Panasonic
INDUSTRY

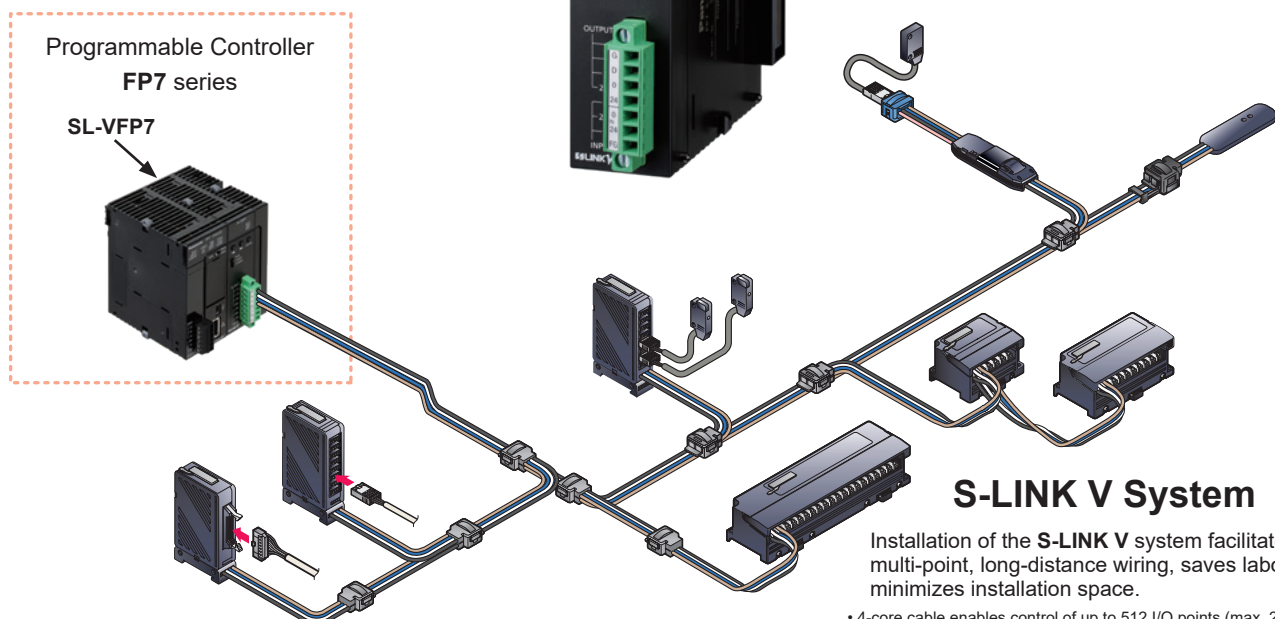# Direct Connection to **FP7** Series
Programmable Controller!

NEW

SL-VFP7

- ■ I/O points: 32 to 512 points
  (Settable in units of 32 points)
- ■ No. of connected nodes: Max. 256 nodes
- ■ Transmission distance: Max. 800 m 2624.672 ft

Example of system configuration

Programmable Controller
FP7 series

SL-VFP7

S-LINK V System

Installation of the **S-LINK V** system facilitates multi-point, long-distance wiring, saves labor and minimizes installation space.
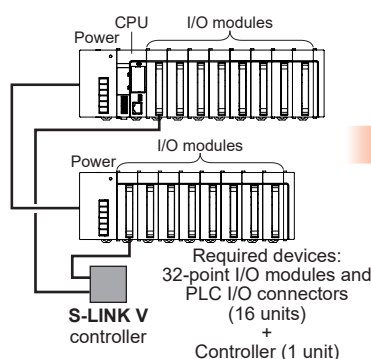
- 4-core cable enables control of up to 512 I/O points (max. 256 nodes)
- Maximum communication distance of 800 m 2624.672 ft
- Use of dedicated 4-core flat cable allows T-branch multiple-drop connection for flexible system layout.
- Pressure-contact connectors for easy, one-touch connection.

Minimum wiring work means cost reduction and space saving.

Direct bus connection eliminates the need for PLC I/O connectors, **S-LINK V** controller or PLC I/O modules, thus realizing the reduction of the entire system cost and installation space.

In the case of 512 I/O points
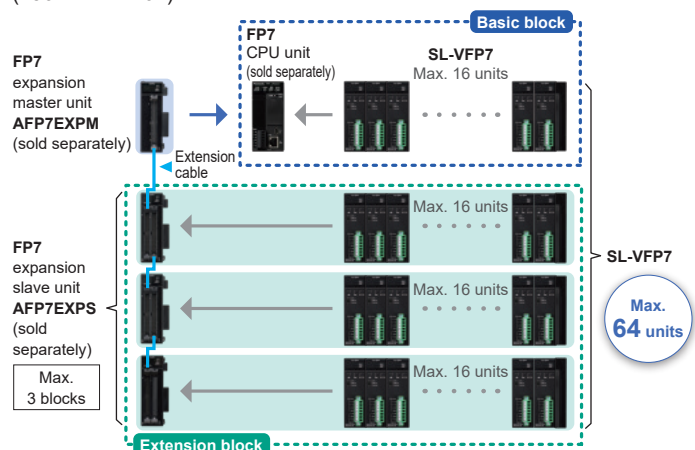
Conventional system

FP7 series

CPU
Power
I/O modules

Power
I/O modules

Required devices:
32-point I/O modules and
PLC I/O connectors
(16 units)
+
Controller (1 unit)

S-LINK V controller

Only one
SL-VFP7 unit
is required!

Up to 64 **SL-VFP7** units can be connected to **FP7** series programmable logic controller.

The **FP7** series allows connection of up to 64 **SL-VFP7** units so that a maximum of 32,768 I/O points (512 points × 64) or 16,384 nodes (256 nodes × 64) can be controlled.

Basic block

FP7
CPU unit
(sold separately)

SL-VFP7
Max. 16 units

FP7
expansion
master unit
AFP7EXPM
(sold separately)

Extension cable

FP7
expansion
slave unit
AFP7EXPS
(sold separately)

Max. 3 blocks

Max. 16 units

Max. 16 units

Max. 16 units

SL-VFP7

Max. **64** units

Extension block

* When **AFP7CPS21** (sold separately) is used as the **FP7** CPU unit, **FP7** extension master / slave units (sold separately) cannot be used, so only up to 16 **SL-VFP7** units can be mounted in that case.

SPECIFICATIONS

Item	Type / Model No.	FP7 series bus direct connection S-LINK V controller
	Model No.	SL-VFP7
Regulatory compliance		CE Marking (EMC Directive, RoHS Directive)
Supply voltage (Note 1)		S-LINK V side: +24 V DC $^{+10}_{-5}$ %, FP7 side: +24 V DC $^{+20}_{-15}$ %
Current consumption		S-LINK V side: 80 mA or less (Note 2), FP7 side: 80 mA or less
Allowable through current		7 A or less (Note 3)
S-LINK V port		1 port
Transmission procedure		S-LINK V protocol
Transmission speed		A mode: 110 kbps, B mode: 27.5 kbps, C mode: 6.9 kbps
Refresh time		A mode: 0.29 to 10.32 ms, B mode: 1.18 to 41.29 ms, C mode: 4.70 to 165.15 ms
Connecting method		T-branch or multi-drop connection
I/O points		32 to 512 points (Settable in units of 32 points)
No. of connected nodes		Maximum 256 nodes
Transmission distance		A mode: Maximum 50 m 164.042 ft, B mode: Maximum 200 m 656.168 ft, C mode: Maximum 800 m 2624.672 ft
Total wiring length		A mode: 100 m 328.084 ft or less, B mode: 400 m 1312.336 ft or less, C mode: 1,600 m 5249.344 ft or less
Communication cable		Exclusive 4-core flat cable (0.5 mm^2) or 4-core VCTF cable (conductor cross-section area 0.3 to 1.5 mm^2, without shield)
I/O combination		I/O settable in units of 32 points
Number of units that can be mounted		64 units (Total number of units in basic block and extension block)
Number of occupied words		Input: 1 word, Output: 1 word
Indicator	Power	Blue LED (Lights up when +24 V DC is supplied from the FP7 bus)
	Communication	Green LED (Flashes during S-LINK V communication operation)
	Error	Red LED (Lights up when an error occurs, flashes after the cause of an error is eliminated, and remains unlit during normal operation)
	Hexadecimal	Orange LED (Lights up when the address display unit is in hexadecimal display)
Address display		3-digit green LED (Displays the number of connected nodes, recognized addresses, and error addresses)
Environmental resistance	Ambient temperature	0 to +55 °C +32 to +131 °F (No condensation or icing allowed), Storage: -40 to +70 °C -40 to +158 °F
	Ambient humidity	10 to 95 % RH (at +25 °C +77 °F), Storage: 10 to 95 % RH (at +25 °C +77 °F)
	Vibration resistance	5 to 8.4 Hz, single amplitude of 3.5 mm 0.138 in, 1 sweep/min. (IEC 61131-2) 8.4 to 150 Hz, constant acceleration of 9.8 m/s^2, 1 sweep/min. (IEC 61131-2) 10 min each in X, Y, and Z directions
	Shock resistance	147 m/s^2 in X, Y, and Z directions for three times each (IEC 61131-2)
Grounding method		F.G. terminal: Capacities coupling, Casing: Floating type
Terminal block		Terminal block connector
Material		Enclosure: PC+PBT alloy, Display: PC
Weight		Net weight: 120 g approx., Gross weight: 160 g approx.
Compatible programming software		Control FPWIN GR7 Ver. 2.28.3 or higher, Control FPWIN Pro7 Ver. 7.4.2.0 or higher

Notes: 1) The +24 V DC power supply on the **S-LINK V** side and the +24 V DC power supply on the **FP7** side are insulated.
2) The current consumption shown above is that of the controller. This does not include the current consumption of the **S-LINK V** input and output units that are connected.
3) This product is not equipped with a power supply short-circuit protection function. For the power supply to be used, select a product equipped with a short-circuit protection function (such as fuses).

DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

SL-VFP7 — FP7 series bus direct connection S-LINK V controller

4 0.157
(91 3.583)
80 3.150
(2 0.079)
90 3.543
4 0.157
28 1.102
(11 0.433)
(37 1.457)
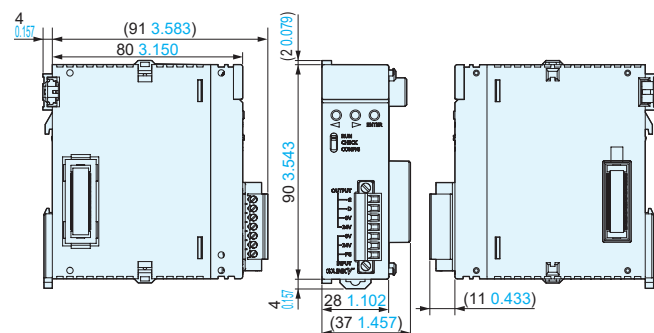
How to Obtain User's Manuals

The **S-LINK V** User's Manual is available for download from our website.
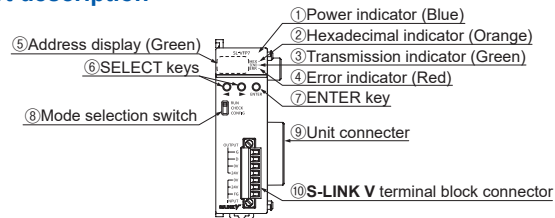
⚠ Safety Precautions

● Read the handling / installation instructions and operation manual thoroughly before using, and use the product correctly.

PRECAUTIONS FOR PROPER USE

⚠
• Never use this product as a sensing device for personnel protection.
• In case of using sensing devices for personnel protection, use products which meet the laws and standards, such as OSHA, ANSI and IEC etc., for personnel protection applicable in each region or country.
• 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.

Part description

⑤Address display (Green)
⑥SELECT keys
⑧Mode selection switch
①Power indicator (Blue)
②Hexadecimal indicator (Orange)
③Transmission indicator (Green)
④Error indicator (Red)
⑦ENTER key
⑨Unit connecter
⑩S-LINK V terminal block connector

No.	Designation	Function
①	Power indicator (Blue)	Lights up when power is supplied from the CPU unit.
②	Hexadecimal indicator (Orange)	Indicates the display mode of the address display. • Lights up: Hexadecimal display mode • Lights OFF: Decimal display mode
③	Transmission indicator (Green)	Flashes during communication operation (signal generation). The flashing interval varies depending on communication mode.
④	Error indicator (Red)	Displays error status. • ON: Error generation • OFF: Normal • Flashing: Cause of error corrected after error generation (error history)
⑤	Address display (Green)	The display contents differ in "RUN mode," "CHECK mode" and "CONFIG mode." The mode can be changed with the mode selection switch. <RUN mode> • LEDs light up in each transmission mode (3 types,) and trace out a rectangle in the clockwise direction. A mode / B mode / C mode • When an error occurs, the type of error is shown. <CHECK mode> • The number of connected nodes that are recognized is displayed. Then, every time the SELECT key is pressed, each recognized address is shown in turn. Number of connected nodes: Displays the number of nodes in the I/O units in decimal / hexadecimal notation. Address: Displays the addresses of the I/O units in sequence. Note: In case of hexadecimal display, the hexadecimal indicator lights up. • When an error occurs, the node number having the error and the error addresses are displayed successively.(for errors 3, 4, and 5) <CONFIG mode> • Each setting is displayed successively. The settings can be changed by using SELECT key. • Displayed content varies between when power is turned ON and when the mode changes from RUN to CONFIG. When the PLC stops in RUN or CHECK mode, "StP" is displayed. (If the operation in the event of PLC stoppage is set to "Stop communication when PLC stops")
⑥	SELECT keys	Used to change displayed items or setting items and to change condition settings.
⑦	ENTER key	Quick pressing of ENTER key: Saves the setting. 3-second pressing of ENTER key: Executes the indicated function.
⑧	Mode selection switch	Changes the mode to RUN, CHECK or CONFIG.
⑨	Unit connecter	Used for the connection of units.
⑩	S-LINK V terminal block connector	+24 V, 0 V, and F.G. are supplied from the external power supply, and +24 V, 0 V, D, and G are supplied to I/O units.

Mounting

Connect the **SL-VFP7** to the **FP7** programmable logic controller unit (sold separately).
• Connect the attachment connectors on the sides of units for mounting.
• Be sure to install the end unit to the last unit on the right side.
• After connecting the units, attach the assembly to the 35-mm-wide DIN rail.

CPU unit (sold separately) → SL-VFP7 → (Example) I/O unit (sold separately) → End unit (supplied with CPU unit)
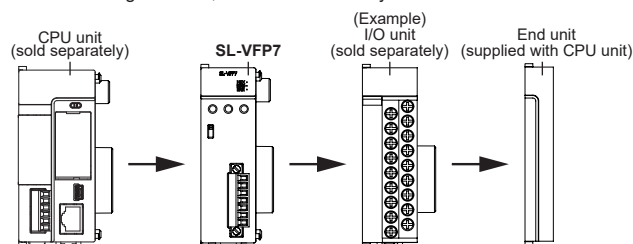
Others

• This product has been developed / produced for industrial use only.
• This product is not incorporated with a short-circuit protection circuit. Please use a power supply having a short-circuit protection function (fuse, etc.).