## Rack-mounted DCS Signal Conditioners 18-RACK

## POTENTIOMETER CONVERTER
(field-programmable)

### Functions & Features
• Providing two DC outputs proportional to a potentiometer or slidewire position input
• Microprocessor based
• Constant voltage excitation allows use with pots with total resistances from 100 Ω – 10 kΩ without affecting accuracy
• 75 % zero/span adjustments with minimal interaction
• Linearization data programmable via hand-held programmer PU-2x
• Loop testing via hand-held programmer PU-2x
• Second channel output available at the front terminals and at the Standard Rack connector

### Typical Applications
• Tank levels
• Positions
• Linearizing non-linear signal characteristics by the sensor's linking mechanism
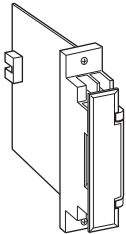


## MODEL: 18JM–166–R

## ORDERING INFORMATION
• Code number: 18JM-166-R
Use Ordering Information Sheet (No. ESU-1669) to specify linearization data when the I/O signals are non-linear.
•Linearization data (max. 16 points)

## INPUT POTENTIOMETER
1: Total resistance 100 Ω  – 10 kΩ

## 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. within the range of -15.00 – +115.00 % input or output; represented as percentage of full-scale
**Adjustments**: Programming Unit (model: PU-2x); linearization data (Unused resistance of the potentiometer's total resistance can be programmed with the linearization table.), zero and span, simulating output, etc.
(Refer to the users manual of JXCON for the adjustments configurable with JXCON.)

## INPUT SPECIFICATIONS
**Minimum span**: 25 % of total resistance (set with the Programming Unit [model: PU-2x] or JX Configurator Connection Kit [model: JXCON])
**Excitation**: 0.25 V DC

## INSTALLATION
**Power consumption**
•DC: Approx. 60 mA
**Operating temperature**: -5 to +55°C (23 to 131°F)
**Operating humidity**: 30 to 90 %RH (non-condensing)
**Mounting**: Standard Rack 18BXx or 18KBXx
**Weight**: 150 g (0.33 lbs)

## PERFORMANCE in percentage of span

**Accuracy**: ±0.1 % with segment gain ≤ 1 [±0.1 % × gain]
with segment gain ≥ 1
**Temp. coefficient**: ±0.015 %/°C (±0.008 %/°F)
**Response time**: ≤ 0.5 sec. (0 – 90 %)
**Line voltage effect**: ±0.1 % over voltage range
**Insulation resistance**: ≥ 100 MΩ with 500 V DC
**Dielectric strength**: 1500 V AC @ 1 minute
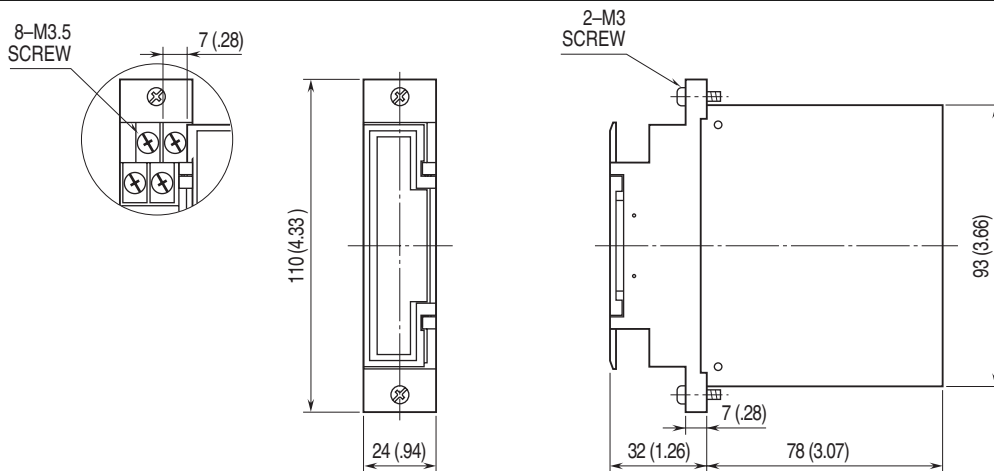(input to output 1 or output 2 or power)
500 V AC @ 1 minute
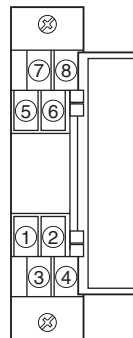(output 1 to output 2 to power)
1500 V AC @ 1 minute
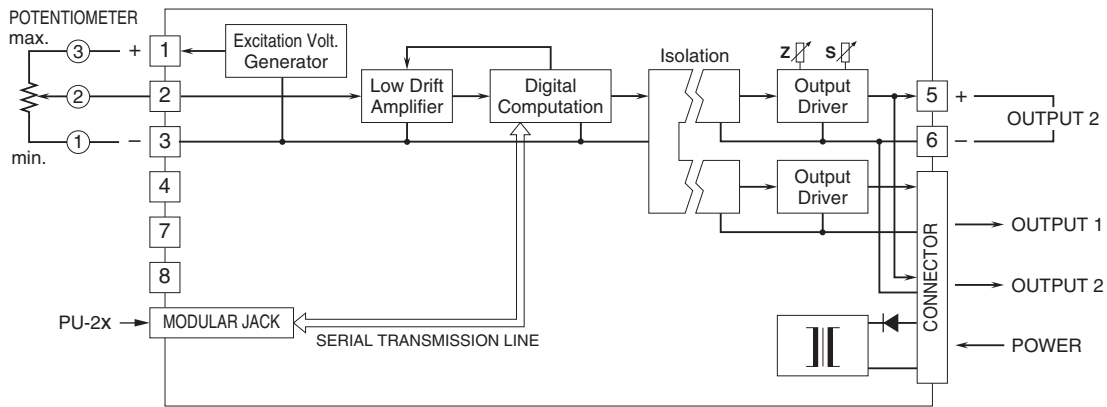(input or output or power to ground)

## DIMENSIONS unit: mm (inch)



## TERMINAL ASSIGNMENTS

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



⚠️ Specifications are subject to change without notice.