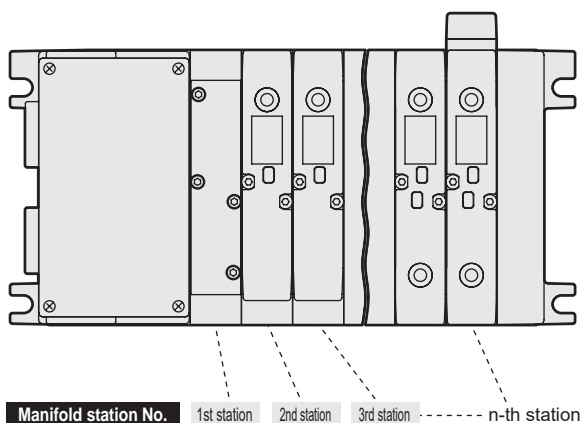## Common terminal box (wiring method T10)
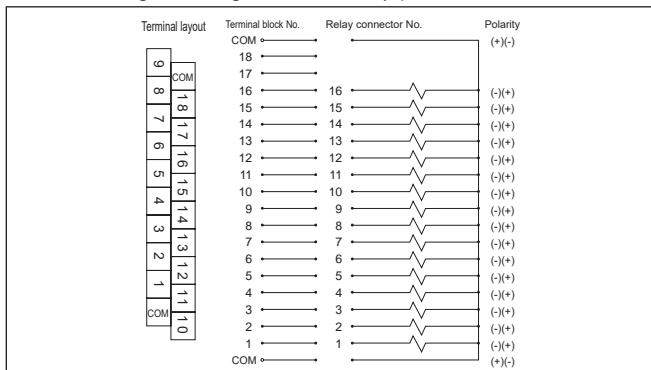
Notes on wiring

[Precautions for common terminal box (T10)]
(1) With the common terminal box, the common wiring is internally processed beforehand. When using the independent contact PLC output unit, wire the common wires at the contact section.
(2) Check the correspondence of the number of stations with solenoid positions to prevent incorrect wiring. (Refer to the table below.)
(3) Note that the correspondence will not function if the number of solenoid stations exceeds 16.
(4) The manifold station numbers are set in order from left with the piping port facing forward.
(5) A voltage drop may occur due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.
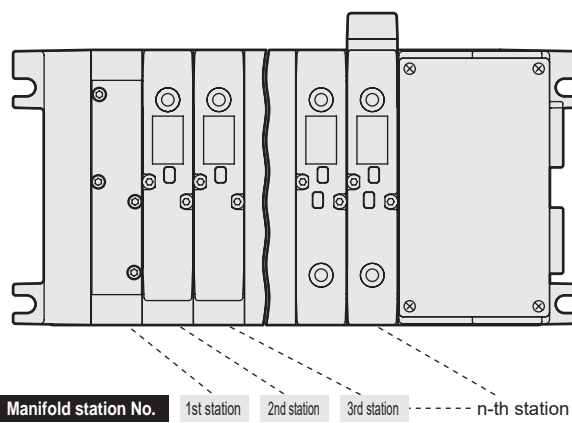
Internal wiring of wiring method T10 (up to 16 solenoid stations)

T10 (left side specifications)

| Manifold station No. | 1st station | 2nd station | 3rd station | ------ | n-th station |

T10R (right side specifications)

| Manifold station No. | 1st station | 2nd station | 3rd station | ------ | n-th station |

Terminal array of wiring method T10 (example)

*: The numerals of valve numbers 1a, 1b, 2a, 2b ... indicate the order of stations first station, second station... and the letters "a" and "b" indicate the "a side" solenoid and "b side" solenoid, respectively. The manifold's max. station number differs depending on the model. Check the specifications of each model.

Terminal No.

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

[Standard wiring]

● For single solenoid valve

(MF station No. max. 16 stations)

Term. block No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	16a	15a	14a	13a	12a	11a	10a
Term. block No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	9a	8a	7a	6a	5a	4a	3a	2a	1a	COM

● For double solenoid valve

(MF station No. max. 8 stations)

Term. block No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	8b	8a	7b	7a	6b	6a	5b
Term. block No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	4b	4a	3b	3a	2b	2a	1b	1a	COM

● For mixed use (single/double mixture)

(Number of solenoid valves up to 16 points)

Term. block No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	(Blank)	(Blank)	9b	9a	8b	8a	7b
Term. block No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	7a	6a	5b	5a	4b	4a	3a	2a	1a	COM

[Double wiring]

(MF station No. max. 8 stations)

Term. block No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	(Blank)	8a	(Blank)	7a	(Blank)	6a	(Blank)
Term. block No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	(Blank)	4a	(Blank)	3a	(Blank)	2a	(Blank)	1a	COM

(MF station No. max. 8 stations)

Term. block No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	8b	8a	7b	7a	6b	6a	5b
Term. block No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	4b	4a	3b	3a	2b	2a	1b	1a	COM

(Number of solenoid valves up to 16 points)

Term. block No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	8b	8a	7b	7a	(Blank)	6a	5b
Term. block No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	4b	4a	(Blank)	3a	2b	2a	(Blank)	1a	COM

CKD

D-sub-connector (Wiring method T30) (Custom made. Consult with CKD.)

Notes on wiring

[T30 Connectors]
The connector used for T30 wiring, called a D-sub-connector, is used widely for FA and OA devices. The 25P in particular is also an RS-232-C Standards designated connector, used for personal computer communication. The manifold station numbers are set in order from left with the piping port facing forward.

[Precautions for connector T30]
(1) Signal arrays of the PLC output unit must match signal arrays on the valve side.
(2) The correspondence will not function if the number of solenoid stations exceeds 16. Please be aware of this.
(3) A voltage drop may occur due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.

Internal wiring of wiring method T30 (up to 16 solenoid stations)

T30 (left side specifications)

| Manifold station No. | 1st station | 2nd station | 3rd station | --------- | n-th station |

T30R (right side specifications)

| Manifold station No. | 1st station | 2nd station | 3rd station | --------- | n-th station |
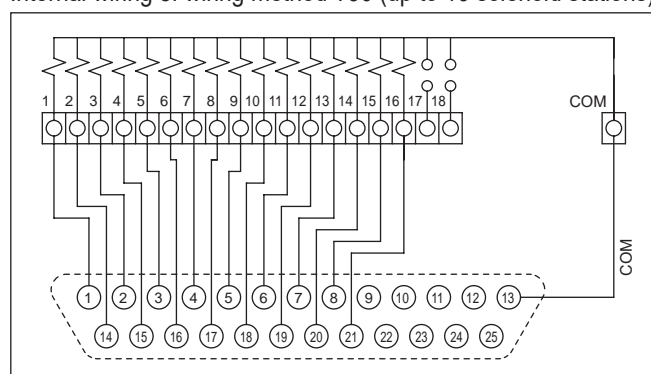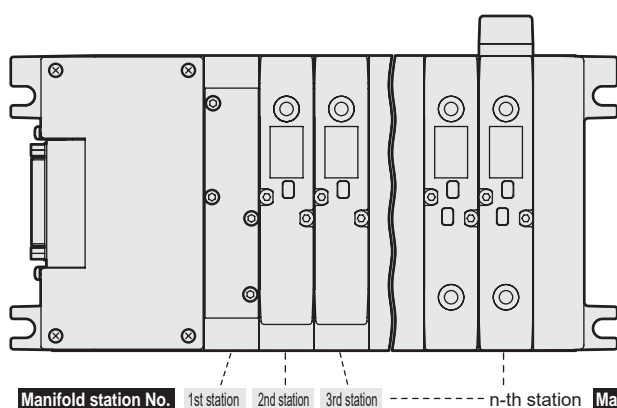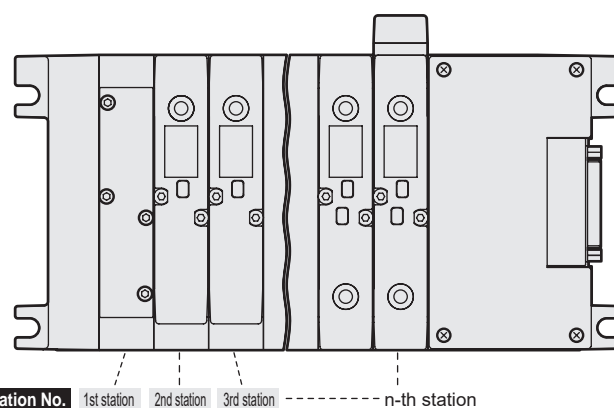
T30 connector pin array (example)

*: The numerals of valve numbers 1a, 1b, 2a, 2b ... indicate the order of stations first station, second station... and the letters "a" and "b" indicate the "a side" solenoid and "b side" solenoid, respectively. The manifold's max. station number differs depending on the model. Check the specifications of each model.

Connector pin No.

[Standard wiring]

● For single solenoid valve (MF max. station number of 16 stations)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	3a	5a	7a	9a	11a	13a	15a	(Blank)	(Blank)	(Blank)	(Blank)	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	2a	4a	6a	8a	10a	12a	14a	16a	(Blank)	(Blank)	(Blank)	(Blank)	

● For double solenoid valve (MF max. station number of 8 stations)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	(Blank)	(Blank)	(Blank)	(Blank)	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	1b	2b	3b	4b	5b	6b	7b	8b	(Blank)	(Blank)	(Blank)	(Blank)	

● For mixed use (single/double mixture) (max. solenoid No. up to 16 points)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	3a	4a	5a	7a	8a	10a	11b	(Blank)	(Blank)	(Blank)	(Blank)	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	2a	3b	4b	6a	7b	9a	11a	12a	(Blank)	(Blank)	(Blank)	(Blank)	

[Double wiring]

● For single solenoid valve (MF max. station number of 8 stations)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	(Blank)	(Blank)	(Blank)	(Blank)	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	

● For double solenoid valve (MF max. station number of 8 stations)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	(Blank)	(Blank)	(Blank)	(Blank)	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	1b	2b	3b	4b	5b	6b	7b	8b	(Blank)	(Blank)	(Blank)	(Blank)	

● For mixed use (single/double mixture) (max. solenoid No. up to 16 points)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	(Blank)	(Blank)	(Blank)	(Blank)	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	(Blank)	(Blank)	3b	4b	(Blank)	(Blank)	7b	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

Serial transmission (Wiring method T6*)

4GA/B
M4GA/B
MN4GA/B
4GA/B
(master)
4GB
With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B
(master)
4F
4F
(master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys
(Total Air)
TotAirSys
(Gamma)
Ending

Notes on wiring

End of production product

[Serial transmission (T6*)]

(1) The device unit's output No. differs with the manufacturer. The manifold internal connector pin No. and the manifold solenoid correspond as shown below.

(2) Internal connectors are wired in order, so there may be some blank numbers depending on the number of manifold stations. These blank outputs cannot be used to drive other than the solenoid manifold in use.

(3) The working power is 24 VDC.

(4) A device unit for each communication system is used.
For usable PLC models, host unit model numbers and communication system specifications, refer to technical data on page 1167.

(5) Station manifolds are set in order from the left with the piping port facing forward regardless of the wiring block position.

(6) For information regarding the PLC, please contact the corresponding PLC manufacturer.

T6* (left-sided specifications)
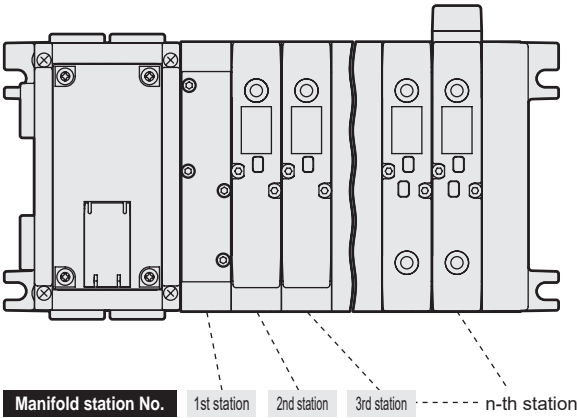
T6*R (right-sided specifications)

| Manifold station No. | 1st station | 2nd station | 3rd station | ------- n-th station |
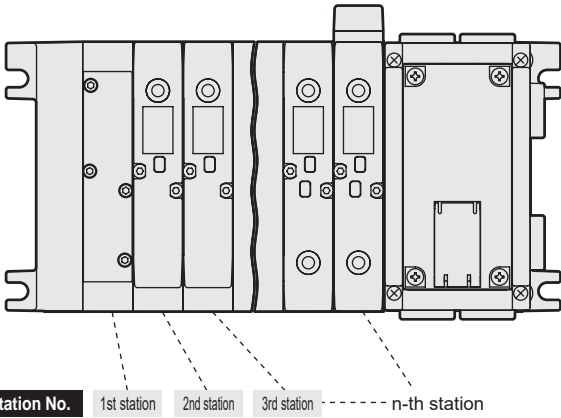
Correspondence of connector pin No. and solenoid valve

● For single solenoid valve
(Supports up to manifold max. station number of 16 stations)

Pin No.	2	4	6	8	10	12	14	16
Valve No.	2a	4a	6a	8a	10a	12a	14a	16a
Pin No.	1	3	5	7	9	11	13	15
Valve No.	1a	3a	5a	7a	9a	11a	13a	15a

● For double solenoid valve
(Supports up to manifold max. station number of 8 stations)

Pin No.	2	4	6	8	10	12	14	16
Valve No.	1b	2b	3b	4b	5b	6b	7b	8b
Pin No.	1	3	5	7	9	11	13	15
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a

● For mixed use (single/double mixture)
(Supports max. No. of solenoid valves up to 16 points)

Pin No.	2	4	6	8	10	12	14	16
Valve No.	2a	4a	6a	7b	8b	9b	10b	11b
Pin No.	1	3	5	7	9	11	13	15
Valve No.	1a	3a	5a	7a	8a	9a	10a	11a

*1: The numerals of valve numbers 1a, 1b, 2a, 2b ... indicate the order of stations first station, second station... and the letters "a" and "b" indicate the "a side" solenoid and "b side" solenoid, respectively.

Correspondence of device unit output No. and connector pin No.

● T6D1, T6G1

Output No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Connector pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

PLC compatibility table

Model No.	Manufacturer name (recommended organization)	Communication system name	Host unit model No.
T7EC*	EtherCAT Technology Group	EtherCAT	Connected to EtherCAT-compatible master
	OMRON Corporation		NJ101
			NJ301
			NJ501
			CJ1W-NC☐82
T7EN*	ODVA	EtherNet/IP	Connected to EtherNet/IP-compatible master
	OMRON Corporation		NJ101
			NJ301
			NJ501
			CJ1W-EIP21
			CS1W-EIP21
T7EB*	CC-Link Partner Association (CLPA)	CC-Link IEF Basic	Connected to CC-Link IEF Basic-compatible master
	Mitsubishi Electric Corporation		MELSEC-Q Series
			Q03UDVCPU
T7EP*	PROFIBUS & PROFINET International	PROFINET	Connected to PROFINET-compatible master
	SIEMENS Corporation		S7-1200
			S7-1500
T8D*	ODVA	DeviceNet	Connected to DeviceNet-compatible master
	OMRON Corporation		CJ1W-DRM21
			CS1W-DRM21-V1
			C200HW-DRM21-V1
			CVM1-DRM21-V1

Note: For details on master units and models not listed above, contact each PLC manufacturer.

4GA/B

M4GA/B

MN4GA/B

4GA/B
(master)

4GB
With sensor

4GD/E

M4GD/E

MN4GD/E

4GA4/B4

MN3E
MN4E

W4GA/B2

W4GB4

MN3S0
MN4S0

4SA/B0

4KA/B

4KA/B
(master)

4F

4F
(master)

PV5G
GMF

PV5
GMF

PV5S-0

3Q

MV3QR

3MA/B0

3PA/B

P/M/B

NP/NAP
NVP

4G*0EJ

4F*0EX

4F*0E

HMV
HSV

2QV
3QV

SKH

Silencer

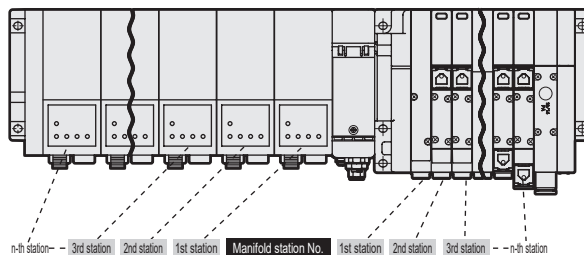TotAirSys
(Total Air)

TotAirSys
(Gamma)

Ending

Wiring structure between wiring block and valve block (DC specifications)

A part called a dedicated wiring connector is built into the valve block and supply and exhaust block, etc. This structure enables the wiring to be completed simultaneously with the disassembly and assembly of the block manifold. Special wiring work is not required during disassembly and assembly. There is regularity to the wiring block connector pin numbers and wired valves. Refer to the section on the wiring method of each wiring block, and connect the wires between the valves and control device. Take special care when increasing or decreasing the number of valve blocks. In addition, an example of the wiring circuit when expanding stations is shown below.

Example of wiring circuit

The diagram below shows the wiring circuit for MW4G4 and differs from the actual specifications.

Double wiring

When one station of a valve block has been expanded between the 2nd and 3rd station, the output that had been assigned to terminal block No. 5 and No. 6 of the wiring block will automatically shift for two solenoids and be assigned to terminal block No. 7 and No. 8.
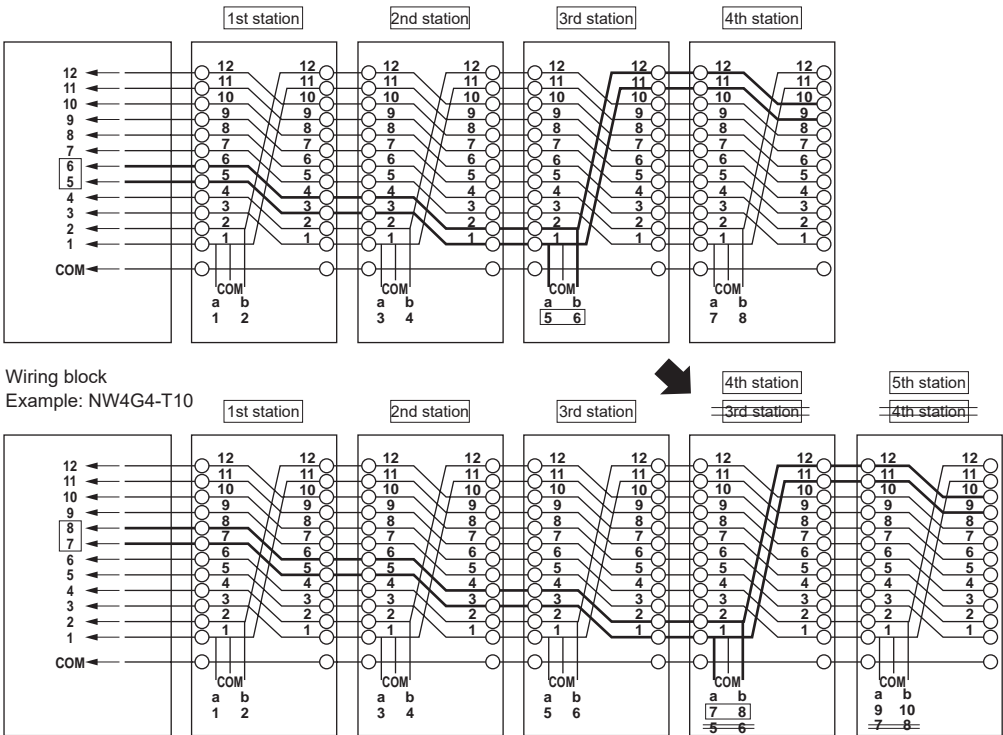
Standard wiring

Similar to double wiring, the terminal block numbers will shift assignments. However, how they shift will depend on the solenoid valve. With types having one solenoid valve (2-position single), they shift for one valve position. With types having two solenoid valves (2-position double / 3-position), they shift for two valve positions.

MEMO

Serial transmission: Wiring method

T7* serial transmission

● Refer to the table below, as device unit I/O numbers differ according to PLC manufacturer.
● The device unit I/O numbers correspond to the manifold solenoids and I/O block as shown below.
● Station manifolds are set in order from the left with the piping port facing forward regardless of the wiring block position.
● The I/O block station numbers are configured in order from the serial transmission device unit side. When input blocks and output blocks are mixed, the input blocks will be placed first on the device unit side upon configuration.
● When there are input configurations, it is possible to connect with sensors by using the input block.
● When the number of solenoid points is less than the output points, it is possible to connect with external equipment by using the output block.
● The working power is 24 VDC.
● A device unit for each communication system is used. Contact CKD for usable PLC models, host unit model numbers and communication system specifications. (Refer to page 1167)
● Securely tighten each connector (power/communication). After completing the address settings, etc., close and securely tighten the switch cover. (Proper tightening torque 0.3 N·m)

n-th station– – 3rd station | 2nd station | 1st station | Manifold station No. | 1st station | 2nd station | 3rd station – –n-th station

Correspondence of PLC address No. and serial transmission device unit I/O No.

For hexadecimal notation

Serial transmission device unit I/O No.		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Output dedicated	EtherCAT EtherNet/IP CC-Link IEF Basic PROFINET	Y00	Y01	Y02	Y03	Y04	Y05	Y06	Y07	Y08	Y09	Y0A	Y0B	Y0C	Y0D	Y0E	Y0F																
I/O mixed	EtherCAT EtherNet/IP CC-Link IEF Basic PROFINET	X00	X01	X02	X03	X04	X05	X06	X07	X08	X09	X0A	X0B	X0C	X0D	X0E	X0F	Y00	Y01	Y02	Y03	Y04	Y05	Y06	Y07	Y08	Y09	Y0A	Y0B	Y0C	Y0D	Y0E	Y0F

For decimal notation

Serial transmission device unit I/O No.		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Output dedicated	EtherCAT EtherNet/IP CC-Link IEF Basic PROFINET	Y000	Y001	Y002	Y003	Y004	Y005	Y006	Y007	Y008	Y009	Y010	Y011	Y012	Y013	Y014	Y015																
I/O mixed	EtherCAT EtherNet/IP CC-Link IEF Basic PROFINET	X000	X001	X002	X003	X004	X005	X006	X007	X008	X009	X010	X011	X012	X013	X014	X015	Y000	Y001	Y002	Y003	Y004	Y005	Y006	Y007	Y008	Y009	Y010	Y011	Y012	Y013	Y014	Y015

I/O numbers corresponding to I/O No. of wiring method T7*

unit	Max. No. of inputs / Number of input blocks	Max. output points / Number of output blocks	Number of valve SOL points	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
· T7*1 · T7*P1	–	–	16 points	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16																
· T7*2 · T7*P2	–	–	32 points	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
· T7*B7 · T7*PB7	1 block (4 points)	–	16 points	1-0	1-1	1-2	1-3													s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
		1 unit	12 points	1-0	1-1	1-2	1-3													s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	2-0	2-1	2-2	2-3
		2 units	8 points	1-0	1-1	1-2	1-3													s1	s2	s3	s4	s5	s6	s7	s8	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3
	2 blocks (8 points)	–	16 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3									s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
		1 unit	12 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3									s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	3-0	3-1	3-2	3-3
		2 units	8 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3									s1	s2	s3	s4	s5	s6	s7	s8	3-0	3-1	3-2	3-3	4-0	4-1	4-2	4-3
	3 blocks (12 points)	–	16 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3					s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
		1 unit	12 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3					s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	4-0	4-1	4-2	4-3
		2 units	8 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3					s1	s2	s3	s4	s5	s6	s7	s8	4-0	4-1	4-2	4-3	5-0	5-1	5-2	5-3
	4 blocks (16 points)	–	16 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3	4-0	4-1	4-2	4-3	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
		1 unit	12 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3	4-0	4-1	4-2	4-3	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	5-0	5-1	5-2	5-3
		2 units	8 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3	4-0	4-1	4-2	4-3	s1	s2	s3	s4	s5	s6	s7	s8	5-0	5-1	5-2	5-3	6-0	6-1	6-2	6-3

☐ : Valve SOL output

■ : Output block

▨ : Input block

Valve No. layout corresponding to wiring method T7* solenoid output No. (example)

* The numerals of valve numbers 1a, 1b, 2a, 2b ... indicate the order of stations first station, second station... and the letters "a" and "b" indicate the "a side" solenoid and "b side" solenoid, respectively. The manifold's max. station number differs depending on the model. Check the specifications of each model.

[Standard wiring] ● For single solenoid valve (Max. 16 stations)

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a	16a																

● For double solenoid valve

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b	16a	16b

● For mixed use (single/double mixture) (Max. 16 stations)

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	7a	7b	8a	9a	10a	10b	11a	11b	12a	13a	14a	14b	15a	15b	16a									

[Double wiring] ● For single solenoid valve

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	(Blank)	2a	(Blank)	3a	(Blank)	4a	(Blank)	5a	(Blank)	6a	(Blank)	7a	(Blank)	8a	(Blank)	9a	(Blank)	10a	(Blank)	11a	(Blank)	12a	(Blank)	13a	(Blank)	14a	(Blank)	15a	(Blank)	16a	(Blank)

● For double solenoid valve

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b	16a	16b

● For mixed use (single/double mixture)

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	(Blank)	2a	(Blank)	3a	3b	4a	4b	5a	(Blank)	6a	(Blank)	7a	7b	8a	(Blank)	9a	(Blank)	10a	(Blank)	11a	11b	12a	12b	13a	(Blank)	14a	(Blank)	15a	15b	16a	(Blank)

Technical data ❷ Notes on wiring; Serial transmission

Model No.	LED display	Wiring method

T7EC*

RUN ☐
ERR ☐
L/A IN ☐
L/A OUT ☐
INFO ☐
PW ☐
PW(V) ☐

LED name	Display description
RUN	Communication status of EtherCAT is indicated by the LED (green) state (OFF/ON/blinking) (Green lamp is ON during normal communication)
ERR	Abnormal status of EtherCAT is indicated by the LED (red) state (OFF/ON/blinking) (lamp is OFF during normal communication)
L/A IN	Status of the Ethernet port (IN side) is indicated by the LED (green) state (OFF/ON/rapid blinking)
L/A OUT	Status of the Ethernet port (OUT side) is indicated by the LED (green) state (OFF/ON/rapid blinking)
INFO	Error status of the device unit is indicated by the LED (red) (OFF during normal communication)
PW	Lights when unit power is ON. Green lamp is ON when normal
PW(V)	Lights when valve power is ON. Green lamp is ON when normal (Cannot be monitored when the unit power is not turned ON)

M12 4-pin socket D cord
M12 4-pin socket D cord
M12 4-pin plug A cord

Unit power supply: 0V
Valve power supply: 24V
Unit power supply: 24V
Valve power supply: 0V

Communication connector pin array

M12 pins		Signal name	Function
OUT	1	TD+	Transmitted data, positive
	2	RD+	Received data, positive
	3	TD-	Transmitted data, negative
	4	RD-	Received data, negative
IN	1	TD+	Transmitted data, positive
	2	RD+	Received data, positive
	3	TD-	Transmitted data, negative
	4	RD-	Received data, negative

· The unit power supply (communication power supply) and the valve power supply are separate power supplies.
  Supply power from the power supply connector (24 VDC). (Use M12 connector)
· Connect the EtherCAT cable to the communication connector (IN).
  (use M12 connector)
· Prepare a connector to be used on the wiring end.

T7EN*

MS ☐
NS ☐
L/A IN ☐
L/A OUT ☐
ST ☐
PW(V) ☐

LED name	Display description
MS	Status of device unit related to EtherNet/IP indicated by LED color (green/red) and ON status (ON/blinking)
NS	Status of network related to EtherNet/IP indicated by LED color (green/red) and ON status (ON/blinking)
L/A IN	Status of Ethernet port (IN side) indicated by LED color (green/yellow)
L/A OUT	Status of Ethernet port (OUT side) indicated by LED color (green/yellow)
ST	Status of device unit indicated by LED color (green/yellow) and ON status (ON/blinking)
PW(V)	Indicates valve power supply power status. Green lamp ON when powered ON (Cannot be monitored when unit power is not turned ON)

M12 4-pin socket D cord
M12 4-pin socket D cord
M12 4-pin plug A-cord

Communication connector pin array

Port	Pin	Signal name	Function
IN OUT	1	TD+	Transmitted data, positive
	2	RD+	Received data, positive
	3	TD-	Transmitted data, negative
	4	RD-	Received data, negative

CKD

Model No.	LED display	Wiring method

T7EB*

RUN ☐
ERR ☐
L/A IN ☐
L/A OUT ☐
INFO ☐
PW ☐
PW(V) ☐

LED name	Display description
RUN	Status of CC-Link IEF Basic communication indicated by LED ON status (ON/blinking)
ERR	Status of CC-Link IEF Basic abnormal communication indicated by LED ON status (ON/blinking)
L/A IN	Status of Ethernet port (IN side) indicated by ON LED status (ON/blinking)
L/A OUT	Status of Ethernet port (OUT side) indicated by LED ON status (ON/blinking)
INFO	Status of device unit indicated by LED ON status (ON/blinking)
PW	Indicates unit power supply power status. Green lamp ON when powered ON
PW(V)	Indicates valve power supply power status. Green lamp ON when powered ON (Cannot be monitored when unit power is not turned ON)

OUT — M12 4-pin socket D cord
IN — M12 4-pin socket D cord
FG
PWR — M12 4-pin plug A-cord

Communication connector pin array

Port	Pin	Signal name	Function
IN OUT	1	TD+	Transmitted data, positive
	2	RD+	Received data, positive
	3	TD-	Transmitted data, negative
	4	RD-	Received data, negative

T7EP*

RUN ☐
ERR ☐
L/A IN ☐
L/A OUT ☐
INFO ☐
PW ☐
PW(V) ☐

LED name	Display description
RUN	Communication status of PROFINET indicated by LED ON status (ON/blinking)
ERR	Abnormal communication status of PROFINET indicated by LED ON status (ON/blinking)
L/A IN	Status of Ethernet port (IN side) indicated by ON LED status (ON/blinking)
L/A OUT	Status of Ethernet port (OUT side) indicated by LED ON status (ON/blinking)
INFO	Status of device unit indicated by LED ON status (ON/blinking)
PW	Indicates unit power supply power status. Green lamp ON when powered ON
PW(V)	Indicates valve power supply power status. Green lamp ON when powered ON (Cannot be monitored when unit power is not turned ON)

OUT — M12 4-pin socket D cord
IN — M12 4-pin socket D cord
FG
PWR — M12 4-pin plug A-cord

Communication connector pin array

Port	Pin	Signal name	Function
IN OUT	1	TD+	Transmitted data, positive
	2	RD+	Received data, positive
	3	TD-	Transmitted data, negative
	4	RD-	Received data, negative

W4G4 Series

Waterproof connector

For EtherCAT

● For EtherCAT connector

(Plug)   M12x1
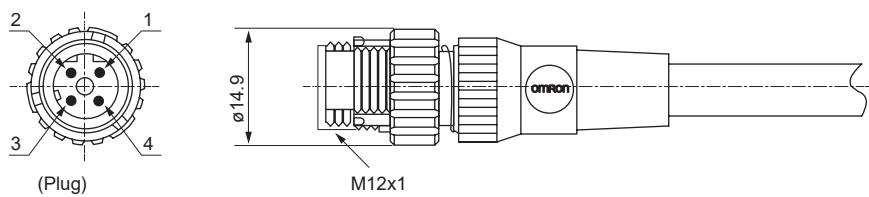
Pin No.	Signal name	Function
1	TD+	Transmitted data, positive
2	RD+	Received data, positive
3	TD-	Transmitted data, negative
4	RD-	Received data, negative

For wiring method, refer to the following communication connector pin layout and communication cable wiring example.
Use CAT5 or higher for communication cable lines.

Recommended M12-RJ45 communication cable with connector
· Type XS5W-T421-□MC-K   Straight OMRON
· No. 0945 700 50□□   Straight HARTING

Recommended communication plug and cable
· No. 0945 600 01□□   Cable single unit HARTING
· No. 2103, 281, 1405   Assembly M12 connector HARTING
· No. 0945, 151, 1100   Assembly RJ-45 connector HARTING

● Connector for power supply
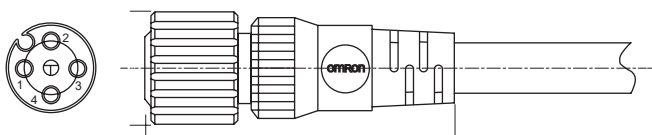
Pin No.	Description
1	Unit power supply + side (24 VDC)
2	Valve power supply + side
3	Unit power supply - side (0 V)
4	Valve power supply - side

Recommended M12 loose wire power cable
·Type XS2F-D421-□8□-□ Straight OMRON

Recommended communication plug and power cable
· No. 2103 212 2305   Assembly M12 connector HARTING
·Electric wire size: AWG22-18, Applicable cable diameter: ø6 to 8

* □ differs depending on the cable specifications.

Connection method

OUT
IN
Power supply

CKD
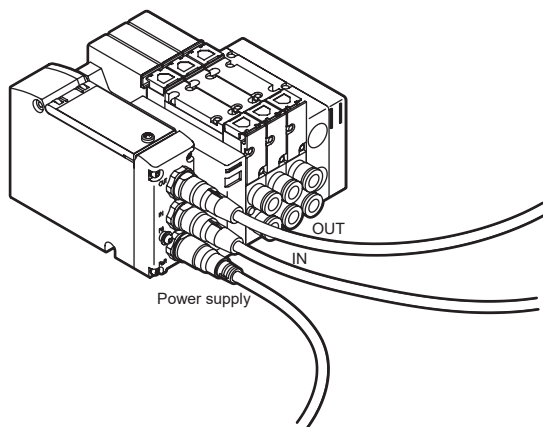
Exploded view of block manifold

Valve set screw
Single solenoid valve
Gasket
With AC specifications
Tie rod mounting screw
End block R
Tie rod
Discrete valve block with solenoid valve
Discrete valve block
Wiring block
Gasket
End block L

Example of disassembly: MW4GB4 with common terminal block
Left side wiring specifications

Valve set screw
Single solenoid valve
Gasket
Tie rod mounting screw
End block R
Tie rod
Discrete valve block with solenoid valve
Block gasket
Discrete valve block
Wiring block assembly
Serial transmission device unit
Hexagon socket head cap screw
Serial transmission device unit
Hexagon socket head cap screw
I/O block
End block

When with I/O block

Example of disassembly: MW4GB4 serial transmission device unit
For T7*

MW4G4 Series

Technical data ❸ How to expand reduced wiring manifold

Removing the wiring cover

T10/T10R

Mounting screw
Tightening torque
0.6 to 0.65 N·m
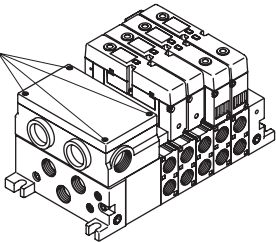
T30/T30R

Mounting screw
Tightening torque
0.6 to 0.65 N·m
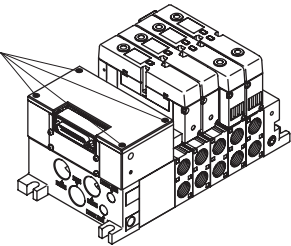
T7*

Mounting bolt
Tightening torque
1.15 to 1.25 N·m
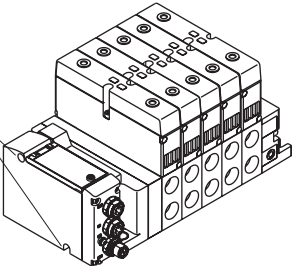
Increasing the valve blocks

(1) Remove the tie rod set screws.

(2) Remove the blocks up to the unit increase location.

(3) Install a tie rod for the units being increased.

(4) Mount the valve block to be added.

(5) Press so that there is no gap between blocks, and fasten with the hexagon socket head cap screw. (Tightening torque: 7.0 to 8.0N·m)

Replacing valves

Removing method

(1) Loosen the mounting screws (2 positions).

(2) Remove the valve from the valve block.

Installation method

Follow the removal procedure in reverse.

Refer to the table below for the recommended tightening torque for the mounting screws.

Recommended tightening torque for the valve set screw

	Size	Recommended tightening torque (N·m)
W4G4	M4	2.4 to 2.6

CKD

MEMO

Technical data ❸ How to expand reduced wiring manifold

Instructions for connecting T10 wiring base (standard wiring)

The correspondence rules for connector and valve on the wiring base vary depending on the reduced wiring specifications (T10). For connector wiring, check the connector No. printed on the base. For wiring of mix (consolidation), the manifold configuration as shown in the figure below is indicated as an example.

Instructions for connecting T10 wiring base (double wiring)

The double wiring specifications correspond to the wiring of the double solenoid, regardless of the switching position classification of the solenoid valve to be mounted. The standard wiring and the double SOL only of double wiring have the same wiring.

Single Single Single Double Double Single Double

T10 (standard wiring)

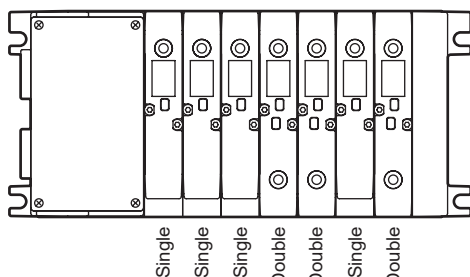**Wiring base assembly**

Wire in the order shown by the arrow

Correspondence to valve

1) For single SOL (MF station No. max. 16 stations)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	16a	15a	14a	13a	12a	11a	10a
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	9a	8a	7a	6a	5a	4a	3a	2a	1a	COM

2) For double SOL (MF station No. max. 8 stations)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	8b	8a	7b	7a	6b	6a	5b
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	4b	4a	3b	3a	2b	2a	1b	1a	COM

3) For mix (consolidation) (Number of solenoid valves up to 16 points)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	7b
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	7a	6a	5b	5a	4b	4a	3a	2a	1a	COM

T10 (double wiring)

Wiring base assembly

Wire in the order shown by the arrow

Correspondence to valve

1) For single SOL (MF station No. max. 8 stations)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	(Blank)	8a	(Blank)	7a	(Blank)	6a	(Blank)
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	(Blank)	4a	(Blank)	3a	(Blank)	2a	(Blank)	1a	COM

2) For double SOL (MF station No. max. 8 stations)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	8b	8a	7b	7a	6b	6a	5b
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	4b	4a	3b	3a	2b	2a	1b	1a	COM

3) For mix (consolidation) (Number of solenoid valves up to 16 points)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Blank)	(Blank)	(Blank)	(Blank)	7b	7a	(Blank)	6a	5b
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	4b	4a	(Blank)	3a	(Blank)	2a	(Blank)	1a	COM

*1 Expansion wiring will be necessary only in the case of AC specifications.
*2 With AC, when a change of specifications is expected, use the masking plate equipped valve block as a spare block.

CKD

How to expand reduced wiring manifold (Custom made. Consult with CKD.)

Instructions for connecting T30 wiring base (standard wiring)

The correspondence rules for connector and valve on the wiring base vary depending on the reduced wiring specifications (T30). For connector wiring, check the connector No. printed on the base. For wiring of mix (consolidation), the manifold configuration as shown in the figure below is indicated as an example.

Single | Single | Double | Double | Single | Single | Double

Instructions for connecting T30 wiring base (double wiring)

The double wiring specifications correspond to the wiring of the double solenoid, regardless of the switching position classification of the solenoid valve to be mounted. The standard wiring and the double SOL only of double wiring have the same wiring.

Standard wiring — T30

Wiring base assembly

Wire in the order shown by the arrow

Correspondence to valve

1) For single solenoid valve
   (MF max. station number 16 stations)

Connector No.	18	17	16	15	14	13	12	11	10
Valve No.	(Blank)	(Blank)	16a	15a	14a	13a	12a	11a	10a
Connector No.	9	8	7	6	5	4	3	2	1
Valve No.	9a	8a	7a	6a	5a	4a	3a	2a	1a

2) For double solenoid valve
   (MF max. station number 8 stations)

Connector No.	18	17	16	15	14	13	12	11	10
Valve No.	(Blank)	(Blank)	8b	8a	7b	7a	6b	6a	5b
Connector No.	9	8	7	6	5	4	3	2	1
Valve No.	5a	4b	4a	3b	3a	2b	2a	1b	1a

3) For mixed use (single/double mixture)
   (Number of solenoid valves up to 16 points)

Connector No.	18	17	16	15	14	13	12	11	10
Valve No.	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	(Blank)	7b
Connector No.	9	8	7	6	5	4	3	2	1
Valve No.	7a	6a	5a	4b	4a	3b	3a	2a	1a

Double wiring — T30

Wiring base assembly

Wire in the order shown by the arrow

Correspondence to valve

1) For single solenoid valve
   (MF max. station number 8 stations)

Connector No.	18	17	16	15	14	13	12	11	10
Valve No.	(Blank)	(Blank)	(Blank)	8a	(Blank)	7a	(Blank)	6a	(Blank)
Connector No.	9	8	7	6	5	4	3	2	1
Valve No.	5a	(Blank)	4a	(Blank)	3a	(Blank)	2a	(Blank)	1a

2) For double solenoid valve
   (MF max. station number 8 stations)

Connector No.	18	17	16	15	14	13	12	11	10
Valve No.	(Blank)	(Blank)	8b	8a	7b	7a	6b	6a	5b
Connector No.	9	8	7	6	5	4	3	2	1
Valve No.	5a	4b	4a	3b	3a	2b	2a	1b	1a

3) For mixed use (single/double mixture)
   (Number of solenoid valves up to 16 points)

Connector No.	18	17	16	15	14	13	12	11	10
Valve No.	(Blank)	(Blank)	(Blank)	(Blank)	7b	7a	(Blank)	6a	(Blank)
Connector No.	9	8	7	6	5	4	3	2	1
Valve No.	5a	4b	4a	3b	3a	(Blank)	2a	(Blank)	1a

*1 Expansion wiring will be necessary only in the case of AC specifications.
*2 With AC, when a change of specifications is expected, use the masking plate equipped valve block as a spare block.