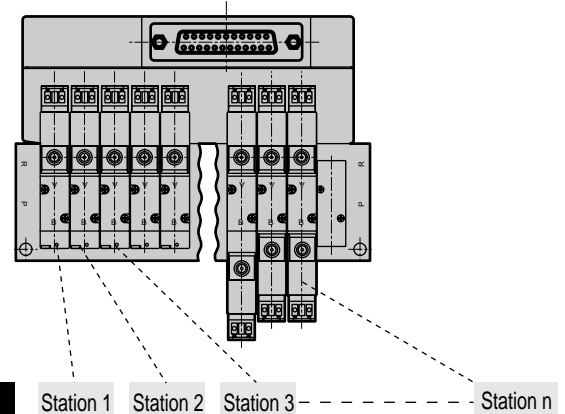


D-sub connector type: Wiring method T30/T31

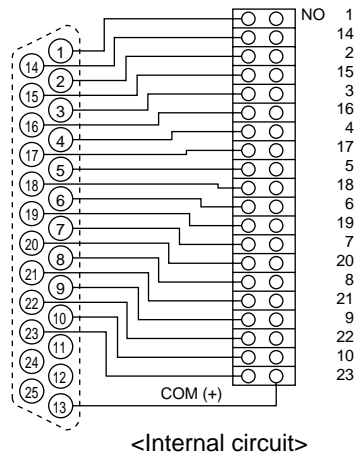
About T30/T31 connector

The connector for the wiring method T30 and T31, which is usually called as the D-sub connector. This connector is widely used in Factory and Office Automation equipment. The 25P type conformable with RS2323C standard, in particular, is used for personal computer communication. Facing to solenoid side b (cap side for single solenoid), the manifold station numbers are allocated form left.



Cautions for connector type T30/T31

- 1) Signal array of PC output unit and valve side should be matched.
- 2) Power source is DC24V or DC12V.
- 3) Voltage drop may occur depending on simultaneous energizing or cable length. Voltage drop of solenoid should be within 10% of rated voltage.
- 4) + COM specifications.



Connector pin array of wiring method T30/T31 (e.g.)

*1: For valve No. 1a, 1b, 2a, 2b..., numbers show the station 1, 2..., while alphabets a, b show a or b side solenoid.

• When single solenoid valve
(Up to 20 station manifold)

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	17a	19a			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	18a	20a			

• When double solenoid valve
(Up to 10 station manifold)

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	9a	10a			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	9b	10b			

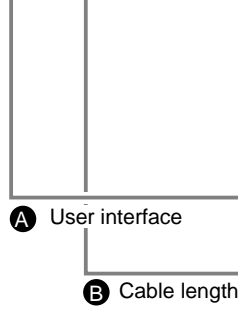
• When mix (single/double mixture)
(Up to 20 solenoids)

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	12b	14a			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	13a	15a			

Technical data 1) Caution for wiring diagram: D-sub connector

How to order cable with D-sub connector

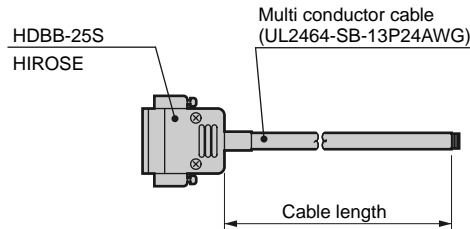
N4T - **CABLE** - **D00** - **1**



Symbol		Model
		N4T
A	0	Cut only
	1	M3.5 round terminal
B	1	1m
	3	3m
	5	5m

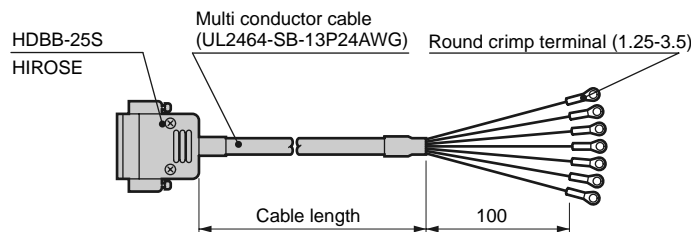
D-sub connector terminal No. and conductor

• N4T-CABLE-D00- *



D-sub connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Color of isolator	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Type of mark	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 points	2 points	2 points
	Color of mark	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
D-sub connector terminal No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor I.D.	Color of isolator	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Type of mark	2 points	2 points	2 points	2 points	2 points	2 points	2 points	3 points	3 points	3 points	3 points	3 points	
	Color of mark	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	

• N4T-CABLE-D01- *



D-sub connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Color of isolator	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Type of mark	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 points	2 points	2 points
	Color of mark	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
Mark tube No.		1	2	3	4	5	6	7	8	9	10	Cut	Cut	13
D-sub connector terminal No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor I.D.	Color of isolator	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Type of mark	2 points	2 points	2 points	2 points	2 points	2 points	2 points	3 points	3 points	3 points	3 points	3 points	
	Color of mark	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	
Mark tube No.		14	15	16	17	18	19	20	21	22	23	Cut	Cut	

• This cable is compatible with 20 points. When 21 points over are required, please use D00- * type above.

4SA/B0
4SA/B1
4GA/B
MN4GA/B
4GA/B (master)
MN3S0/
MN4S0
4TB
4L2-4/
LMFO
4KA/B
4F
PV5/
CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/
NVP
4F**0E
HMV/
HSV
Uniwire
system
SKH
PCD/
FS/FD
5 port pilot operated valve

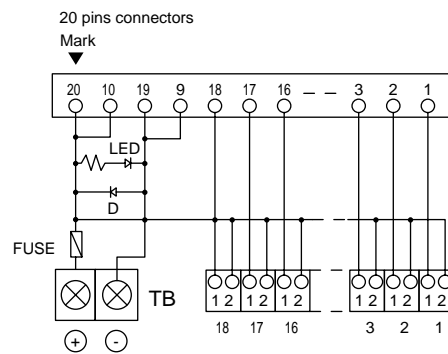
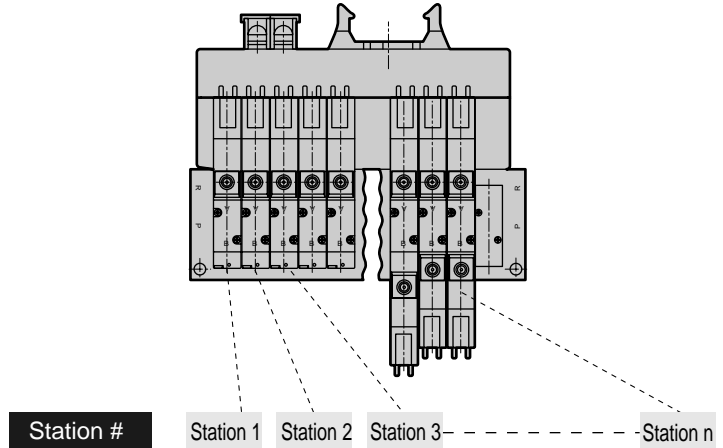
Flat cable connector type: Wiring method T50

About T50 connector

Wiring method T50 connector is conformable with MIL standards (MIL-C-83503). Easy wiring is realized with flat cable pressure welding. Pin No. index may differ depending on PLC maker but allocation of function is same. For either plug or socket, when connecting the cable, match the set mark (▼). Facing to Solenoid b side (when single, cap side), station # is allocated from left.

Cautions for connector type T50

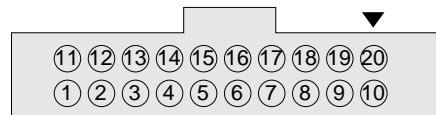
- (1) Signal arrays of PLC output unit and valve side should be matched. Since the interface of PLC is not always compatible, the cable compatible with each PLC maker should be used.
- (2) Power source is DC24V or DC12V.
- (3) When connecting T50 type to a common output unit, use + terminal (20, 10) of 20P connector as + side common, while use NPN transistor output open collector type for the drive circuit.
- (4) Don't connect this manifold to the input unit. If connected, serious failures will be caused not only in these components but also periphery devices. Connect this manifold to the output unit properly.
- (5) Voltage drop may occur depending on simultaneous energizing or cable length. Voltage drop of solenoid should be within 10% of rated voltage.



<Internal circuit>

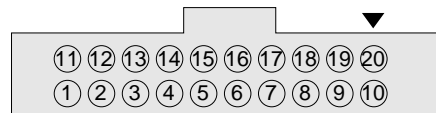
Connector pin array of wiring method T50 (e.g.)

- 1: For valve No. 1a, 1b, 2a, 2b..., numbers show station 1, 2..., while alphabets a, b show a or b side solenoid.



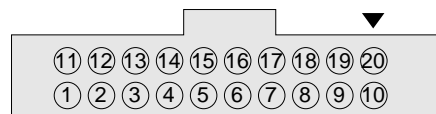
- When single solenoid valve (Up to 16 station manifold)

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	9a	10a	11a	12a	13a	14a	15a	16a	- power	+ power
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	- power	+ power



- When double solenoid valve (Up to 8 station manifold)

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	5b	6a	6b	7a	7b	8a	8b	- power	+ power
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	- power	+ power

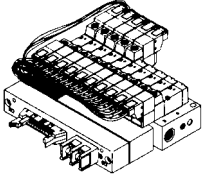
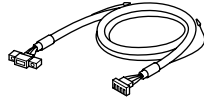
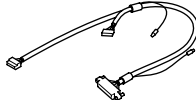
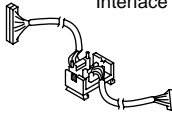
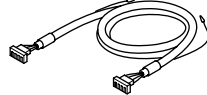
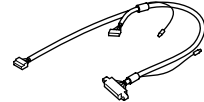
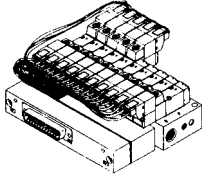
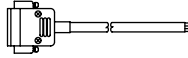
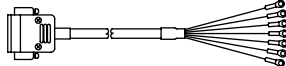


- When mix (single/double mixture) (Up to 16 solenoids)

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	7a	7b	8a	9a	10a	10b	11a	11b	- power	+ power
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	- power	+ power

Technical data 2) : Caution for wiring diagram: Examples of wiring

Examples of wiring (recommended combinations)

Wiring methods	Example of connecting cable	PC and PC related products		
		Maker	PC	Connection cable
Flat cable connector (T50) 		OMRON	Type C200H-OD215 Type C500-OD415CN	Type G79- * C
			Type C500-OD213	Type 79- 0 * DC-*
	Interface OPC-31 	MITSUBISHI	AY42 Voltage of power supply should be within 0 to +10% of rated voltage.	40P flat cable connector, interface OPC-31 (CKD) and 20P flat cable connector
		MATSUSHITA ELECTRIC WORKS LTD.	AFP33484	AY15133 to 7
			AFP53487	AY15223 to 7
	D-sub connector radial (T30) D-sub connector axial (T31) 			
				

*: For power voltage to drive valves, when setting, voltage drop of PLC and flat cable should be considered.

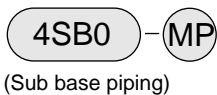
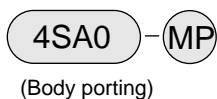
How to order manifold base/masking plate

• Manifold base



Symbol	Descriptions
2 to 20	2 to 20 station

• Masking plate (gasket, set screw attached)



4SA/B0

4SA/B1

4GA/B

MN4GA/B

4GA/B (master)

MN3S0/

MN4S0

4TB

4L2-4/

LMFO

4KA/B

4F

PV5/

CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/

NVP

4F**0E

HMV/

HSV

Uniwire

system

SKH

PCD/

FS/FD

5 port pilot operated valve

4SA0/4SB0 Series

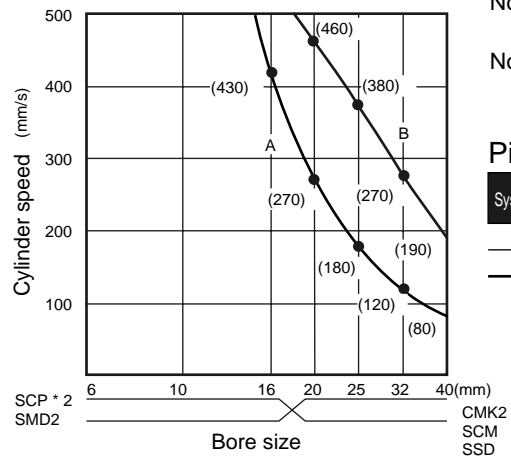
Technical data 3) System components selection guide/connector wiring method

Pneumatic components selection guide

Pneumatic system selection guide

Average speed of cylinder is found according to combination of 4SA0/4SB0 series and piping system.

The average speed is calculated as the travel distance divided by travel time from the beginning of movement to the end . When load factor is 50%, the cylinder speed should be half.



Clean air system components

Product name	Model No.	Port size (Note 1)	Max. flow rate [ℓ /min (ANR)] (Note 2)
F.R.L. kit	K60570-1C-GB	Rc1/8(6A)	200
	C1000-6	Rc1/8(6A)	450
F.R. unit	W1000-6	Rc1/8(6A)	830
Air filter (F)	F1000-6	Rc1/8(6A)	460
Regulator (R)	B2019-1C	Rc1/8(6A)	500
	R1000-6	Rc1/8(6A)	770
Lubricator (L)	A3019-1C	Rc1/8(6A)	100
	L1000-6	Rc1/8(6A)	550

Note 1. Rc and PT are same.

Note 2. F.R.L. kit, F.R. unit, regulator

Primary pressure 0.7MPa, set pressure 0.5MPa, pressure drop 0.1MPa

Note 3. Air filter, lubricator

Primary pressure 0.7MPa, pressure drop 0.02MPa

Piping system

System No.	Flow control valve	Silencer	Pipe pipe length between valve and cylinder	Composite effective sectional area	Max. flow rate [ℓ/min (ANR)] P=0.5 MPa
A	SC-M5	-	4 dia. X 2.5 dia. nylon tube (1m)	0.5mm ²	34
B	SC1-6	SL-M5	6 dia. X 4 dia. nylon tube (1m)	1.3mm ²	84

C/D-connector wiring method (wire (1) to (4) according to the diagram below.)

