Common terminal block (T11R): Wiring method

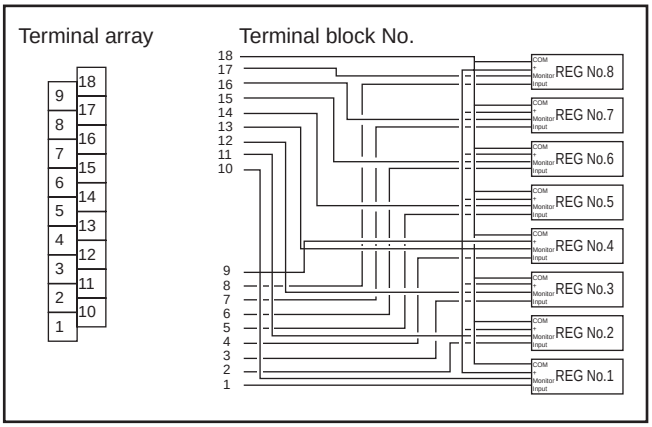
Notes on wiring

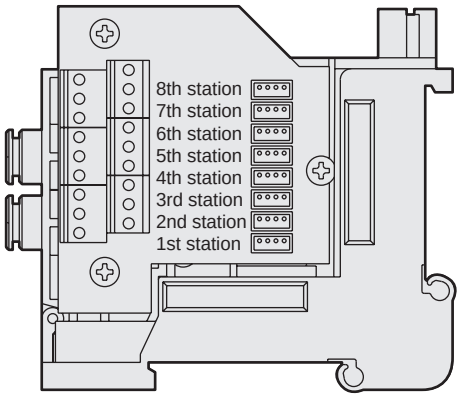
[Cautions for common terminal block (T11R)]

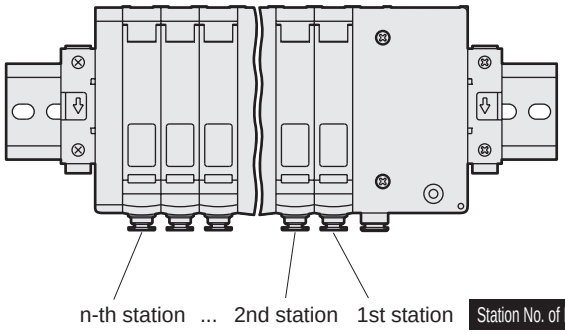
Viewed from piping port, station No. of EVT is numbered from right. If voltage may drop depending on simultaneous communication or cable length, 4 - 20 mA of current is recommended for input signal.

Terminal box recommended screw tightening torque 0.2 N·m

Internal wiring method of T11R (up to 8 stations for EVT)







Terminal array of wiring method T11R

* Max. station No. of EVT is 8 stations.

Terminal No.

18	17	16	15	14	13	12	11	10
9	8	7	6	5	4	3	2	1

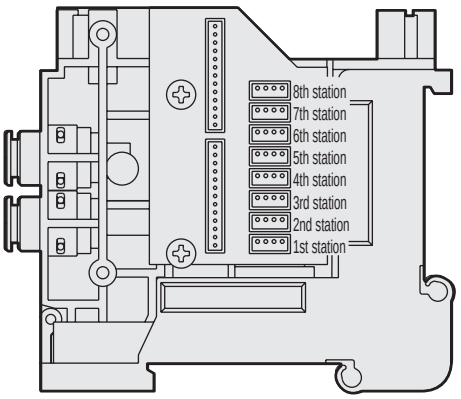
[Standard wiring]

Terminal No.	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**
Terminal array	COM	Analog output 8	Analog output 7	Analog output 6	Analog output 5	Analog output 4	Analog output 3	Analog output 2	Analog output 1
Terminal No.	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
Terminal array	Power supply+	Input signal 8	Input signal 7	Input signal 6	Input signal 5	Input signal 4	Input signal 3	Input signal 2	Input signal 1

D sub-connector (T30R): Wiring method

D sub-connector (T30R)

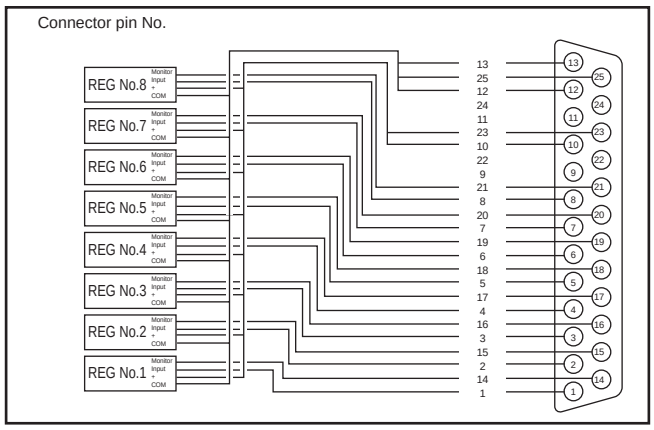
A connector used for wiring method T30R is generally called as D sub-connector and widely used in FA and OA components. Especially, 25P type complying RS-232C standards is a dedicating connector widely used in PC communication board.

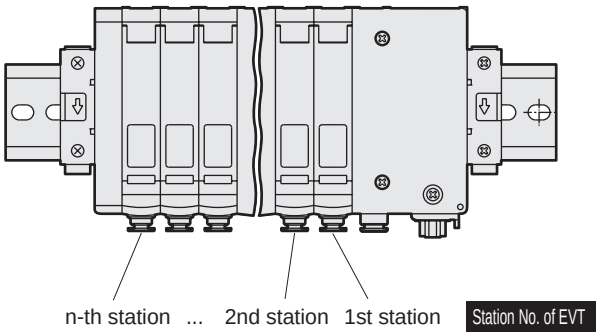


[Cautions for D sub-connector (T30R)]

Viewed from piping port, station No. of EVT is numbered from right.

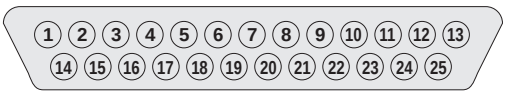
If voltage may drop depending on simultaneous communication or cable length, 4 - 20 mA of current is recommended for input signal.





Connector pin array of wiring method T30R

* Max. station No. of EVT is 8 stations.



Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Pin array	Input signal 1	Input signal 2	Input signal 3	Input signal 4	Input signal 5	Input signal 6	Input signal 7	Input signal 8	(Void)	Power supply+	(Void)	COM	COM
Pin No.	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	
Pin array	Analog output 1	Analog output 2	Analog output 3	Analog output 4	Analog output 5	Analog output 6	Analog output 7	Analog output 8	(Void)	Power supply+	(Void)	COM	

How to order cable with D sub-connector

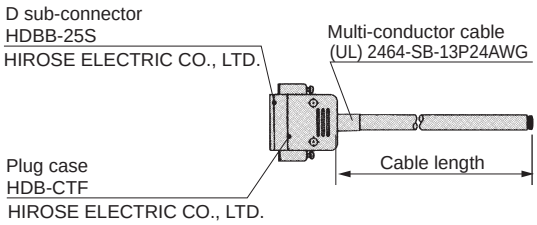
EVT - CABLE - D 0 0 - 5 - P70

- C Clean room specifications
- A User interface
- B Cable length

	Model
	EVT
Code	
A 0	Cutting only
B 5	5 m
C	Structure
P70	Exhaust treatment

D sub-connector pin No. and conductor

● EVT-CABLE-D00-B



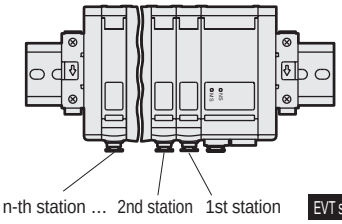
Cable length	Weight g
5 m	793

D sub-connector pin No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor	Insulator color	Yellow	Green	Gray	White	Yellow	Green	Gray	White	Yellow	Orange	Green	Orange	Orange
	Mark type	1 point	1 point	1 point	1 point	2 point	2 point	2 point	2 point	3 point	1 point	3 point	1 point	2 point
	Mark color	Black	Black	Black	Black	Black	Black	Black	Black	Black	Red	Black	Black	Black

D sub-connector pin No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor	Insulator color	Yellow	Green	Gray	White	Yellow	Green	Gray	White	Yellow	Orange	Orange	Orange	
	Mark type	1 point	1 point	1 point	1 point	2 point	2 point	2 point	2 point	3 point	2 point	3 point	3 point	
	Mark color	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Black	

Serial transmission (T9*): Wiring method

[Cautions for serial transmission (T9*)]



- The slave unit's output No. differs with the maker. The internal connector No. and EVT correspond as shown below.
- EVT station are set in order from the right facing the piping port.
- Since internal connectors are wired in order, if there are fewer EVT stations on the left face of the electric and supply/exhaust block than total connectors, some connectors are left open. Do not use these open connectors for drives other than EVTs in use.
- Do not remove protective connectors connected to void connectors or a failure may occur.
- The working power is 24 VDC.
- A slave unit for each communication system is used. Contact CKD for compatible PLC and host station models and communication system specifications. (Refer to page 881)
- To ensure network reliability, use the communication cable recommended for each communication system.
- Securely fix the enclosed connector with set screw.

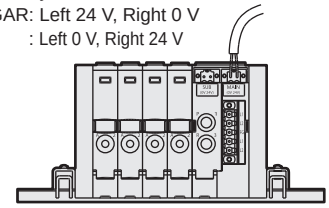
(Refer to the right table for proper torque)

	Cable fixing screw	Connector fixing screw
Power supply connector	0.25 N·m	0.4 N·m
Communication connector	0.5 N·m	

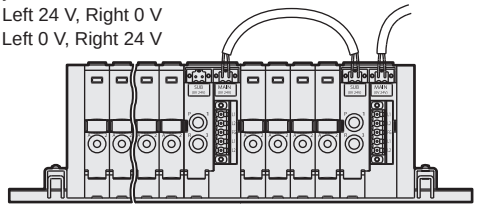
- The SUB power supply terminal is only for crossover wiring. Use the MAIN power supply terminal when connecting a single wire. Do not allow power to be applied to both SUB and MAIN power supply terminals. Otherwise malfunction may occur.
- MAIN and SUB power terminals are connected internally. When not using the SUB power terminal, connect the enclosed connector to prevent short-circuiting.

[Wiring power cable]

When using one electrical block (electric, supply and exhaust block), connect the power cable to MAIN.
* Check power polarity.
T9DAR/T9GAR: Left 24 V, Right 0 V
: Left 0 V, Right 24 V



When using more than one wiring block (electric, supply and exhaust block)
Connect one power cable to the first MAIN, and then from SUB to the next MAIN.
* Check power polarity.
T9DAR/T9GAR: Left 24 V, Right 0 V
: Left 0 V, Right 24 V



* Refer to the table below for EVT station No.

EVT max. station number

Slave unit (electric, supply and exhaust block) model No.	Communication system name	EVT max. station number		
		When using 1 slave unit	When using 2 slave unit	When using 3 slave unit
T9DAR	DeviceNet	4 units	8 units	12 units
T9GAR	CC-Link	4 units	8 units	12 units

Up to three slave units can be connected per manifold.

Correspondence of wiring method T9* channel No. and connector No.

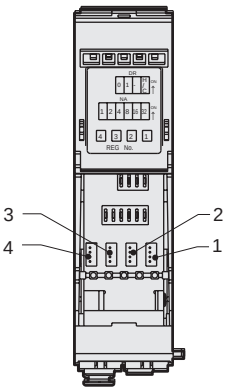
T9DAR				
Channel No. (pressure setting data)	0 (1)	1 (2)	2 (3)	3 (4)
Channel No. (pressure monitor data)	0 (1)	1 (2)	2 (3)	3 (4)
Connector No. (REG No.) (EVT station No.)	**1**	**2**	**3**	**4**

* The channel No. may be counted from "1" depending on the master.

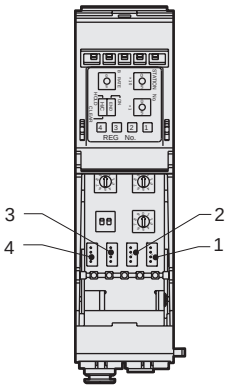
T9GAR				
Channel No. (pressure setting data)	1	2	3	4
Channel No. (pressure monitor data)	1	2	3	4
Connector No. (REG No.) (EVT station No.)	**1**	**2**	**3**	**4**

Internal connector No.

T9DAR



T9GAR



Serial transmission slave unit specifications (Refer to the table below for the applicable PLC correspondence table)

Descriptions		T9DAR	T9GAR
Communication subject		DeviceNet *1	CC-Link Ver1.10 *2
Communication speed		125 kbps/250 kbps/500 kbps	156 kbps/625 kbps/2.5 Mbps/ 5 Mbps/10 Mbps
Power supply voltage		24 VDC ± 10% *3 (Unit power supply/regulator power supply common terminal) Communication power supply (V+, V-): 11 to 25 VDC	24 VDC ± 10% *3 (Unit power supply/regulator power supply common terminal)
Current consumption		60 mA or less Load current is not included Communication power supply (V+, V-): 50 mA or less	80 mA or less Load current is not included
Max. output No. (DA output)		4 point	
Max. input No. (AD input)		4 point	
DA output	Pressure setting data	12 bit	
	Accuracy *4	±1% F.S. or less	
AD input	Pressure monitor data	12 bit	
	Accuracy *5	±6% F.S. or less	
Occupied		Occupied output memory: 2 × n (byte) *6 Occupied input memory: 2 × n (byte) *6	Occupied unit No.: 1 station (Remote device station)

*1 Contact CKD for EDS file.
*2 Contact CKD for profile.
*3 To secure output accuracy, use safety power supply with 1% or less of ripple ratio.
*4 DA output accuracy does not include EVT accuracy.
*5 AD input accuracy includes EVT monitor accuracy.
*6 The slave unit's memory occupied by the PLC is determined by the number of EVT units (n) connected when the slave unit's power is turned ON. (Note that if no units are connected, the memory for four units is occupied)

Compatible PLC table

Model No.	Manufacturer name (recommended body)	Series	Communication system name	Host station model No.
T9DAR	ODVA	DeviceNet compatible PLCs, computers and SBCs of various manufacturers	DeviceNet	Connected to the masters compatible with the manufacturers' DeviceNet systems
	OMRON	SYSMAC CS Series SYSMAC CJ Series SYSMAC CV Series SYSMAC α Series SYSMAC C200HS Series Others	DeviceNet (CompoBus/D)	CS1W-DRM21-V1 CJ1W-DRM21 CVM1-DRM21-V1 C200HW-DRM21-V1 ITNC-EI□01-DRM (PLC with master) 3G8B3-DRM21 (VME board) Other DeviceNet compatible masters
	TOYODA	PC3J/2J Series PC3JD PC2F/PC2FS	DeviceNet (DLNK)	THK-5398 TIC-5642 (master integrated PLC) TFU-5359 Other DeviceNet compatible masters
T9GAR	CLPA	CC-Link compatible PLCs, computers and SBCs of various manufacturers	CC-Link	Connected to the masters compatible with the manufacturers' CC-Link
	MITSUBISHI	MELSEC A Series MELSEC QnA Series MELSEC Q Series Others	CC-Link	AJ61BT11 AJ61QBT11 A1SJ61BT11 A1SJ61QBT11 QJ61BT11 A80BD-J61BT11 (for PCI bus) Other CC-Link compatible masters

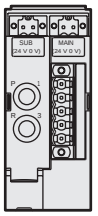
Model No.	LED display	Wiring and setting method

T9DAR

☐ NS
☐ MS

LED name	Display description
NS	Displays network status
MS	Displays slave unit's status

Wiring method



Previous station

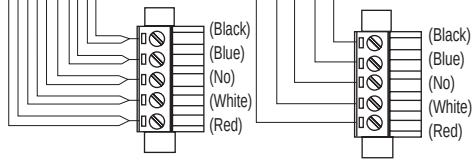
(Black)	V-
(Blue)	CAN_L
(No)	Drain
(White)	CAN_H
(Red)	V+

DeviceNetcable

T branch tap

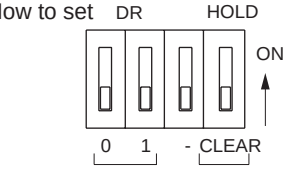
Following station

V-
CAN_L
Drain
CAN_H
V+



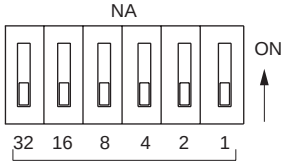
The wiring section connector is included.
Check power's polarity. (Left: 24 V, right: 0 V)
Unit power and regulator power use a common terminal.
The power connector (24 V, 0 V) is insulated from communication power (V+, V-).

How to set



Set the communication speed.

Set output status if a communication error occurs.



Set the slave unit address.

Communication speed	0	1
125 kbps	OFF	OFF
250 kbps	ON	OFF
500 kbps	OFF	ON
Setting not available	ON	ON

HOLD/CLEAR setting

◆ HOLD
If a communication error occurs, the status of output is held in the state just before the error occurred. (Only for set addresses)
Note: Output may not be held depending on the state of the error.

◆ CLEAR
If a communication error occurs, all channels are turned OFF (0 data output to EVT). (Only for set addresses)

Caution

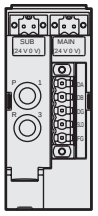
- Output to EVT is output simultaneously for all channels.
- Refer to the slave unit specifications for details on occupied memory.
- Contact CKD for information on EDS file.

T9GAR

☐ LERR
☐ LRUN
☐ RD
☐ SD
☐ POWER

LED name	Display description
LERR	Lights when transmission error occurs. Turns off when the time limit is exceeded. Lights when station No. setting or transmission speed setting is incorrect. Blinks when station No. setting or transmission speed setting changes midway.
LRUN	Turns on when accurate data is received, and turns off when the time limit is exceeded. (Lights when correct data is received.)
RD	Turns on when receiving data.
SD	Turns on when sending data.
POWER	Lights when power is ON.

Wiring method



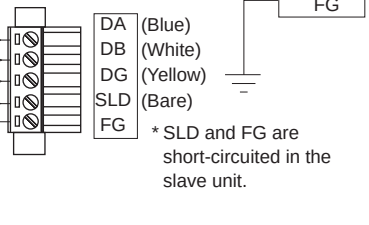
Previous station

(Blue)	DA
(White)	DB
(Yellow)	DG
(Bare)	SLD
	FG

CC-Link dedicating cable

Following station

DA
DB
DG
SLD
FG



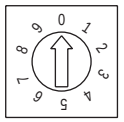
* SLD and FG are short-circuited in the slave unit.

The wiring section connector is included.
Check power's polarity. (Left: 24 V, right: 0 V)
Unit power and regulator power use a common terminal.

How to set

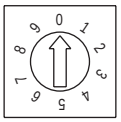
Set the transmission speed.

0: 156 kbps 3: 5 Mbps
1: 625 kbps 4: 10 Mbps
2: 2.5 Mbps 5 and over: Not used

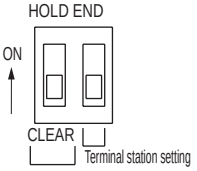


B RATE

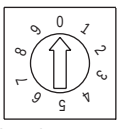
Set the slave unit's station No. (1st place)



STATION No. (× 1)



Set output status if a communication error occurs.



STATION No. (× 10)

Set the slave unit's station No. (tens place)

HOLD/CLEAR setting

♦HOLD
- When the "analog output enabling signal" flag turns OFF, output of the corresponding channel is held in the status just before the flag turned OFF.
- If a communication error occurs, the status of all channels' outputs are held in the state just before the error occurred. (Only for set addresses)
  Note: Output may not be held depending on the state of the error.

♦CLEAR
- When the "analog output enabling signal" flag turns OFF, output of the corresponding channel is turned OFF (0 data output to EVT).
- If a communication error occurs, all channels are turned OFF (0 data output to EVT). (Only for set addresses)

Terminal station setting

This product has a 110 Ω terminator between DA and DB communication lines. The terminal station is set by turning the terminal station setting switch ON. A terminator need not be connected to this product's connector.

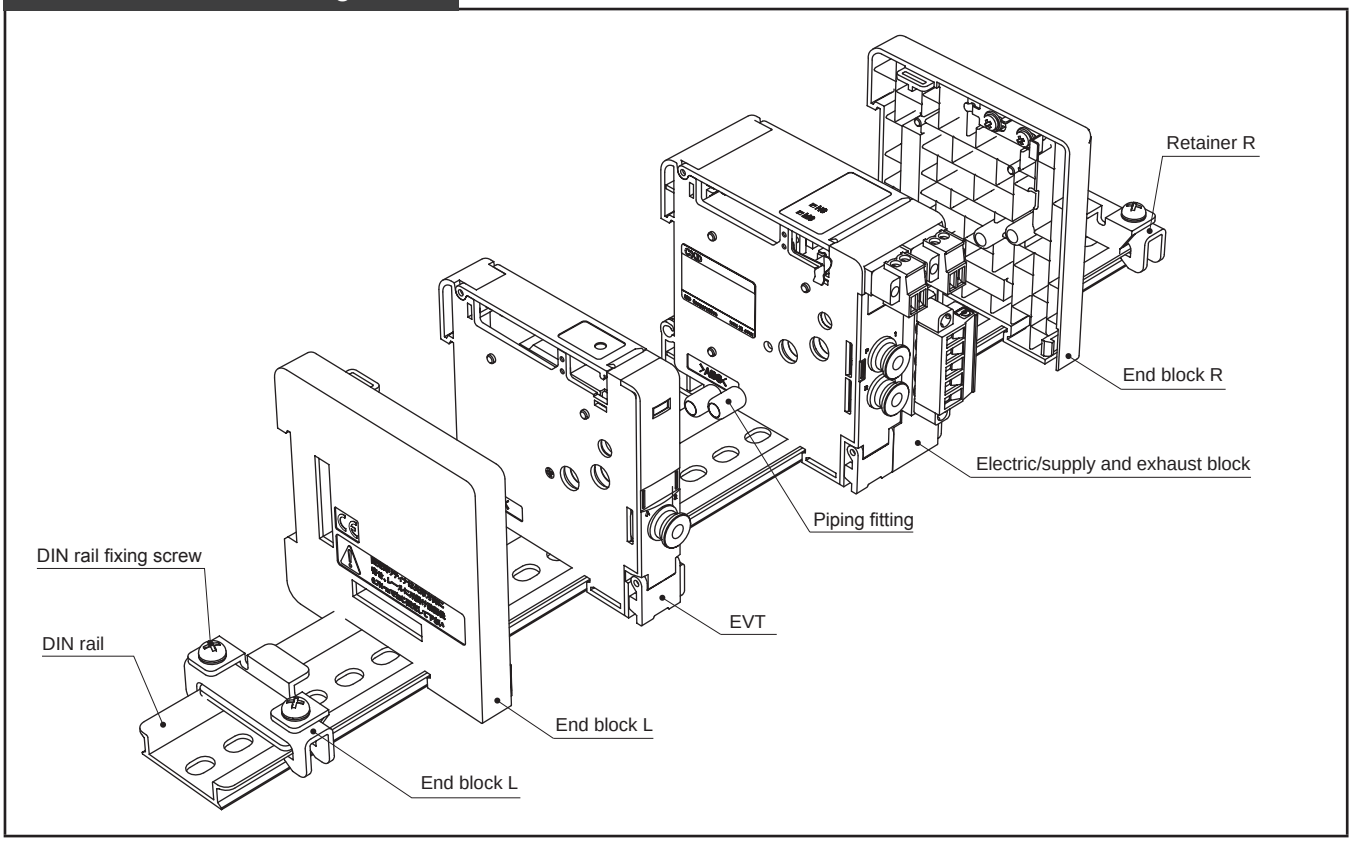
[CAUTION]
Be sure to turn the terminal station setting switch off when this product is the terminal station and a CC-Link-dedicated cable (CC-Link dedicated high performance cable (Kurashige Denko FANCSBH)) requiring a terminal resistance other than 110 Ω is used for the communication cable. This also applies when the terminator's connection differs due to the T-branch connection. Connect a commercially available terminator or the one included with the master station to this product's connector based on connection conditions (specifications). Insulate this terminator.

Caution

- Output to EVT is output simultaneously for all channels.
- Contact CKD for profile.

MEMO

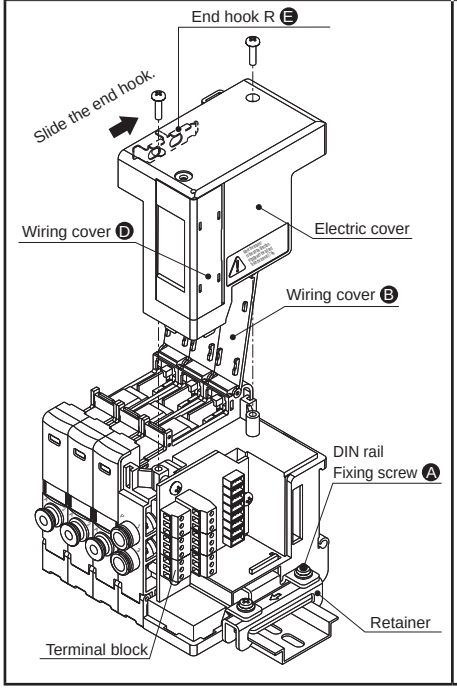
MEVT deal drawing



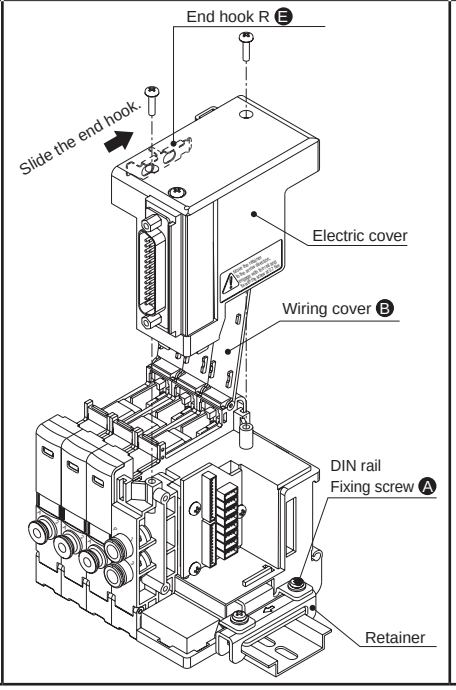
Increasing and reducing the EVT stations

1. Loosen the retainer's DIN rail set screw Ⓐ.
2. Open the EVT wiring cover Ⓑ.
3. When using the common terminal block or D sub-connector, slide end hook R Ⓔ and release the hook. Next, loosen and remove screws on the electric cover. In case of the serial transmission, open the wiring cover Ⓒ. (In case of the common terminal block, check that the wiring cover Ⓓ does not catch the terminal block.)

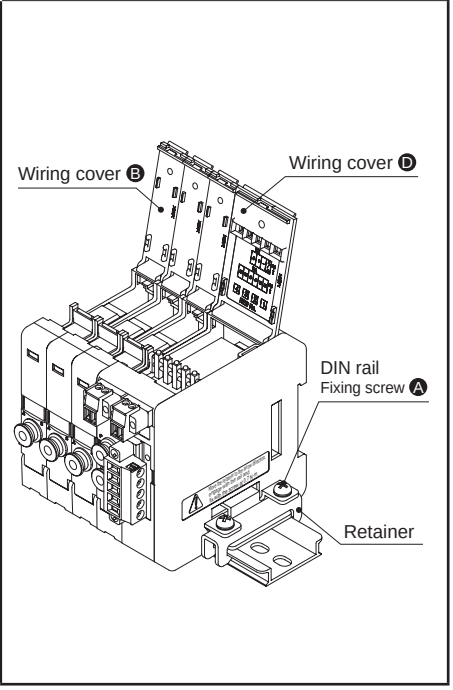
Common terminal block (T11R)



D sub-connector (T30R)

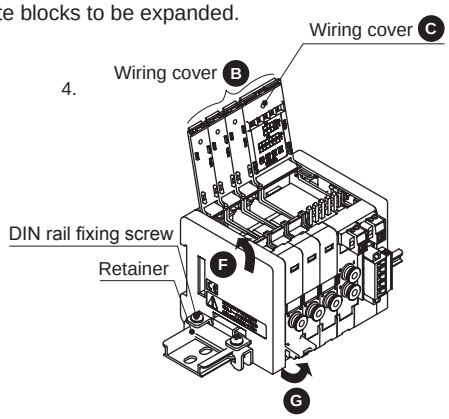


Serial transmission (T9*)

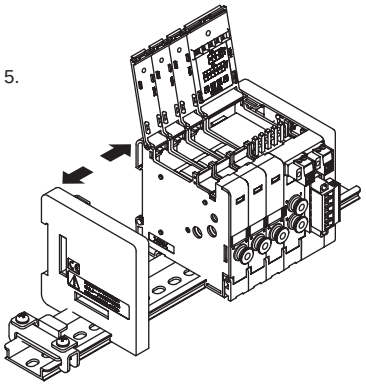


4. Remove the connecting hook spring Ⓕ and connecting hook plate Ⓖ where the manifold is to be increased, and remove the connection between blocks.
5. Separate blocks to be expanded.

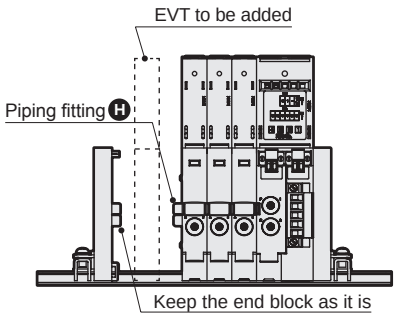
4.



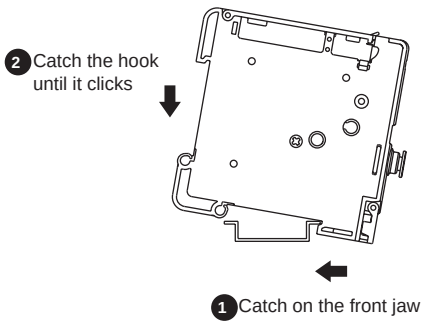
5.



6. Insert two piping fittings Ⓗ into the input (P) and exhaust (R) ports at the separated section.
(Note: At the separated section, 2 piping fittings Ⓗ protrude from each side (4 fittings in all)).



7. Mount the EVT to be added to DIN rail.



8. Press so that there is no gap between blocks, and close the connecting hook spring Ⓕ and connecting hook plate Ⓖ to connect blocks.
9. Insert the signal wires of the added EVT to the internal connectors in the electric, supply and exhaust block.
10. For serial transmission, close the wiring cover Ⓒ. When using the common terminal block or D sub-connector, fit the electric cover on, fix it in place with screws, and return the end hook R Ⓔ to the original position.
(tightening torque: 0.35 to 0.5 N·m)
11. Close wiring cover Ⓑ while taking care not to catch signal wires.
12.(1) Catch the retainer jaws onto the DIN rail.
(2) Press so that there is no gap between blocks.
(3) Press the retainer in the direction of arrow.
(4) Tighten DIN rail set screw Ⓐ.
(Recommended tightening torque: 0.6 to 0.8 N·m)