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

## CURRENT LOOP SUPPLY

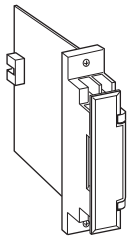
(applicable to HART signal, opencircuit detection selectable)

Functions & Features

- Powers a 4 – 20 mA DC current loop
- Isolates and relays HART signals
- Shortcircuit protection
- Opencircuit detection selectable
- Module can be retracted without removing wiring for an insulation test

Typical Applications

- 2-wire HART transmitters



## MODEL: 18KDYH2–A[1]–R[2]

## ORDERING INFORMATION

- Code number: 18KDYH2-A[1]-R[2]

Specify a code from below for each of [1] and [2].
(e.g. 18KDYH2-A6A-R/B/RE)

## INPUT

**Current**

A: 4 - 20 mA DC (Input resistance approx. 250Ω)

## [1] OUTPUT 1 / OUTPUT 2

6A: 1 – 5 V DC (Load resistance 2000 Ω min.)
/ 4 – 20 mA DC (Applicable to HART signal, load resistance 600 Ω max.)*

A6: 4 – 20 mA DC (Applicable to HART signal, load resistance 600 Ω max.)*
/ 1 – 5 V DC (Load resistance 2000 Ω min.)

AA: 4 – 20 mA DC (Applicable to HART signal, load resistance 600 Ω max.)*
/ 4 – 20 mA DC (Load resistance 500 Ω max.)

* 250 Ω ±10% for HART communication

## POWER INPUT

**DC Power**

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

## [2] OPTIONS (multiple selections)

**Opencircuit detection**

blank: none
/B: Opencircuit detector (Only for HART signal)

**Connector output polarity reversal**

blank: none
/RE: Connector output polarity reversal (Only for HART signal)

## 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) and connector
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
Overrange output: Approx. -10 to +110 %
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)
Open-circuit detection: This function enables the input device to detect open circuit of output circuit isolated from the input circuit.
Input current 0 mA when the output loop is open.
Photo MOSFET Relay ON Resistance; 3 Ω max.

## SUPPLY OUTPUT

(across the terminals 1 – 2)
Output voltage: 24 – 28 V DC with no load
18 V DC at 20 mA
Current rating: ≤ 22 mA DC
• Shortcircuit Protection
Current limited: 30 mA max.
Protected time duration: No limit

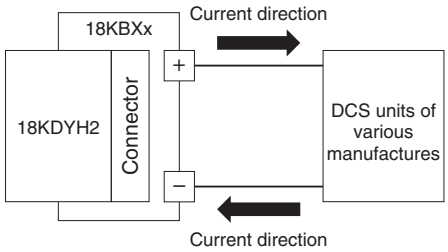
## INPUT SPECIFICATIONS

■ DC Current: Input resistor incorporated
Input current: ≥ 0 mA

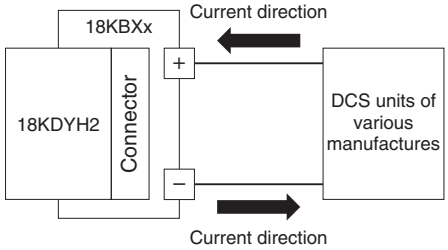
## OUTPUT SPECIFICATIONS

The output goes below 0 % when the input is open.
Polarity of connector output is reversed with option code /RE (with connector output polarity reversal).

■ **Blank (note)**




■ **/RE (with connector output polarity reversal)**




## HART COMMUNICATION

**Transmission gain**: Approx. -3 dB (within 1 – 3 kHz) measured with 250 Ω at output
**Loop impedance**: 250 Ω ±10 %
**Communication directions**: Bidirectional

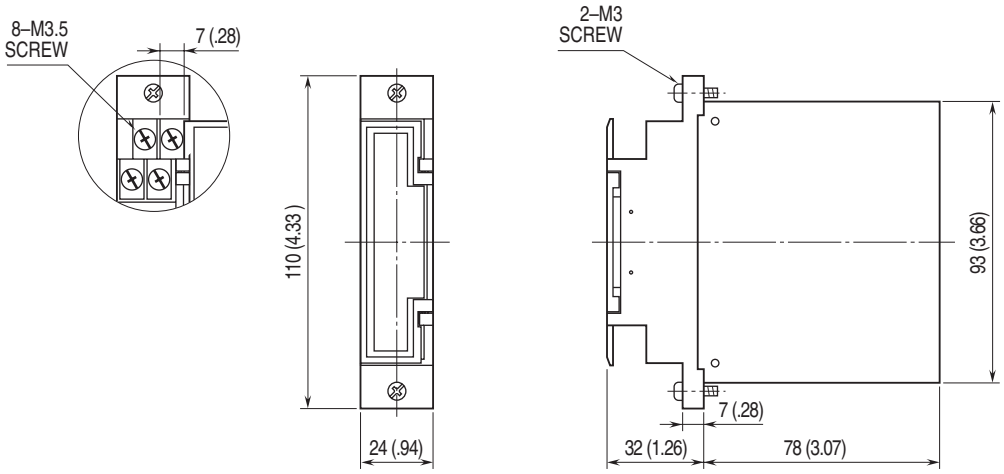
## INSTALLATION

**Current consumption**:
**Output Code 6A, A6**: Approx. 120 mA
**Output Code AA**: Approx. 130 mA
**Operating temperature**: -5 to +55°C (23 to 131°F)
**Operating humidity**: 30 to 90 %RH (non-condensing)
**Mounting**: Standard Rack 18KBXx
**Weight**: 110 g (0.24 lb)

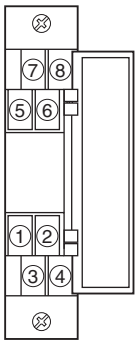
## PERFORMANCE in percentage of span

**Accuracy**: ±0.1 %
**Temp. coefficient**: ±0.015 %/°C (±0.008 %/°F)
**Response time**: ≤ 0.5 sec. (0 – 90 %)
**Line voltage effect**
**Supply output**: ±3 % over voltage range
**Output signal**: ±0.1 % over voltage range
**Insulation resistance**: ≥ 100 MΩ with 500 V DC
**Dielectric strength**: 500 V AC @ 1 minute (input to output 1 to output 2 to power to ground)

## EXTERNAL DIMENSIONS unit: mm (inch)

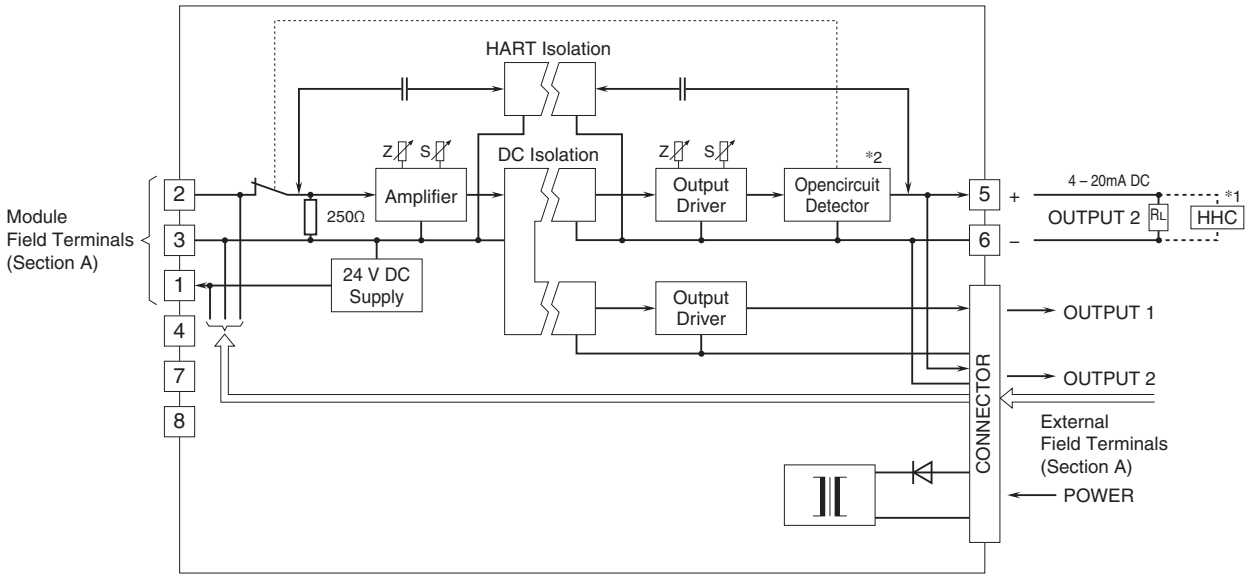



## TERMINAL ASSIGNMENTS



## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

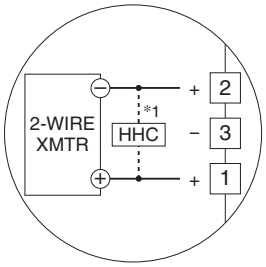
**■OUTPUT CODE: 6A**



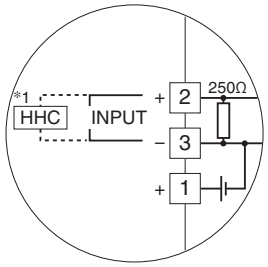

Note 1: Use either of module or external field terminals.
Note 2: For OUTPUT 2, use either of terminals on the front or connector on the rear.
*1. Hand-held communicator
*2. Included with option /B

**Section A. Field Terminals**

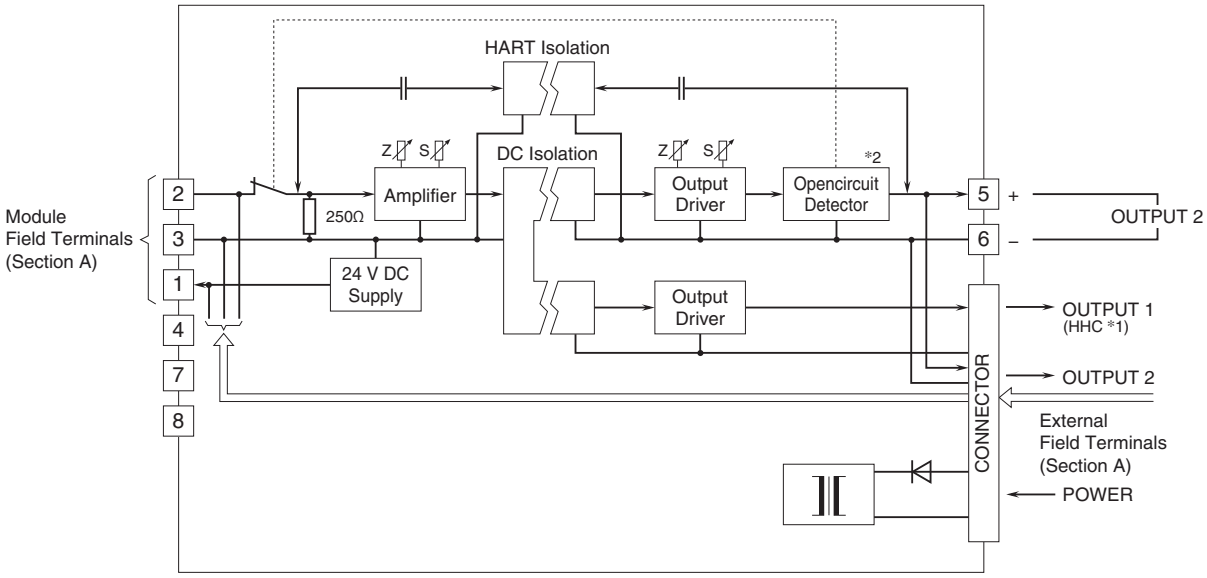
**■ When used as DC Supply**




**■ When used as Isolator**



**■OUTPUT CODE: A6, AA**




Note 1: Use either of module or external field terminals.
Note 2: For OUTPUT 2, use either of terminals on the front or connector on the rear.
*1. Hand-held communicator
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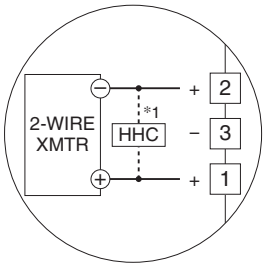
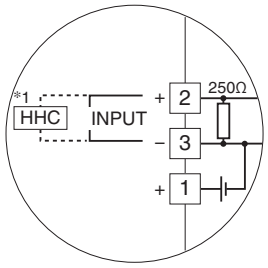
**Section A. Field Terminals**

**■ When used as DC Supply**




**■ When used as Isolator**




⚠ Specifications are subject to change without notice.