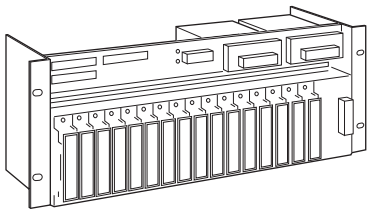
**Rack-mounted DCS Signal Conditioners 18-RACK**

## STANDARD RACK

(pressure supply)

Functions & Features

- Standard 19" rack for 18-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 via manifold
- Direct interface to various DCS with the rack connector



## MODEL: 18BXEA–[1]-[2][3]

## ORDERING INFORMATION

- Code number: 18BXEA-[1]-[2][3]

Specify a code from below for each of [1] through [3].
(e.g. 18BXEA-Y0-K2/M)

## [1] CONNECTOR

0: None
U1: Fujitsu FCN type I/O connector
Y0: Yokogawa DCS connector
N1: Nippon Shokubai DCS connector
K1: Azbil DCS AI connector
K2: Azbil DCS AO connector
K3: Azbil DCS AI connector (ELCO connector)
K4: Azbil DCS AO connector (ELCO connector)
E1: Toshiba DCS SAMP1 card use
E2: Toshiba DCS SAOP1 card 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)
We guarantee the connecting section.

## [2] 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 ±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 ±10 %, ripple 10 %p-p max.)
(Redundant or independent power sources are recommended for long time use without interruption.)

## [3] OPTIONS

Mounting Bracket
blank: Rack mounting, standard
/M: Center mounting
/W: Surface mounting

## RELATED PRODUCTS

- Blank filler plate (model: P-181)
- Connector terminal block (model: CNT)
- Special cable with 40-pin connector (model: FCN)

## GENERAL SPECIFICATIONS

Construction: Metal plates assembly
Coating: Colored Zn-Cr
Capacity: 16 positions
Connection
Power input: M4 screw terminals (torque 0.8 N·m)
Power alarm output: M4 screw terminals (torque 0.8 N·m)
Pneumatic: Rc 3/8" female (torque ≤ 12 N·m)
Screw terminal: Nickel-plated brass
Manifold: Aluminium alloy
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
Rated load: 250 V AC @ 3 A (cos ø = 1)
30 V DC @ 3 A (resistive load)
Maximum switching voltage: 250 V AC, 30 V DC
Maximum switching power: 750 VA, 90 W



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**Minimum load**: 5 V DC @ 10 mA
**Mechanical life**: ≥ 5 × $10^7$ cycles

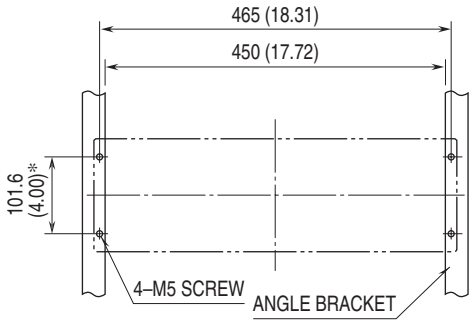
## INSTALLATION

**Supply pressure**: Refer to the data sheet for I/P transducers
**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 or surface
**Weight**
**Single power supply w/o power units**:
5.5 kg (12.13 lb) with DC power type
6.0 kg (13.23 lb) with AC power type
**Dual-redundant or two independent power sources**:
6.0 kg (13.23 lb) with AC/DC power type
6.5 kg (14.33 lb) with AC/AC power type

## PERFORMANCE

**Insulation resistance**: ≥ 100 MΩ with 500 V DC
(I/O connector to power to FG)
**Dielectric strength**: 500 V AC @ 1 minute
(I/O connector to power)
1500 V AC @ 1 minute (power to FG)
500 V AC @ 1 minute (1000 V for 24 V DC)
(I/O connector to FG)
**Maximum supply pressure**: 196 kPa
(2 kgf/$cm^2$, 1.96 bar, 28 psig)

## MOUNTING REQUIREMENTS




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



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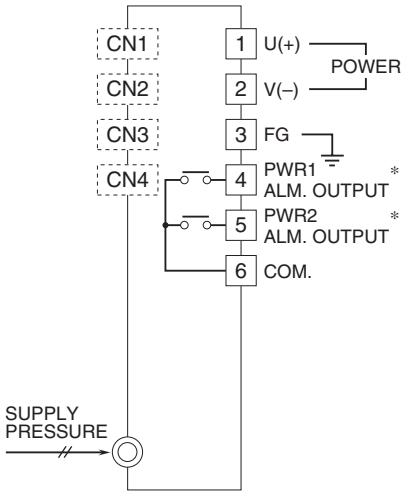
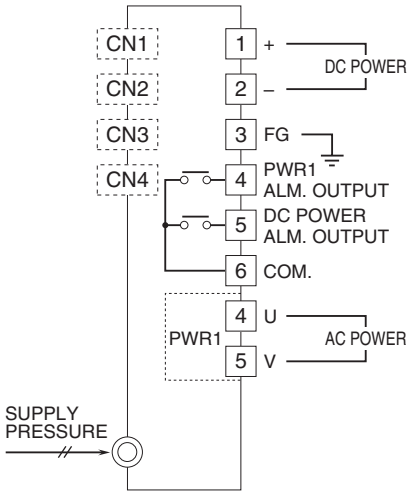
## CONNECTION DIAGRAM

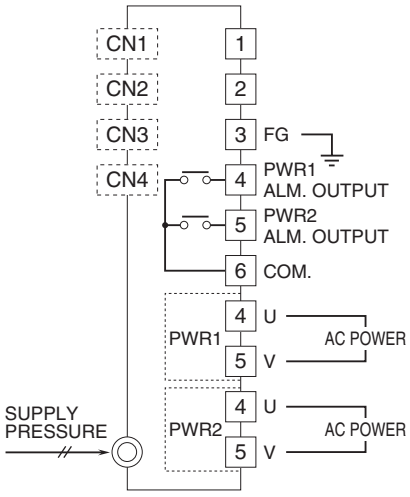
■ **Single Power Source, Dual-redundant Power Supply**




■ **Two Independent Power Sources, DC/AC Power Supply**




■ **Two Independent Power Sources, AC/AC Power Supply**

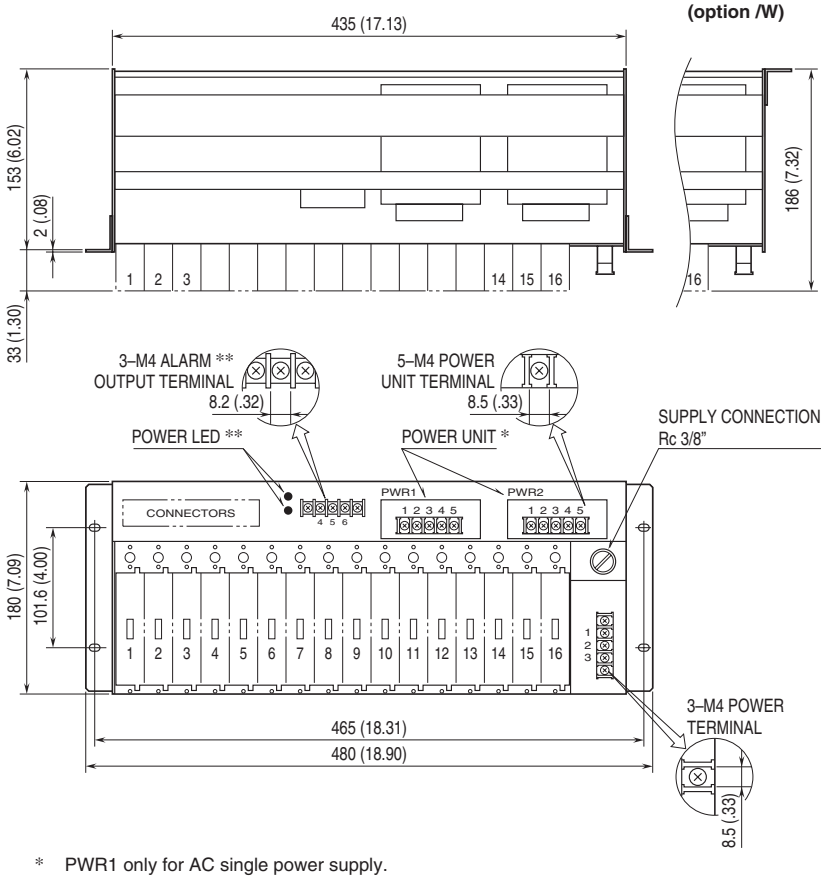



*Alarm output not provided for single power supply.

Note 1: CN1 through CN4 are not available without connector.
Note 2: CN2 is available with Yokogawa, Yamatake and Toshiba DCS type.
Note 3: CN3 is available with Yokogawa and Toshiba DCS type.
Note 4: CN4 is available with Toshiba DCS type.

## DIMENSIONS unit: mm (inch)

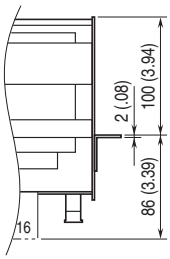
■ **RACK (standard)**




■ **SURFACE (option /W)**




■ **CENTER (option /M)**




* PWR1 only for AC single power supply.
** Alarm output provided only for dual-redundant power supply or two independent power sources.



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## I/O CONNECTOR PIN ASSIGNMENT

**•Fujitsu FCN type I/O connector**
**Connector pin assignment**
**CN1:N364P040AU**
**(FCN-364P040-AU...discontinued)**
The input or output 1 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** : VM ❑ / PM1 card use**
The input or output 1 is connected to the connector.

| 18-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 CN3 | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 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.)
**VM❑ / 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 1 is connected to the connector.

| 18-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 |
| 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 1 is connected to the connector. The CN1 and CN2 are connected in parallel.

| 18-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 | | | | | | | | | | | | | | | |



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**•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: 18BW) to unused channels in order to close the circuit.

| 18-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 1 is connected to the connector. The CN1 and CN2 are connected in parallel.

| 18-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: 18BW) to unused channels in order to close the circuit.

| 18-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 | | | | | | | | | | | | | | | |

**•Toshiba DCS SAMP1 card use**
**Location**
**Output connector**: HIF3CA-40PA-2.54DSA (11)
**CN1, CN2**: SAMP1
**CN3, CN4**: SAMP1 for redundancy
The output 1 is connected to the connector.

| 18-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, CN3 | | | | | | | | CN2, CN4 | | | | | | | |
| SAMP1 INPUT POINT NO. | | | | | | | | | | | | | | | |

**•Toshiba DCS SAOP1 card use**
**Location**
**Input connector**: HIF3CA-40PA-2.54DSA (11)
**CN1, CN2**: SAOP1
**CN3, CN4**: SAOP1 for redundancy
The input is connected to the connector.

| 18-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, CN3 | | | | | | | | CN2, CN4 | | | | | | | |
| SAOP1 OUTPUT POINT NO. | | | | | | | | | | | | | | | |

**•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 1 is connected to the connector.

| 18-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.)



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⚠ Specifications are subject to change without notice.



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