
1 channel input unit	 CE	SL-VCH10	1 NPN input	Scattered low count I/O units can be connected easily by 1 channel increments. The connection with the I/O units can be done using hook-up connectors greatly reducing wiring work.
2 channel input unit	 CE	SL-VCH20	2 NPN inputs	
2 channel I/O mixed unit	 CE	SL-VCH21	1 NPN input and 1 NPN output	
1 channel output unit	 CE	SL-VCH11	1 NPN output	
2 channel output unit	 CE	SL-VCH22	2 NPN outputs	
Relay output terminal unit				
4 relay output terminal	 CE	SL-VTPR4	4 relay outputs	
8 relay output terminal	 CE	SL-VTPR8	8 relay outputs	
Connector I/O unit				4, 8 input or 4, 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.
4 channel snap-connector input unit		SL-VT4J	4 NPN inputs	
8 channel snap-connector input unit		SL-VT8J	8 NPN inputs	
4 channel snap-connector output unit	CE	SL-VTP4J	4 NPN outputs	
8 channel snap-connector output unit		SL-VTP8J	8 NPN outputs	
MIL connector input unit	 CE	SL-VT16C1	16 NPN inputs	
16 channel MIL connector output unit		SL-VTP16C1	16 NPN outputs	
e-CON-compatible connector I/O units				4, 8 input or 4, 8 output devices are connectable with an e-CON-compatible connector. 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. *Requires separate purchase of a commercially available connector that complies with the e-CON standard.
4 channel snap-connector input unit		SL-VT4E	4 NPN inputs	
8 channel snap-connector input unit		SL-VT8E	8 NPN inputs	
4 channel snap-connector output unit	CE	SL-VTP4E	4 NPN outputs	
8 channel snap-connector output unit		SL-VTP8E	8 NPN outputs	
I/O arrayed terminal unit				They are screw-on terminal units to which 4, 8, 16 or 32 input devices are connectable. Since power supply terminals have been provided for two input channel, neat wiring is possible. (Note 2)
Input terminal		SL-VTB4	4 NPN inputs	
		SL-VTB8	8 NPN inputs	
		SL-VTB16	16 NPN inputs	
Output terminal	 CE	SL-VTBP4	4 NPN outputs	
		SL-VTBP8	8 NPN outputs	
		SL-VTBP16	16 NPN outputs	
		SL-VTBP32	32 NPN outputs	
Analog input unit	 CE	SL-VTAD1	1 analog input	It can perform A/D conversion of an analog signal at the location of measurement. Since the length of analog wiring is minimized, variations in measurement data due to phenomena such as voltage dips can be reduced.
Analog output unit	 CE	SL-VTDA1	1 analog output	It can perform D/A conversion of digital signals. By combining electro-pneumatic regulator control and motor control capabilities in a single unit, it allows wiring to be reduced.



Notes: 1) Components with "CE" mark conform to the CE marking EMC Directive.
2) 4, 8, and 16-point unit

ORDER GUIDE**I/O units**

Designation	Appearance (Note)	Model No.	Description
Picking switch	 CE	SL-VPK01	This picking switch can be installed on pipes. Its compact size (just 90 mm 3.543 in wide) allows it to be installed on small-sized shelving used with compact parts, while its cable with integrated connector and magnetic (Hall element) contactless switch simplify installation and provide freedom in terms of switch operation (back and forth, left and right, and vertically). The address configuration remote control can be used to set and check the unit's address as well as to select its lamp color [green (default), red, blue, two-stage indication]. Up to 256 units can be connected to a single S-LINK V control unit. *Use requires address configuration remote controller SL-VAR1 . *For SL-VPK02 , The dual-end shutter support fixture MS-PK02-W is available (Optional).
For shutter	 CE	SL-VPK02	
Address setting remote controller		SL-VAR1	

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










PCB mounting module

Designation	Appearance (Note)	Model No.	Description
Control module	 CE	SL-VMC1	Your in-stock original board can be used as a substitute for the S-LINK V controller.
I/O module	 CE	SL-VM8	8 NPN inputs
		SL-VM16	16 NPN inputs
		SL-VMP8	8 NPN outputs
		SL-VMP16	16 NPN outputs

Your in-stock original board can be used as a substitute for the **S-LINK V** I/O unit. Select the most suitable board corresponding with the quantity of I/O devices to be connected.

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

Connectors

Designation	Appearance (Note)	Model No.	Description
Hook-up connector		SL-J1A (Gray) 10 pcs. per set	It creates a "T"-branch connection between two S-LINK V exclusive flat cables. For 0.5 mm ² flat cable to 0.5 mm ² flat cable connection Compatible crimping pliers: SL-JPS
Cable extension hook-up connector		SL-J3A (Black) 10 pcs. per set	It can extend the S-LINK V exclusive flat cable. For 0.5 mm ² flat cable to 0.5 mm ² flat cable connection Compatible crimping pliers: SL-JPS
Cable end socket-branch hook-up connector		SL-JK (Light blue) 10 pcs. per set	Hook-up connector (SL-CP□) for linking the ends of exclusive flat cables (0.5 mm ² , 4-core) to I/O devices using snap male connectors Compatible crimping pliers: SL-JPS
"T"-branch hook-up connector		SL-JK1 (Blue) 10 pcs. per set	Hook-up connector (SL-CP□) for linking mid-system exclusive flat cables (0.5 mm ² , 4-core) to I/O devices using snap male connectors Compatible crimping pliers: SL-JPS
4-pin type snap female connector		SL-CJ1 (White) 10 pcs. per set	Snap female connector to connect with the snap male connector SL-CP1 and SL-CP2 Compatible crimping pliers: SL-JPC
		SL-CJ2 (Black) 10 pcs. per set	
4-pin type snap male connector		SL-CP1 (White) 10 pcs. per set	Snap male connector to link I/O devices with connector I/O units SL-VT4J / SL-VT8J and SL-VTP4J / SL-VTP8J and to link the S-LINK V I/O units to hook-up connectors SL-JK / SL-JK1 . Compatible crimping pliers: SL-JPC (for SL-CP1 / SL-CP2), SL-JPE (for SL-CP3)
		SL-CP2 (Black) 10 pcs. per set	
		SL-CP3 (Greenish blue) 10 pcs. per set	

Note: For UL compatibility, please contact our office.

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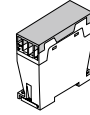
End unit

Designation	Appearance (Note)	Model No.	Description
End unit		SL-VEU	Connect to the end of the main cable. At least one end unit is required for each system. (For more information, refer to the user's manual.) Use the included MS-CH DIN rail mounting bracket for DIN rail installation. The DIN rail mounting bracket can be affixed with screws.

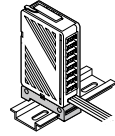
Note: Components with "CE" mark conform to the CE marking EMC Directive.

Accessory

• **NPS-CV**
(Protection cover for **SL-VCU1**)



• **MS-SL-2**
(Connector I/O unit mounting bracket)

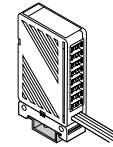


Option







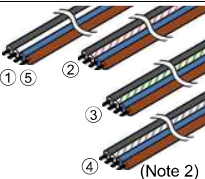

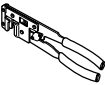
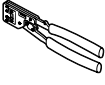
Designation	Model No.	Description
Connector I/O unit mounting bracket / 8-branch connector tap mounting bracket	MS-DIN-3	It is a DIN rail mounting bracket which can be fitted on the mounting base of SL-VT□J , SL-VT□E , SL-VTAD1 and SL-T8PW

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

• **MS-DIN-3**



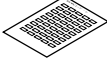
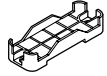
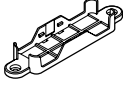
Others

Designation	Appearance (Note 1)	Model No.	Description		
Handy monitor		SL-VHM1	Can monitor and operate all units connected to the S-LINK V system. Highly efficient for debugging I/O units (I/O check)		
8-branch connector tap		SL-T8PW	Since a +24 V-0 V DC power supply can be provided by the dedicated 4-core flat cable, up to 8 thru-beam type sensor emitters can be easily connected.		
2-pin type snap female connector	 (Note 2)	SL-CJ12 (White) 10 pcs. per set	2-wire type device optimal for cable relays to the thru-beam type beam sensor emitters		
	 (Note 2)	SL-CJ22 (Black) 10 pcs. per set			
2-pin type snap male connector	 (Note 2)	SL-CP12 (White) 10 pcs. per set	For 0.08 to 0.2 mm ² (Conductor cross-section area) Wire dia.: ø0.7 to ø1.2 mm ø0.028 to ø0.047 in		
	 (Note 2)	SL-CP22 (Black) 10 pcs. per set		For 0.3 mm ² (Conductor cross-section area) Wire dia.: ø1.1 to ø1.6 mm ø0.043 to ø0.063 in	
Exclusive flat cable (4-core)		SL-RCM100	Length: 100 m 328.084 ft	D line: White: ①	S-LINK V exclusive flat cable (4-core) Conductor cross-section area: 0.5 mm ² Outer diameter: ø2.5 mm × 4 ø0.098 in × 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	
Exclusive cabtyre cable (4-core)		SL-RCM200	Length: 200 m 656.168 ft	D line: White: ⑤	S-LINK V exclusive cabtyre cable (4-core) Conductor cross-section area: 0.5 mm ² Outer diameter: ø7.4 mm ø0.291 in (Hook-up connectors cannot be used)
		SL-CBM100	Length: 100 m 328.084 ft		
Exclusive pliers		SL-JPS	Hook-up connector (SL-J□) can be connected in one grip.		
		SL-JPE	4-pin type snap male connector (SL-CP3) can be connected in one grip.		
Snap male / female connector exclusive pliers		SL-JPC	Snap female connector (SL-CJ□) and snap male connector (SL-CP1/CP2 and SL-CP12/CP22) can be connected in one grip.		

Notes: 1) Components with "CE" mark conform to the CE marking EMC Directive.

2) For UL compatibility, please contact our office.

ORDER GUIDE**Others**

Designation	Appearance	Model No.	Description
Address label		SL-VMA1-SET 2 pcs. (1 circuit) × 4 colors	Set of address stickers in 4 colors (white, pink, green, and gray). Use with multiple circuits for easy visual identification.
DIN rail mounting bracket for SL-VCH □		MS-CH×10 10 pcs. per set	Mounting bracket enabling the SL-VCH series 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-VCH □		MS-SLH 5 pcs. per set	It is used to mount the SL-VCH series. (Please arrange two M4 pan-head screws separately.)

PRECAUTIONS FOR PROPER USE

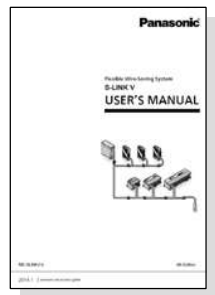
- Never use this product in a device for personal protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.
- Handle safety related or emergency stop signals without passing them through the **S-LINK V** 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 flexible wire-saving system **S-LINK V** are not mutually interchangeable with the sensor & wire-saving link system **S-LINK** and cannot be mixed or matched. Please exercise caution.

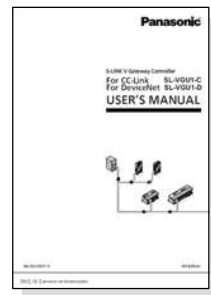
Nevertheless, any of the exclusive 4-core flat cable, connectors, hook-up pliers, or **SL-T8PW** 8-branch connector taps can be used.

Please make use of this system's 'User's Manual'

For more detailed information pertaining to the flexible wire-saving system **S-LINK V**, please refer to its detailed "User's Manual".



S-LINK V User's Manual
This manual provides information about **S-LINK V** design and installation.



S-LINK V Gateway Controller User's Manual
This manual provides information about open networks and **S-LINK V** design and installation.

Information about S-LINK V partner makers

Refer directly to our partner makers for more details pertaining to the **S-LINK V** compatible devices introduced here. **[S-LINK V direct hook-up Manifold electromagnetic valves]**

Koganei Corporation	SMC Pneumatics	CKD Corporation
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FIBER SENSORS

LASER SENSORS

PHOTO-ELECTRIC SENSORS

MICRO PHOTO-ELECTRIC SENSORS

AREA SENSORS

SAFETY LIGHT CURTAINS / SAFETY COMPONENTS

PRESSURE / FLOW SENSORS

INDUCTIVE PROXIMITY SENSORS

PARTICULAR USE SENSORS

SENSOR OPTIONS

SIMPLE WIRE-SAVING UNITS

WIRE-SAVING SYSTEMS

MEASUREMENT SENSORS

STATIC CONTROL DEVICES

LASER MARKERS

PLC

HUMAN MACHINE INTERFACES

ENERGY MANAGEMENT SOLUTIONS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

For Large Scale System

Other Products

S-LINK V