

# Digital display - FA MCR-EX-FD-TUI-UI-2REL-UP - 2907781

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Multifunctional Ex i process indicator in field 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 field 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 pc
GTIN	
GTIN	4055626232157

## Technical data

### Dimensions

Width	199 mm
Height	160 mm
Depth	96 mm

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 50 °C (The readability of the display is no longer guaranteed at temperatures below -30 °C (-22 °F).)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	< 2000 m (Above sea level)
Permissible humidity (operation)	condensation permitted
Degree of protection	IP67
Noise immunity	IEC 61326 / NAMUR NE 21

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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	> 16 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-conductor
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 converter 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 converter resolution	13 bit

### Switching output

Output name	Relay output
Contact type	2 changeover contacts
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

### Connection data

Connection name	Input, output, status, relay
Connection method	Spring-cage connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14

### General

Test voltage	2500 V
Test voltage input/output	500 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	PBT GF30

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## Technical data

### General

Mounting position	Max. viewing angle range +/- 45° from the centre line of the display in every direction
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### Standards and Regulations

Noise emission	IEC 61326, class A
Noise immunity	IEC 61326 / NAMUR NE 21
Operation	Two-conductor measuring transducer supply (intrinsically safe)
Max. internal inductance $L_i$	75 $\mu$ H
Max. internal capacitance $C_i$	8 nF
Max. output voltage $U_o$	$\leq 27.3$ V
Max. output current $I_o$	$\leq 96.5$ mA
Max. output power $P_o$	$\leq 659$ mW
Group	Ex ia IIC
Max. external inductivity $L_o$	4 mH
Max. external capacitance $C_o$	88 nF
Group	Ex ia IIB
Max. external inductivity $L_o$	17 mH
Max. external capacitance $C_o$	683 nF
Group	Ex ia IIA
Max. external inductivity $L_o$	34 mH
Max. external capacitance $C_o$	2280 nF
Operation	Temperature inputs (intrinsically safe)
Max. internal inductance $L_i$	75 $\mu$ H
Max. internal capacitance $C_i$	8 nF
Max. output voltage $U_o$	$\leq 27.3$ V
Max. output current $I_o$	$\leq 22.1$ mA
Max. output power $P_o$	$\leq 151$ mW
Group	Ex ia IIC
Max. external inductivity $L_o$	500 $\mu$ H
Max. external capacitance $C_o$	85 nF
Group	Ex ia IIB
Max. external inductivity $L_o$	2 mH
Max. external capacitance $C_o$	360 nF
Group	Ex ia IIA
Max. external inductivity $L_o$	5 mH
Max. external capacitance $C_o$	530 nF

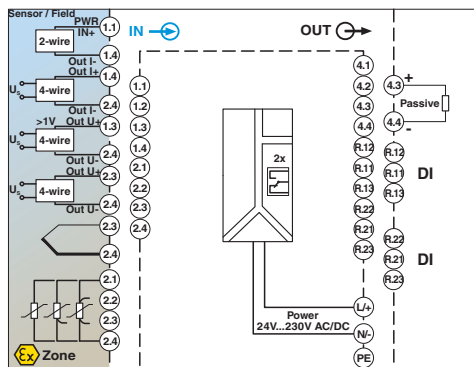
### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

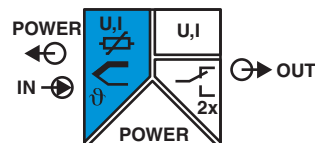
# Digital display - FA MCR-EX-FD-TUI-UI-2REL-UP - 2907781

## Drawings

Block diagram

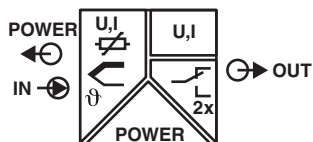
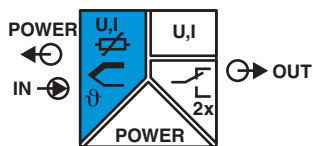


Pictogram



Block diagram FA MCR-EX-FD-TUI-UI-2REL-UP

Pictogram



## Classifications

eCl@ss

eCl@ss 10.0.1	27210301
eCl@ss 11.0	27210301
eCl@ss 4.0	27210300
eCl@ss 4.1	27210300
eCl@ss 5.0	27210300
eCl@ss 5.1	27210300
eCl@ss 6.0	27210300
eCl@ss 7.0	27210301
eCl@ss 9.0	27210301

ETIM

ETIM 2.0	EC001426
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## Classifications

### ETIM

ETIM 3.0	EC001426
ETIM 4.0	EC001426
ETIM 6.0	EC001426

### UNSPSC

UNSPSC 13.2	39121522
UNSPSC 18.0	39121008
UNSPSC 19.0	39121008
UNSPSC 20.0	39121008
UNSPSC 21.0	39121008

## Approvals

### Approvals

#### Approvals


CSA / UL Recognized / cUL Recognized / EAC / cULus Recognized

#### Ex Approvals


CSA / FM approved / ATEX

### Approval details

CSA		<a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a>	2879105
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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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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
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EAC			RU*DE.*08.B.01861/19
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# Digital display - FA MCR-EX-FD-TUI-UI-2REL-UP - 2907781

## Approvals

cULus Recognized



## Accessories

### Accessories

#### Mounting material

Mounting kit - FA MCR-FD-PM - 2908739



Tube mounting set for FA MCR-FD-TUI-UI-2REL-UP (2907780) and FA MCR-EX-FD-TUI-UI-2REL-UP (2907781) multifunctional process displays. Can also be used for simplified wall mounting.

## 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

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