

## Rack-mounted DCS Signal Conditioners 18-RACK

### CURRENT LOOP SUPPLY

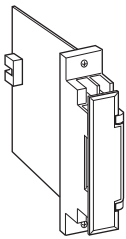
(linearizing; field-programmable)

#### Functions & Features

- Powering a 4 – 20 mA DC current loop
- Microprocessor based
- Shortcircuit protection
- Applicable to smart transmitters
- Field-programmable linearization data
- Loop testing via hand-held programmer PU-2x
- Usable as Linearizer for 4 – 20 mA DC signals
- Second channel output available at the front terminals and at the Standard Rack connector

#### Typical Applications

- Various 2-wire transmitters
- Providing isolation and linearization for a 2-wire temperature transmitter
- Linearizing weir flowmeter output to provide a linear-to-volume signal



## MODEL: 18JDL-A[1]66-R

### ORDERING INFORMATION

- Code number: 18JDL-A[1]66-R

Specify a code from below for [1]  
(e.g. 18JDL-A366-R)

#### •Linearization data

**Code 1 segment data:** Use Ordering Information Sheet (No. ESU-1669) to specify linearization data.

**Code 3 T/C, Code 4 RTD:** Specify input sensor type and temperature range.

LINEARIZATION CODE	DEFAULT
1: Segment data	Linear
2: Square root extraction	—
3: Thermocouple	K 0 – 1000°C
4: RTD	Pt 100 0 – 100°C

### INPUT

#### Current

A: 4 – 20 mA DC (Input resistance 250 Ω)

### [1] LINEARIZATION

0: None

1: Segment data

2: Square root extraction

3: Thermocouple

4: RTD

### OUTPUT 1

#### Voltage

6: 1 – 5 V DC (Load resistance 2000 Ω min.)

### OUTPUT 2

#### Voltage

6: 1 – 5 V DC (Load resistance 2000 Ω min.)

### POWER INPUT

#### DC Power

R: 24 V DC

(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

### RELATED PRODUCTS

- JX configurator connection kit (model: JXCON)
- Programming Unit (model: PU-2x)

### GENERAL SPECIFICATIONS

**Construction:** Rack-mounted; terminal access via screw terminals on the front and connector on the rear; terminal cover provided

#### Connection

**Input:** M3.5 screw terminals (torque 0.8 N·m)

**Output 1:** Connector

**Output 2:** M3.5 screw terminals (torque 0.8 N·m) and connector

**Power input:** Supplied from connector

**Screw terminal:** Nickel-plated steel

**Isolation:** Input to output 1 to output 2 to power

**Linearization:** 16 points max. represented as percentage of full-scale

**Adjustments:** Programming Unit (model: PU-2x);

linearization data, zero and span, simulating output, etc.

(Refer to the users manual of JXCON for the adjustments configurable with JXCON.)



## SUPPLY OUTPUT

Output voltage: 24 - 28 V DC with no load  
 Current rating:  $\leq 22$  mA DC  
 • Shortcircuit Protection  
 Current limited: 30 mA max.  
 Protected time duration: No limit

## INPUT SPECIFICATIONS

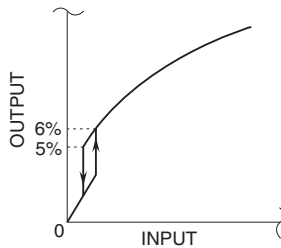
■ DC Current: Input resistor incorporated

## OUTPUT SPECIFICATIONS

The output goes below 0 % when the input is open.

## LINEARIZATION

- No linearization: The output is proportional to the input.
  - Segment data: 16 points (15 segments) max. within the range of -15.00 to +115.00 % input or output represented as percentage of fullscale
  - Square root extraction
- Low-end cutout: 5 % (output); curve characteristics as in the figure below
- Square root extraction



## • Thermocouple linearizable range

T/C	USABLE RANGE	
	°C	°F
(PR)	0 to 1760	32 to 3200
K (CA)	-270 to +1370	-454 to +2498
E (CRC)	-270 to +1000	-454 to +1832
J (IC)	-210 to +1200	-346 to +2192
T (CC)	-270 to +400	-454 to +752
B (RH)	0 to 1820	32 to 3308
R	-50 to +1760	-58 to +3200
S	-50 to +1760	-58 to +3200

Remark: For the temperatures that range below 0 °C, the transmitter may partially not satisfy the described accuracy. Consult factory.

## • RTD linearizable range

RTD	USABLE RANGE	
	°C	°F
JPt 100 (JIS '89)	-200 to +500	-328 to +932
Pt 100 (JIS '89)	-200 to +650	-328 to +1202
Pt 100 (JIS '97/IEC)	-200 to +650	-328 to +1202
Pt 50Ω (JIS '81)	-200 to +500	-328 to +932
Ni 508.4Ω	-50 to +200	-58 to +392

Remark: Pt 100 (JIS '89) is deviated from Pt 100 (JIS '97) only within the described accuracy.

## INSTALLATION

### Power consumption

• DC: Approx. 85 mA

Operating temperature: -5 to +55°C (23 to 131°F)

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

Mounting: Standard Rack 18BX or 18KBXx

Weight: 150 g (0.33 lbs)

## PERFORMANCE in percentage of span

Accuracy:  $\pm 0.1$  % with segment gain  $\leq 1$  [ $\pm 0.1$  %  $\times$  gain] with segment gain  $\geq 1$

Temp. coefficient:  $\pm 0.015$  %/°C ( $\pm 0.008$  %/°F)

Response time:  $\leq 0.5$  sec. (0 - 90 %)

### Line voltage effect

Output signal:  $\pm 0.1$  % over voltage range

Insulation resistance:  $\geq 100$  MΩ with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute

(input to output 1 or output 2 or power)

500 V AC @ 1 minute

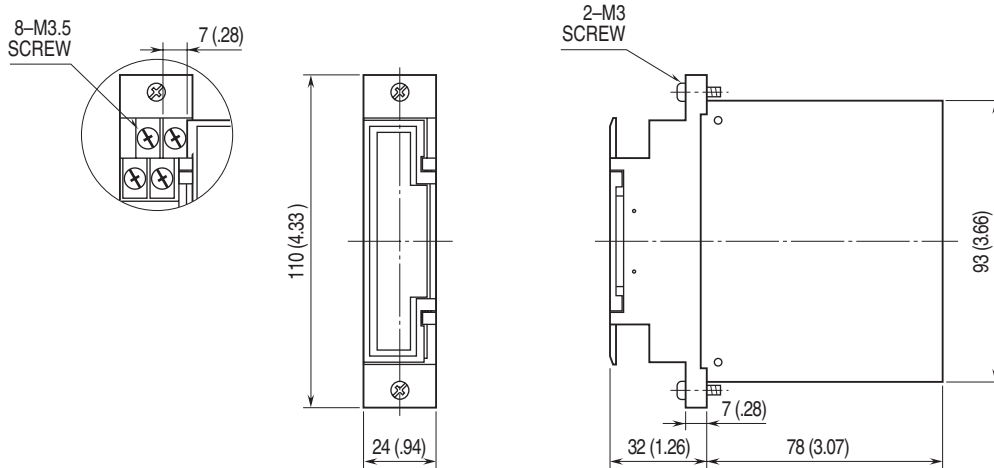
(output 1 to output 2 to power)

1500 V AC @ 1 minute

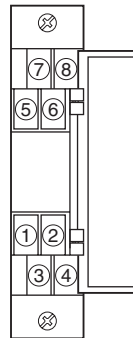
(input or output or power to ground)



## DIMENSIONS unit: mm (inch)

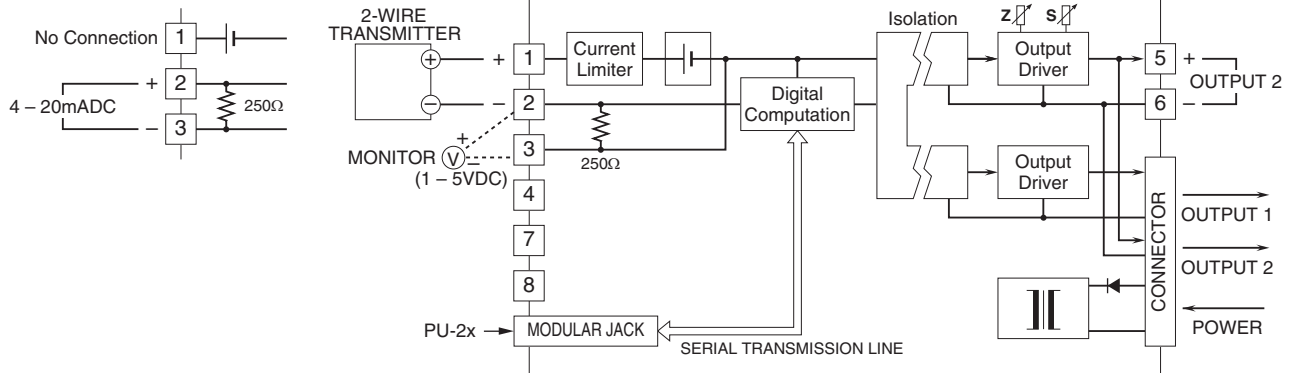


## TERMINAL ASSIGNMENTS



## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

### ■ When Used as Linearizer



Specifications are subject to change without notice.