

MACX MCR-UI-UI-UP-SP-NC

Order No.: 2811569




<http://eshop.phoenixcontact.co.uk/phoenix/treeViewClick.do?UID=2811569>

Isolating amplifier with safe electrical isolation and wide-range power supply (24 V ... 230 V AC/DC). DIP switches on the front, over 1600 signal conversions can be set. Standard configuration (IN 0 ... 10 V/ OUT 0 ... 20 mA), spring-cage connection, SIL.



Commercial data

EAN	 4 046356 466998
Pack	1
Customs tariff	85437090
Country of Origin	DE
Catalog page information	Page 382 (IF-2011)

Product notes

WEEE/RoHS-compliant since: 10/02/2009



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Technical data

Input data

Voltage input signal	0 mV ... 50 mV
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	0 mV ... 60 mV
	0 mV ... 75 mV
	0 mV ... 100 mV
	0 mV ... 120 mV
	0 mV ... 150 mV
	0 mV ... 200 mV
	0 mV ... 300 mV
	0 mV ... 500 mV
	0 V ... 1 V
	0 V ... 1.5 V
	0 V ... 2 V
	0 V ... 3 V
	0 V ... 5 V
	0 V ... 10 V (Configurable via DIP switches)
	0 V ... 15 V
	0 V ... 20 V
	0 V ... 30 V
	0 V ... 50 V
	0 V ... 100 V
	-50 mV ... 50 mV
	-60 mV ... 60 mV
	-75 mV ... 75 mV
	-100 mV ... 100 mV
	-120 mV ... 120 mV
	-150 mV ... 150 mV
	-200 mV ... 200 mV
	-300 mV ... 300 mV
	-500 mV ... 500 mV
	-1 V ... 1 V
	-1.5 V ... 1.5 V
	-2 V ... 2 V
	-3 V ... 3 V
	-5 V ... 5 V
	-10 V ... 10 V
	-15 V ... 15 V
	-20 V ... 20 V
	-30 V ... 30 V
	-50 V ... 50 V
PHOENIX CONTACT Ltd http://www.phoenixcontact.co.uk	-100 V ... 100 V
	1 V ... 5 V
	2 V ... 10 V

Current input signal	0 mA ... 1 mA (Configurable via DIP switches)
	0 mA ... 1.5 mA
	0 mA ... 2 mA
	0 mA ... 3 mA
	0 mA ... 5 mA
	0 mA ... 10 mA
	0 mA ... 15 mA
	0 mA ... 20 mA
	0 mA ... 30 mA
	0 mA ... 50 mA
	0 mA ... 100 mA
	-1 mA ... 1 mA
	-1.5 mA ... 1.5 mA
	-2 mA ... 2 mA
	-3 mA ... 3 mA
	-5 mA ... 5 mA
	-10 mA ... 10 mA
	-15 mA ... 15 mA
	-20 mA ... 20 mA
	-30 mA ... 30 mA
	-50 mA ... 50 mA
	-100 mA ... 100 mA
	1 mA ... 5 mA
	2 mA ... 10 mA
	4 mA ... 20 mA
Max. input voltage	± 100 V
Max. input current	± 100 mA
Input resistance of voltage input	Approx. 1 MΩ (± 1 V DC ... ± 100 V DC)
Input resistance current input	Approx. 10 Ω (± 10 mA DC ... ± 100 mA DC)
Output data	
Configurable/programmable	Yes, can be switched

Voltage output signal	0 V ... 10 V (Configurable via DIP switches)
	0 V ... 5 V
	2 V ... 10 V
	1 V ... 5 V
	-10 V ... 10 V
	-5 V ... 5 V
	0 V ... 2.5 V
	0.5 V ... 2.5 V
	-2.5 V ... 2.5 V
Current output signal	0 mA ... 5 mA
	0 mA ... 10 mA
	0 mA ... 20 mA (Configurable via DIP switches)
	1 mA ... 5 mA
	2 mA ... 10 mA
	4 mA ... 20 mA
	-5 mA ... 5 mA
	-10 mA ... 10 mA
	-20 mA ... 20 mA
Max. output voltage	15 V
Max. output current	35 mA
Load/output load voltage output	$\geq 1 \text{ k}\Omega$ (10 V)
Load/output load current output	$\leq 600 \Omega$ (20 mA; active)
	(passive: $\leq (U_B - 2 \text{ V}) / I_{\text{outmax}}$)

Power supply

Supply voltage range	24 V ... 230 V AC/DC (-20%/+10%, 50/60 Hz)
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Connection data

Connection method	Spring-cage conn.
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	1.5 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	16
Connection method	COMBICON

General data

Width	12.5 mm
Height	99 mm
Depth	114.5 mm
Maximum transmission error	≤ 0.1 % (Compared to the final value)
Maximum temperature coefficient	0.0075 %/K
Limit frequency (3 dB)	10 kHz (Can be switched to 30 Hz)
Alignment zero	± 4 %
Alignment span	± 4 %
Step response (10-90%)	35 µs (at 10 kHz) 11 ms (At 30 Hz)
Protective circuit	Transient protection
Ambient temperature (operation)	-20 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Degree of protection	IP20
Surge voltage category	II
Pollution degree	2
Rated insulation voltage	300 V AC
Color	green
Housing material	PA 66-FR
Mounting position	Any
Conformance	CE-compliant
ATEX	Ex II 3 G Ex nA nL II T4
IECEX	Ex nA nL II T4
Functional safety (SIL)	SIL 2

Safety characteristic data

Integrity requirement	IEC 61508 - Low demand
Designation	Input isolator (live zero signals)
Architecture	Single-channel, 1oo1
Equipment type	Type A
Safety Integrity Level (SIL)	Up to 2
Safe Failure Fraction (SFF)	85.9 %
MTBF	231 Years
λ_{SU}	3.7×10^{-7} (370 FIT)
λ_{SD}	0

λ_{DU}	6×10^{-8} (60 FIT)
λ_{DD}	0
Probability of a hazardous failure on demand (PFD _{AVG})	2.7×10^{-4} (1 year)
Diagnostic coverage (DC)	0 %
Integrity requirement	IEC 61508 - Low demand
Designation	Output isolator (live zero signals)
Architecture	Single-channel, 1oo1
Equipment type	Type A
Safety Integrity Level (SIL)	Up to 2
Safe Failure Fraction (SFF)	82.7 %
MTBF	233 Years
λ_{SU}	3.5×10^{-7} (350 FIT)
λ_{SD}	0
λ_{DU}	7.3×10^{-8} (73 FIT)
λ_{DD}	0
Probability of a hazardous failure on demand (PFD _{AVG})	3.2×10^{-4} (1 year)
Diagnostic coverage (DC)	0 %
Integrity requirement	IEC 61508 - High demand
Designation	Input isolator (live zero signals)
Architecture	Single-channel, 1oo1
Equipment type	Type A
Safety Integrity Level (SIL)	Up to 2
Safe Failure Fraction (SFF)	85.9 %
MTBF	231 Years
λ_{SU}	3.7×10^{-7} (370 FIT)
λ_{SD}	0
λ_{DU}	5.97×10^{-8} (59.7 FIT)
λ_{DD}	0
Probability of a hazardous failure per hour (PFH _D)	6.0×10^{-8}
Diagnostic coverage (DC)	0 %
Integrity requirement	IEC 61508 - High demand
Designation	Output isolator (live zero signals)
Architecture	Single-channel, 1oo1

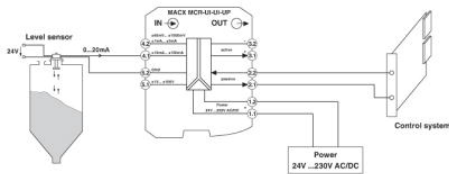
Equipment type	Type A
Safety Integrity Level (SIL)	Up to 2
Safe Failure Fraction (SFF)	82.7 %
MTBF	233 Years
λ_{SU}	3.5×10^{-7} (350 FIT)
λ_{SD}	0
λ_{DU}	7.3×10^{-8} (73 FIT)
λ_{DD}	0
Probability of a hazardous failure per hour (PFH _D)	7.3×10^{-8}
Diagnostic coverage (DC)	0 %

Certificates

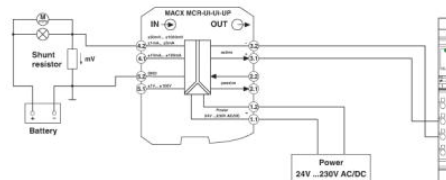
Certification CUL Listed, GL, UL Listed
 Certification Ex: CUL-EX LIS, IECEx, UL-EX LIS

Drawings

Application drawing

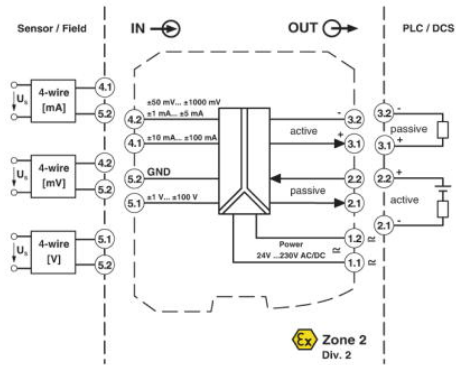


Level measurement with analog input terminals (active input card)

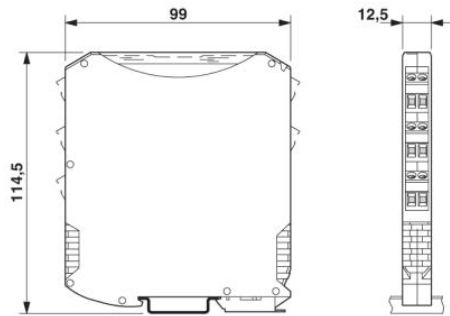


Shunt measurement and Inline terminal with analog input channels within an Inline station (passive input card)

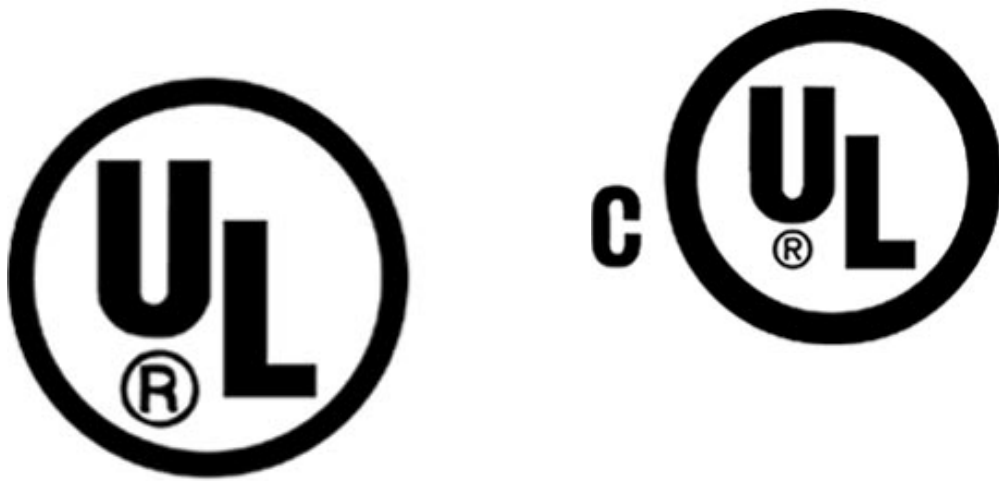
Block diagram



Dimensioned drawing



Connection data incl. use groups



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