

# Digital display - FA MCR-EX-D-TUI-UI-2REL-UP - 2907216

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Multifunctional Ex i process indicator inside the control panel housing for monitoring and displaying analog measurement data. Universal inputs permit connection of current, voltage, RTDs, and TCs. Two relay change-over contact outputs and one analog output.

## Product Description

Multifunctional Ex i process indicator in control panel housing for monitoring, displaying, and transmitting analog measurement data from the Ex area to the safe area. Dual-conductor sensors can be powered with the integrated measuring transducer supply. Universal inputs permit connection of current, voltage, RTDs, and TCs. Limit values can be monitored and relays can be switched. The analog output allows you to transmit process signals. A color change in the event of a fault supports the detection of alarm conditions. 5-digit, 7-segment LC display, with backlight, 1 universal input, 2 relays, min./max. value memory, linearization table, digital status output (open collector)

## Key Commercial Data

|                                      |   |
|--------------------------------------|---|
| Packing unit                         | 1 STK   |
| GTIN                                 | <br>4 055626 173627 |
| GTIN                                 | 4055626173627   |
| Weight per Piece (excluding packing) | 580.000 g   |
| Custom tariff number                 | 90303330  |
| Country of origin                    | Germany   |

## Technical data

### Dimensions

|        |        |
|--------|--------|
| Width  | 96 mm  |
| Height | 48 mm  |
| Depth  | 175 mm |

### Ambient conditions

|   |                            |
|---|----------------------------|
| Ambient temperature (operation)         | -20 °C ... 60 °C           |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C           |
| Maximum altitude                        | < 2000 m (Above sea level) |
| Degree of protection                    | IP65 from the front        |

### Input data

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## Technical data

### Input data

|                                     |   |
|-------------------------------------|---|
| Description of the input            | Universal input                                 |
| Number of inputs                    | 1   |
| Current input signal                | 0 mA ... 20 mA +10 %                            |
|                                     | 4 mA ... 20 mA +10 %                            |
| Max. input current                  | < 150 mA  |
| Input signal                        | Current   |
| Input resistance current input      | 10 Ω  |
| Transmitter supply voltage          | > 14 V (22 mA)                                  |
| Transmitter supply voltage range    | 22.8 V ... 27.6 V (No-load)                     |
| Transmitter supply current          | < 30 mA (Short-circuit and overload protection) |
| Available input sources             | Resistance thermometers                         |
| Sensor types (RTD) that can be used | Pt, Ni, Cu sensors                              |
| Connection technology               | 2, 3, 4-wire                                    |
| Description of the input            | Universal input                                 |
| Voltage input signal                | 0 V ... 10 V                                    |
|                                     | 2 V ... 10 V                                    |
|                                     | 0 V ... 5 V                                     |
|                                     | 0 V ... 1 V                                     |
|                                     | 1 V ... 5 V                                     |
|                                     | -1 V ... 1 V                                    |
|                                     | -10 V ... 10 V                                  |
|                                     | -30 V ... 30 V                                  |
|                                     | -100 mV ... 100 mV                              |
| max. input voltage                  | ± 35 V (≥ 1 V)                                  |
| Input signal                        | Voltage   |
| Input resistance of voltage input   | > 1 MΩ  |
| Available input sources             | Thermocouples                                   |
| Sensor types that can be used (TC)  | J, K, T, N, B, S, R, U, L, C, D                 |

### Output data

|                                 |                               |
|---------------------------------|-------------------------------|
| Output name                     | Current output                |
| Number of outputs               | 1                             |
| Configurable/programmable       | Yes                           |
| Current output signal           | 0 mA ... 20 mA                |
|                                 | 4 mA ... 20 mA                |
| Max. output current             | < 22 mA                       |
| Load/output load current output | ≤ 500 Ω (22 mA)               |
| Ripple                          | < 10 mV <sub>PP</sub> (500 Ω) |
| D/A resolution                  | 13 bit                        |
| Output name                     | Voltage output                |
| Voltage output signal           | 0 V ... 10 V                  |

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## Technical data

### Output data

|                     |                                |
|---------------------|--------------------------------|
|                     | 2 V ... 10 V                   |
|                     | 0 V ... 5 V                    |
|                     | 1 V ... 5 V                    |
| Max. output voltage | < 11 V                         |
| Ripple              | < 10 mV <sub>PP</sub> (1000 Ω) |
| D/A resolution      | 13 bit                         |

### Switching output

|                           |                           |
|---------------------------|---------------------------|
| Output name               | Relay output              |
| Contact type              | 2 PDT                     |
| Minimum switching voltage | 12 V                      |
| Maximum switching voltage | 30 V DC (3 A)             |
|                           | 230 V AC (3 A)            |
| Min. switching current    | 10 mA                     |
| Output name               | Transistor output, active |
| Output description        | Open collector output     |
| Number of outputs         | 1                         |
| Contact type              | Transistor                |
| Maximum switching voltage | 28 V                      |
| Max. switching current    | 3 A                       |
|                           | 200 mA                    |

### Power supply

|                      |   |
|----------------------|---|
| Supply voltage range | 24 V AC/DC ... 230 V AC/DC (-20 % ... +10 %, 50 Hz ... 60 Hz) |
| Power consumption    | ≤ 6.9 W   |

### General

|                                  |   |
|----------------------------------|---|
| Test voltage                     | 2500 V  |
| Protection class                 | I   |
| Overvoltage category             | II  |
| Degree of pollution              | 2   |
| Test voltage input/output        | 1500 V  |
| Test voltage input/power supply  | 2500 V  |
| Test voltage output/power supply | 2500 V  |
| Noise emission                   | IEC 61326, class A  |
| Noise immunity                   | IEC 61326 / NAMUR NE 21   |
| Housing material                 | PC-GF10   |
| Mounting position                | Max. viewing angle range +/- 45° from the centre line of the display in every direction |
| Conformance                      | CE-compliant  |
| ATEX                             | # II (1) G [Ex ia Ga] IIC   |
|                                  | # II (1) D [Ex ia Da] IIIC  |
| UL, USA/Canada                   | UL 61010 Recognized   |

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## Technical data

### General

|             |                        |
|-------------|------------------------|
| FM approval | AIS, NI/II/2/ABCDEFGT4 |
| CSA         | AIS, NI/II/2/ABCDEFGT4 |
| GL          | EMC1 C                 |

### Standards and Regulations

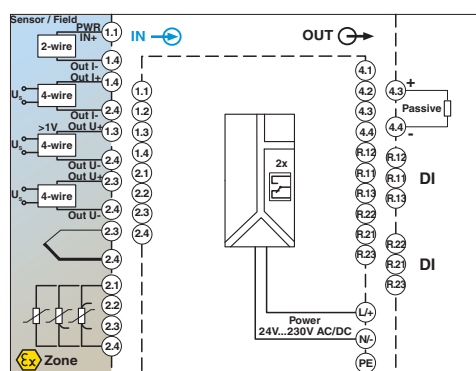
|                |                            |
|----------------|----------------------------|
| Noise emission | IEC 61326, class A         |
| Noise immunity | IEC 61326 / NAMUR NE 21    |
| Conformance    | CE-compliant               |
| ATEX           | # II (1) G [Ex ia Ga] IIC  |
|                | # II (1) D [Ex ia Da] IIIC |
| UL, USA/Canada | UL 61010 Recognized        |
| FM approval    | AIS, NI/II/2/ABCDEFGT4     |
| CSA            | AIS, NI/II/2/ABCDEFGT4     |
| GL             | EMC1 C                     |
| Group          | Ex ia IIC                  |
|                | Ex ia IIB                  |
|                | Ex ia IIA                  |
|                | Ex ia IIC                  |
|                | Ex ia IIB                  |
|                | Ex ia IIA                  |

### Environmental Product Compliance

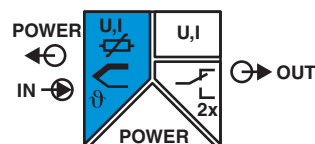
|            |   |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

## Drawings

Block diagram



Pictogram



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## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27210301 |
| eCl@ss 4.1 | 27210301 |
| eCl@ss 5.0 | 27210301 |
| eCl@ss 5.1 | 27210301 |
| eCl@ss 6.0 | 27210301 |
| eCl@ss 7.0 | 27210301 |
| eCl@ss 8.0 | 27210301 |
| eCl@ss 9.0 | 27210301 |

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001426 |
| ETIM 3.0 | EC001426 |
| ETIM 4.0 | EC001426 |
| ETIM 5.0 | EC001426 |
| ETIM 6.0 | EC001426 |

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 13.2 | 39121522 |
|-------------|----------|

## Approvals

### Approvals

#### Approvals

CSA / UL Recognized / cUL Recognized / cULus Recognized

#### Ex Approvals

CSA


### Approval details


|     |   |   |         |
|-----|---|---|---------|
| CSA |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a> | 2879105 |
|-----|---|---|---------|

|               |   |   |               |
|---------------|---|---|---------------|
| UL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 198586 |
|---------------|---|---|---------------|

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## Approvals

|                |   |   |               |
|----------------|---|---|---------------|
| cUL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 198586 |
|----------------|---|---|---------------|

|                  |   |   |
|------------------|---|---|
| cULus Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> |
|------------------|---|---|

## Accessories

### Accessories

#### Programming adapter

Programming adapter - MCR-PAC-T-USB - 2309000

Programming adapter with USB and T port interface, 2.4 m for programming FA MCR-..., MCR-...-LP-..., and MCR-...-HT-... modules

