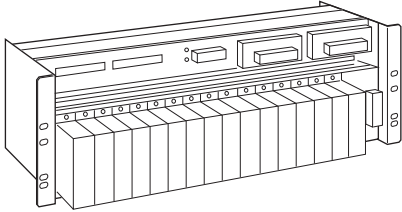


## High-density Signal Conditioners 10-RACK

### STANDARD RACK

#### Functions & Features

- Standard 19" rack for 10-RACK signal conditioners
- Line power supplied via the rear rack bus
- Dual-redundant power supply or two independent power sources selectable with AC power supply
- Supply pressure at manifold plug
- Direct interface to various DCS with the rack connector



### MODEL: 10BXC-[1][2]-[3][4]

#### ORDERING INFORMATION

- Code number: 10BXC-[1][2]-[3][4]
- Specify a code from below for each [1] through [4].  
(e.g. 10BXC-12-K2/Q)
- Specify the specification for option code /Q  
(e.g. /C01)

#### [1] FUNCTION

- 1: Power distribution
- 2: Power distribution & pressure supply

#### [2] CONNECTOR

- 0: None
- 1: Fujitsu FCN type I/O connector
  - 2: Yokogawa DCS connector (MAC2 dual redundant system use)
  - 3: Nippon Shokubai DCS connector
  - 4: Azbil DCS AI connector
  - 5: Azbil DCS AO connector
  - 6: Azbil DCS AI connector (ELCO connector)
  - 7: Azbil DCS AO connector (ELCO connector)
  - 8: Yokogawa DCS connector (VMx/PM1 dual redundant system use)
- E3:** Toshiba DCS SAIN1 card use  
(Panasonic AXM220001 used)  
(DISCONTINUED; replace with code "E3A".)
- E3A:** Toshiba DCS SAIN1 card supported  
(Omron XG4A-2031 used)
- H1:** Hitachi DCS connector  
**H2:** Hitachi DCS EX-CDL cable connector
- M-System guarantees the connecting section.

### [3] POWER SUPPLY UNIT

#### AC Power

- K:** 85 - 132 V AC; single power source  
(Operational voltage range 85 - 132 V, 47 - 63 Hz)
- K2:** 85 - 132 V AC; dual-redundant power supply  
(Operational voltage range 85 - 132 V, 47 - 63 Hz)
- KK:** 85 - 132 V AC; two independent power sources  
(Operational voltage range 85 - 132 V, 47 - 63 Hz)
- L:** 170 - 264 V AC; single power source  
(Operational voltage range 170 - 264 V, 47 - 63 Hz)
- L2:** 170 - 264 V AC; dual-redundant power supply  
(Operational voltage range 170 - 264 V, 47 - 63 Hz)

#### DC Power

- R:** 24 V DC; no power supply unit  
(Operational voltage range 24 V  $\pm$ 10 %, ripple 10 %p-p max.)

#### AC/DC Power

- KR:** 85 - 132 V AC / 24 V DC; two independent power sources  
(85 - 132 V, 47 - 63 Hz or 24V  $\pm$ 10 %, ripple 10 %p-p max.)  
(Redundant or independent power sources are recommended for long time use without interruption.)

### [4] OPTIONS

- blank:** none  
**/Q:** With options (specify the specification)

#### SPECIFICATIONS OF OPTION: Q

##### COATING (For the detail, refer to M-System's web site.)

- Power supply and signal conditioner side of the main PWB are not coated.
- /C01:** Silicone coating  
**/C02:** Polyurethane coating  
**/C03:** Rubber coating

#### RELATED PRODUCTS

- Blank filler plate (model: P-101)
- Connector terminal block (model: CNT)
- Special cable with 40-pin connector (model: FCN)

#### GENERAL SPECIFICATIONS

- Construction:** Metal plates assembly  
**Capacity:** 16 positions  
**Connection**
- Power input:** M4 screw terminals (torque 0.8 N·m)  
**Power alarm:** M4 screw terminals (torque 0.8 N·m)  
**Pneumatic:** Rc 3/8" female (torque  $\leq$  12 N·m)  
**Screw terminal:** Nickel-plated brass  
**Manifold:** Aluminium alloy  
**Isolation:** I/O connector to alarm output to power to FG  
**Power alarm output:** N.C. contact turns off at power failure or failure of power units. Supplied only with dual-redundant power supply or two independent power sources

**Power RUN LED:** Light turns on in normal conditions  
(supplied only with dual-redundant power supply or two independent power sources)

## OUTPUT SPECIFICATIONS

### ■ Alarm Output

(Supplied only with dual-redundant power supply or two independent power sources)

**Rated load:** 250 V AC @ 3 A (cos  $\phi$  = 1)

30 V DC @ 3 A (resistive load)

**Maximum switching voltage:** 250 V AC or 125 V DC

**Maximum switching power:** 750 VA or 60 W

**Minimum load:** 5 V DC @ 100 mA

**Mechanical life:**  $5 \times 10^6$  cycles (rate 180 cycles/min.)

## INSTALLATION

**Supply pressure:** Refer to the data sheet for I/P transducers  
(power distribution & pressure supply type)

### Power consumption

•AC: 130 VA min.

•DC: 2.5 A min.

**Operating temperature:** -5 to +55°C (23 to 131°F) 0 to 50°C  
(32 to 122°F) for AC power

**Operating humidity:** 30 to 90 %RH (non-condensing)

**Mounting:** JIS or EIA standard rack

### Weight

#### Single power supply w/o power units:

3.0 kg (6.6 lb) with DC power type

3.5 kg (7.7 lb) with AC power type

#### Dual-redundant or two independent power sources:

3.5 kg (7.7 lb) with AC/DC power type

4.0 kg (8.8 lb) with AC/AC power type

Add 2 kg (4.4 lb) for air manifold type.

## PERFORMANCE

**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  with 500 V DC

**Dielectric strength:** 500 V AC @ 1 minute (I/O connector to alarm output to power)

1500 V AC @ 1 minute (power to FG)

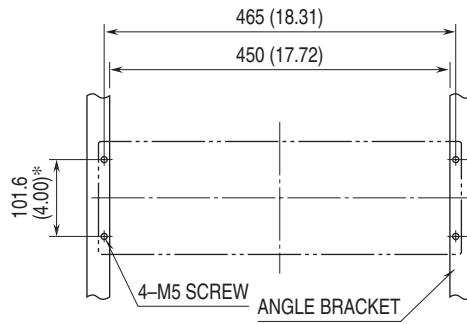
500 V AC @ 1 minute (I/O connector or alarm output to FG,

1000 AC with power input code R)

**Maximum supply pressure:** 196 kPa

(2 kgf/cm<sup>2</sup>, 1.96 bar, 28 psig)

## MOUNTING REQUIREMENTS



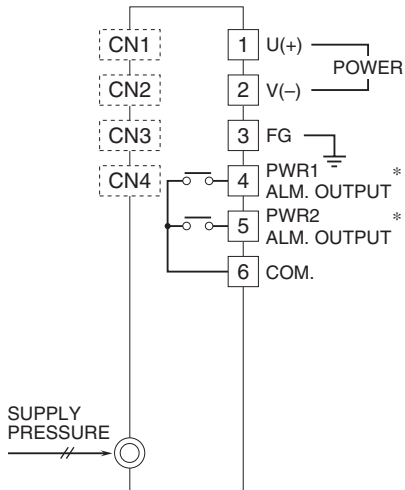
Observe an appropriate wiring space below.  
 \*100 (3.94) for JIS standard

## CONNECTION DIAGRAM

Remark 1: No.s of connectors may change with model suffix code.

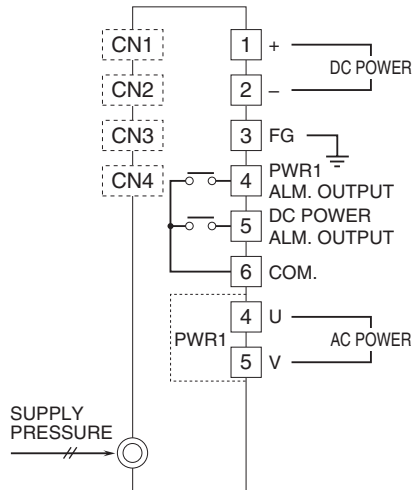
Remark 2: Supply pressure connection provided only for 10BXC-2.

### Single Power Source, Dual-redundant Power Supply

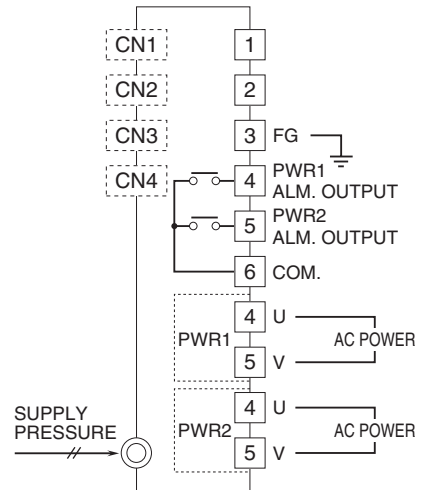


\*Alarm output not provided for single power supply.

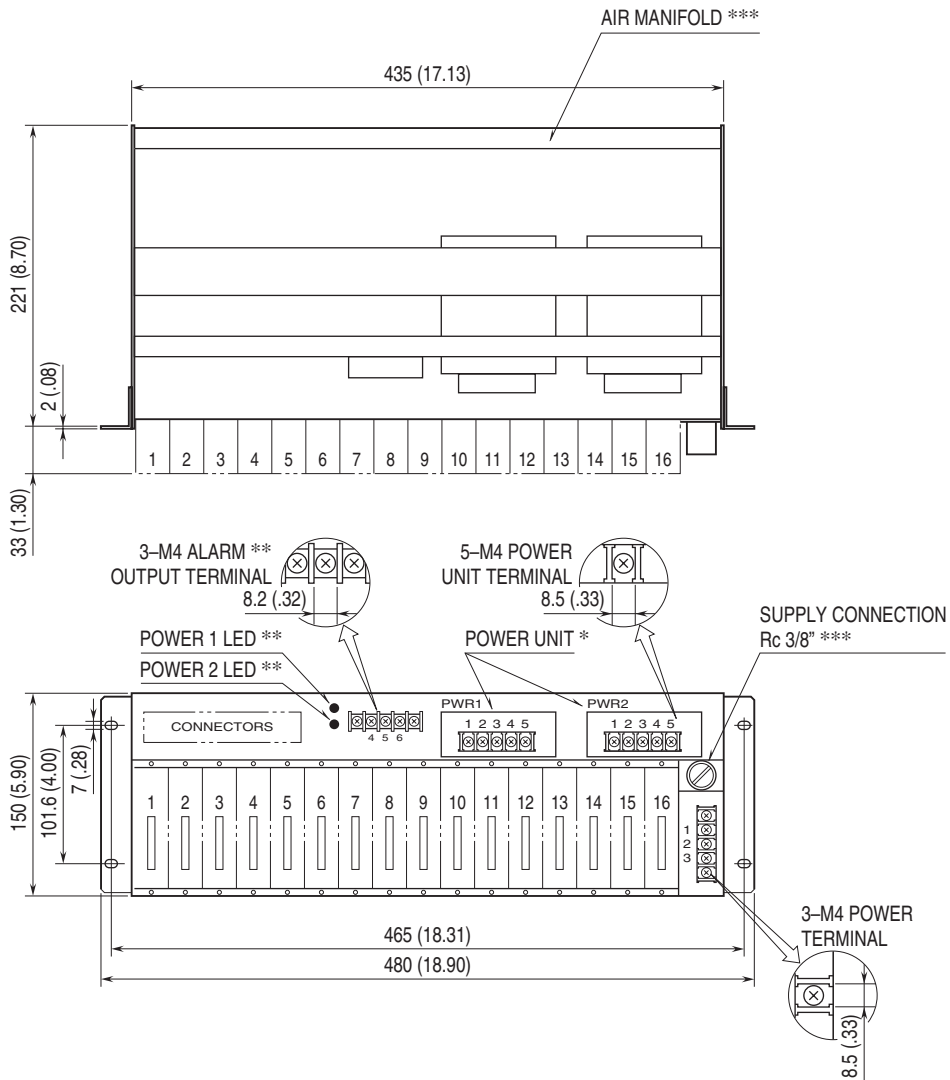
### Two Independent Power Sources, DC/AC Power Supply



### Two Independent Power Sources, AC/AC Power Supply



## DIMENSIONS unit: mm (inch)



\* PWR1 only for AC single power supply.

\*\* Alarm output provided only for dual-redundant power supply or two independent power sources.

\*\*\*Pneumatic connection provided only for model 10BXC-2.

**I/O CONNECTOR PIN ASSIGNMENT**

• Fujitsu FCN type I/O connector

**Connector Pin Assignment**

**CN1:** Fujitsu FCN-364P040-AU

The input or output 2 (output 1 with single output type) is connected to the connector.

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
A 1	ch. 1 +	B 1	ch. 1 -
A 2	ch. 2 +	B 2	ch. 2 -
A 3	ch. 3 +	B 3	ch. 3 -
A 4	ch. 4 +	B 4	ch. 4 -
A 5	ch. 5 +	B 5	ch. 5 -
A 6	ch. 6 +	B 6	ch. 6 -
A 7	ch. 7 +	B 7	ch. 7 -
A 8	ch. 8 +	B 8	ch. 8 -
A 9	ch. 9 +	B 9	ch. 9 -
A10	ch.10 +	B10	ch.10 -
A11	ch.11 +	B11	ch.11 -
A12	ch.12 +	B12	ch.12 -
A13	ch.13 +	B13	ch.13 -
A14	ch.14 +	B14	ch.14 -
A15	ch.15 +	B15	ch.15 -
A16	ch.16 +	B16	ch.16 -

A17 - A20, B17 - B20: Unused

• Yokogawa DCS connector

**Location**

**I/O connector:** PS-40PE-D4T1-PN1

**CN1:** MAC2 / PAC card use\*

**CN2:** MAC2 / PAC card use\* for redundancy

**CN3:** VMx / PM1 card use\*\*

The input or output 2 (output 1 with single output type) is connected to the connector.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
VM1/PM1/VM4 CARD INPUT or OUTPUT CN3															
VM2 CARD INPUT NO. CN3								VM2 CARD OUTPUT NO. CN3							
1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
i	o	i	o	i	o	i	o	i	o	i	o	i	o	i	o
MAC2/PAC CARD I/O (i = input, o = output) CN1, CN2															

\*MAC2 card (uses KS1 cable)

I/O card used for control I/O. Composed of 8 inputs and 8 outputs. Input and output are paired. (Replace with pulse inputs for PAC card.)

\*\*VMx / PM1 card (uses KS2 cable)

VM1: analog input 16 points

VM2: analog input 8 points / analog output 8 points

VM4: analog output 16 points

PM1: pulse input 16 points

• Nippon Shokubai DCS connector

**Location**

**CN1:** HIF3F-34PA-2.54DSA

The input or output 2 (output 1 with single output type) is connected to the connector.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NIPPON SHOKUBAI DCS LOCATION NO.															

• Connector Pin Assignment

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
1	No Connection	19	ch. 8 -
2	No Connection	20	ch. 8 +
3	ch.16 -	21	ch. 7 -
4	ch.16 +	22	ch. 7 +
5	ch.15 -	23	ch. 6 -
6	ch.15 +	24	ch. 6 +
7	ch.14 -	25	ch. 5 -
8	ch.14 +	26	ch. 5 +
9	ch.13 -	27	ch. 4 -
10	ch.13 +	28	ch. 4 +
11	ch.12 -	29	ch. 3 -
12	ch.12 +	30	ch. 3 +
13	ch.11 -	31	ch. 2 -
14	ch.11 +	32	ch. 2 +
15	ch.10 -	33	ch. 1 -
16	ch.10 +	34	ch. 1 +
17	ch. 9 -		
18	ch. 9 +		

• Azbil DCS AI connector

**I/O cable:** J-RSL / J-RSK

J-RRL / J-RRK

**Location**

**Input connector:** 57GE-40500-751

**CN1, CN2:** J-HAM50 / J-HMM00 module use

The output 2 (output 1 with single output type) is connected to the connector. The CN1 and CN2 are connected in parallel.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AZBIL DCS AI CONNECTOR															

**•Azbil DCS AO connector**

**I/O cable:** J-RSL / J-RSK  
J-RRL / J-RRK

**Location**

**Output connector:** 57GE-40500-751

**CN1, CN2:** J-AOM10 module use

The input is connected to the connector. The CN1 and CN2 are connected in parallel.

Install the Extender Module (model: 10BW) to unused channels in order to close the circuit.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

AZBIL DCS AO CONNECTOR

**•Azbil DCS AI connector**

**I/O cable:** J-SSL / J-SSK  
J-SRL / J-SRK

**Location**

**Input connector:** 00-8016-056-296-707V

**CN1, CN2:** J-HAM50 / J-HMM00 module use

The output 2 (output 1 with single output type) is connected to the connector. The CN1 and CN2 are connected in parallel.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

AZBIL DCS AI CONNECTOR

**•Azbil DCS AO connector**

**I/O cable:** J-SSL / J-SSK  
J-SRL / J-SRK

**Location**

**Output connector:** 00-8016-056-296-707V

**CN1, CN2:** J-AOM10 module use

The input is connected to the connector. The CN1 and CN2 are connected in parallel.

Install the Extender Module (model: 10BW) to unused channels in order to close the circuit.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

AZBIL DCS AO CONNECTOR

**•Yokogawa DCS connector**

**Location**

**I/O connector:** PS-40PE-D4T1-PN1

**CN1:** VMx / PM1 card use (uses KS2 cable)

**CN2:** VMx / PM1 card use for redundancy

The input or output 2 (output 1 with single output type) is connected to the connector.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

VM1/PM1/VM4 CARD INPUT or OUTPUT  
CN1, CN2

1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
VM2 CARD INPUT NO. CN1, CN2								VM2 CARD OUTPUT NO. CN1, CN2							

**•Connector Pin Assignment**

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
40	ch. 1 +	24	ch. 9 +
39	ch. 1 -	23	ch. 9 -
38	ch. 2 +	22	ch.10 +
37	ch. 2 -	21	ch.10 -
36	ch. 3 +	20	ch.11 +
35	ch. 3 -	19	ch.11 -
34	ch. 4 +	18	ch.12 +
33	ch. 4 -	17	ch.12 -
32	ch. 5 +	16	ch.13 +
31	ch. 5 -	15	ch.13 -
30	ch. 6 +	14	ch.14 +
29	ch. 6 -	13	ch.14 -
28	ch. 7 +	12	ch.15 +
27	ch. 7 -	11	ch.15 -
26	ch. 8 +	10	ch.16 +
25	ch. 8 -	9	ch.16 -

1 - 8: Unused

VM1: analog input 16 points

VM2: analog input 8 points / analog output 8 points

VM4: analog output 16 points

PM1: pulse input 16 points

**•Toshiba DCS SAIN1 card use**

**Location**

**Input connector:** Omron XG4A-2031

**CN1:** SAIN1 (ch.1 - ch.8)

**CN2:** SAIN1 (ch.1 - ch.8) for redundancy

**CN3:** SAIN1 (ch.9 - ch.16)

**CN4:** SAIN1 (ch.9 - ch.16) for redundancy

The output 2 (output 1 with single output type) is connected to the connector.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
CN1, CN2								CN3, CN4							

SAIN1 INPUT POINT NO.

Toshiba DCS SAMP1 uses Panasonic AXM220001. As connector is discontinued, Omron XG4A-2031 is used as an alternative. (Replace cable side.)

• **Hitachi DCS connector**

**Location**

**CN1, CN2:** DN20B-36S

The input or output 2 (Output 1 with single output type) is connected to the connector.

RACK LOCATION NO.															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HITACHI DCS CONNECTOR															

**Connector Pin Assignment**

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
1	ch. 1 +	9	ch. 9 +
19	ch. 1 -	27	ch. 9 -
2	ch. 2 +	10	ch.10 +
20	ch. 2 -	28	ch.10 -
3	ch. 3 +	11	ch.11 +
21	ch. 3 -	29	ch.11 -
4	ch. 4 +	12	ch.12 +
22	ch. 4 -	30	ch.12 -
5	ch. 5 +	13	ch.13 +
23	ch. 5 -	31	ch.13 -
6	ch. 6 +	14	ch.14 +
24	ch. 6 -	32	ch.14 -
7	ch. 7 +	15	ch.15 +
25	ch. 7 -	33	ch.15 -
8	ch. 8 +	16	ch.16 +
26	ch. 8 -	34	ch.16 -

• **Hitachi DCS EX-CDL cable connector**

**Location**

**CN1:** 57GE-40360-751 (D7A)

The input or output 2 (output 1 with single output type) is connected to the connector.

PIN NO.	ASSIGNMENT	PIN NO.	ASSIGNMENT
1	ch. 1 +	9	ch. 9 +
19	ch. 1 -	27	ch. 9 -
2	ch. 2 +	10	ch.10 +
20	ch. 2 -	28	ch.10 -
3	ch. 3 +	11	ch.11 +
21	ch. 3 -	29	ch.11 -
4	ch. 4 +	12	ch.12 +
22	ch. 4 -	30	ch.12 -
5	ch. 5 +	13	ch.13 +
23	ch. 5 -	31	ch.13 -
6	ch. 6 +	14	ch.14 +
24	ch. 6 -	32	ch.14 -
7	ch. 7 +	15	ch.15 +
25	ch. 7 -	33	ch.15 -
8	ch. 8 +	16	ch.16 +
26	ch. 8 -	34	ch.16 -



Specifications are subject to change without notice.