KOGANEI

DeviceNet compatible

Serial transmission compatible manifold

User's Manual

Ver. 1.0

Supported solenoid valves

● F series

DeviceNet™
CONFORMANCE TESTED

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Serial transmission compatible manifold

User's Manual

This user's manual describes the serial transmission block so that the serial transmission compatible manifold and solenoid valves can be used correctly. See the individual catalogs or the valves general catalog for information about the relevant manifolds and the valves.

To use these products correctly, you must first read the documentation.

⚠ CAUTION

This product does not have the appropriate functions to support applications, such as safety equipment or accident prevention systems, that require high levels of safety.

• Do not put the communication cables near or in bundles with power lines.

• This manual is for the F series solenoid valves. Contact us if you are using a different series of solenoid valves.

1. Specifications

■ General specifications

Item Model	YS6D1 (16 outputs) and YS6D3 (32 outputs)
Power supply voltage	24 VDC ±10%
Power consumption	3 W or less (YS6D1), 4 W or less (YS6D3) excluding solenoid valve
Operating temperature range	5 to 50°C [41 to 122°F]
Operating humidity range	35 to 85% RH (Non-condensation)
Operating atmosphere	No corrosive gases and no excessive dust
Vibration resistance	49.0 m/s^2 [5 G]
Shock resistance	98.1 m/s ^{2} [10 G]
Dielectric strength	1000 VAC for 1 minute (between all external terminals and the case)
Noise resistance	IEC61000-4-4 compliant 2 kV (power line)
Insulation resistance	10 MΩ or more (between all external terminals and the case, using a 500 VDC insulation tester)

＊The above specifications are for the serial transmission block itself. You must consider the specifications for the solenoid valves that are mounted regarding the installation and operation in your operating environment. See the valves general catalog or the catalogs for relevant solenoid valves regarding specifications for the solenoid valves and other parts.

■ DeviceNet features

Device type: Generic Device		Master / Scanner	–
Explicit Peer to Peer message	N	I/O Slave message	–
I/O Peer to Peer message	N	Bit Strobe	Y
Configuration Consistency value	N	Polling	Y
Fault node recovery	N	Cyclic	N
Baud Rate 125 k / 250 k / 500 k	Y	Change of State	N

2. About serial transmission blocks YS6D1 and YS6D3

2-1. Names of parts of the LED display panel

LED display panel
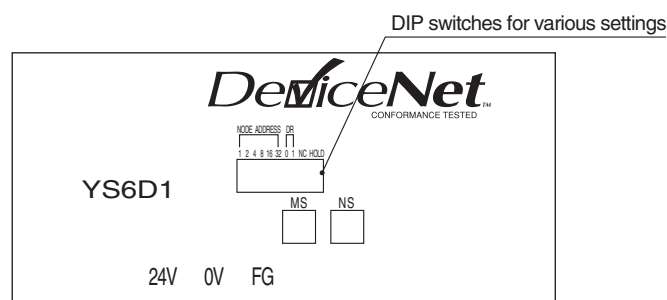
＊The illustration above shows the panel for the YS6D1, but it is the same for the YS6D3.
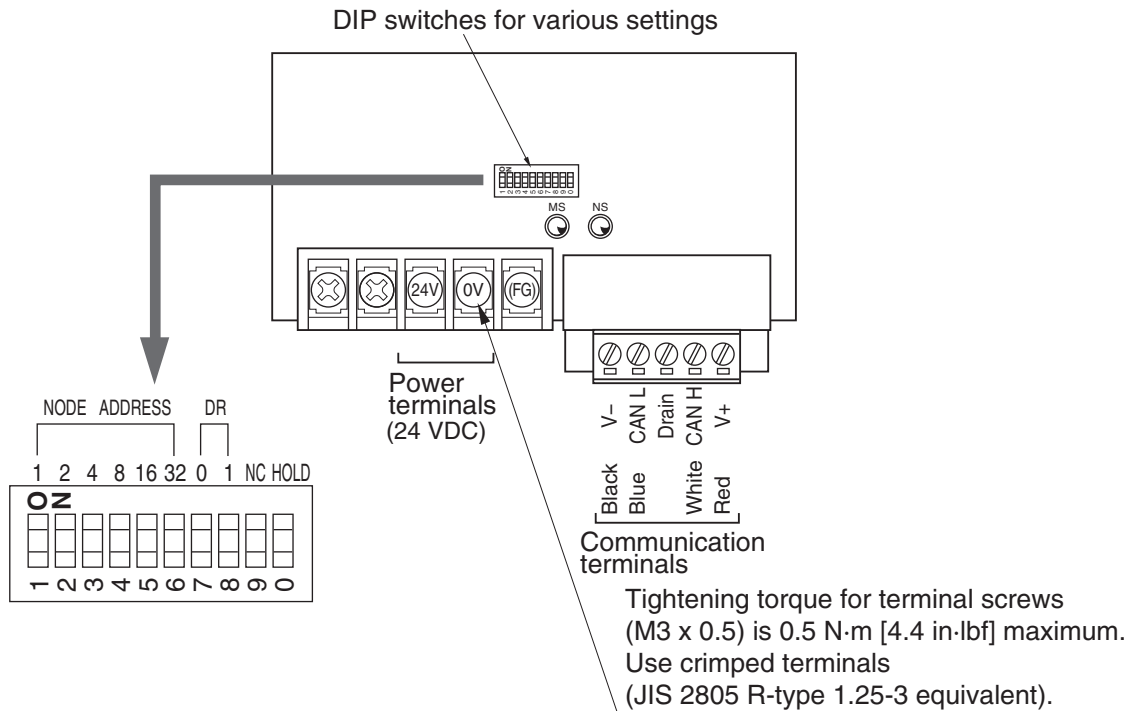
Description of LED display

Name	State	Color	Description
MS	Lit	Green	Normal state
	Flashing		Unset state
	Lit	Red	Fatal failure
	Flashing		Minor failure
	Off	—	No power supply
NS	Lit	Green	Communication connection complete
	Flashing		Communication unconnected
	Lit	Red	Fatal communication abnormality
	Flashing		Minor communication abnormality
	Off	—	No power supply

2-2. Settings and wiring

Open the wiring cover and use a flat blade screwdriver to set the DIP switches.

Caution 1: Always turn off the power supply before doing settings.

2: Connect a termination resistance between CAN H and CAN L if necessary.

DIP switches for various settings

MS NS

24V 0V (FG)

Power
terminals
(24 VDC)

V–
CAN L
Drain
CAN H
V+

Black
Blue
White
Red

Communication
terminals

NODE ADDRESS DR

1 2 4 8 16 32 0 1 NC HOLD

ON

1 2 3 4 5 6 7 8 9 0

Tightening torque for terminal screws
(M3 x 0.5) is 0.5 N·m [4.4 in·lbf] maximum.
Use crimped terminals
(JIS 2805 R-type 1.25-3 equivalent).

① Address setting (NODE ADDRESS) 0: OFF
1: ON

Node address	SW 1 1	SW 2 2	SW 3 4	SW 4 8	SW 5 16	SW 6 32
0	0	0	0	0	0	0
1	1	0	0	0	0	0
2	0	1	0	0	0	0
3	1	1	0	0	0	0
4	0	0	1	0	0	0
5	1	0	1	0	0	0
6	0	1	1	0	0	0
7	1	1	1	0	0	0
8	0	0	0	1	0	0
9	1	0	0	1	0	0
10	0	1	0	1	0	0
11	1	1	0	1	0	0
12	0	0	1	1	0	0
13	1	0	1	1	0	0
14	0	1	1	1	0	0
15	1	1	1	1	0	0
16	0	0	0	0	1	0
17	1	0	0	0	1	0
18	0	1	0	0	1	0
19	1	1	0	0	1	0
20	0	0	1	0	1	0
21	1	0	1	0	1	0
22	0	1	1	0	1	0
23	1	1	1	0	1	0
24	0	0	0	1	1	0
25	1	0	0	1	1	0
26	0	1	0	1	1	0
27	1	1	0	1	1	0
28	0	0	1	1	1	0
29	1	0	1	1	1	0
30	0	1	1	1	1	0
31	1	1	1	1	1	0

Node address	SW 1 1	SW 2 2	SW 3 4	SW 4 8	SW 5 16	SW 6 32
32	0	0	0	0	0	1
33	1	0	0	0	0	1
34	0	1	0	0	0	1
35	1	1	0	0	0	1
36	0	0	1	0	0	1
37	1	0	1	0	0	1
38	0	1	1	0	0	1
39	1	1	1	0	0	1
40	0	0	0	1	0	1
41	1	0	0	1	0	1
42	0	1	0	1	0	1
43	1	1	0	1	0	1
44	0	0	1	1	0	1
45	1	0	1	1	0	1
46	0	1	1	1	0	1
47	1	1	1	1	0	1
48	0	0	0	0	1	1
49	1	0	0	0	1	1
50	0	1	0	0	1	1
51	1	1	0	0	1	1
52	0	0	1	0	1	1
53	1	0	1	0	1	1
54	0	1	1	0	1	1
55	1	1	1	0	1	1
56	0	0	0	1	1	1
57	1	0	0	1	1	1
58	0	1	0	1	1	1
59	1	1	0	1	1	1
60	0	0	1	1	1	1
61	1	0	1	1	1	1
62	0	1	1	1	1	1
63	1	1	1	1	1	1

② Communication speed setting (DR)

0: OFF
1: ON

Communication speed	SW 7	SW 8
125 kbit/s	0	0
250 kbit/s	1	0
500 kbit/s	0	1

③ Abnormalities during transmission when setting hold/clear output (HOLD)

0: OFF
1: ON

Output state	SW 10
Hold output	1
Clear output	0

■ Power line connection

Connect the power line to the power terminals (24 V and 0 V) on the serial transmission block.
This power supply is for both driving the solenoid valves and for internal circuits in the transmission block.

Note
If you are supplying power from one source to multiple remote I/Os or to serial transmission compatible manifold solenoid valves; or if you are supplying power from far away, consider the voltage drop when selecting a power cable before you start wiring to assure you have a power supply voltage that is within the rated voltage (24 V ±10%).
If you cannot eliminate a voltage drop due to long wires, implement measures such as installing a separate power source close to the serial transmission compatible manifold solenoid valves.

3. Output relay and solenoid valve connections

The serial transmission block has 16 outputs, 0 to 15. Or, it has 32 outputs, 0 to 31. The relationship between the output relay numbers in the program and the actual mounted solenoid valves is shown below.

The relationship between all the solenoids on the manifold and output relay numbers is different depending on what is specified for "Wiring specifications" in the manifold ordering codes.

Wiring specifications   **Blank** (packed wiring): Wired according to specifications of mounted valves.
    -W (double wiring): All wiring is for double solenoids, regardless of the specifications of the mounted valves.

① **If wiring specifications are "blank" (packed wiring)**

The valves specified in the single solenoid specifications (**F□T1**) when ordering are wired to solenoid A only and are not wired to solenoid B because wiring is done according to specifications for the mounted valves.

This means that it cannot function as a double solenoid valve after it is delivered because no current flows to solenoid B, even if it is switched from a single solenoid valve to a double solenoid valve.
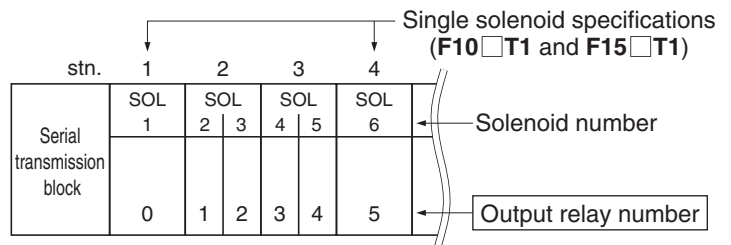
② **When wiring specifications are "-W" (double wiring)**

All wiring is for double solenoids.
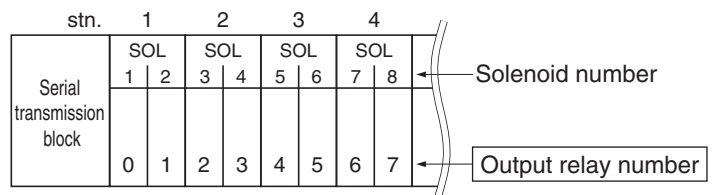
● For other information, detailed specifications, and precautions, see the product catalog.
● For inquiries about the product, contact our Overseas Department noted below.

KOGANEI CORPORATION