

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Ex i-Feed and input signal conditioner with 2 limit value relays, feeds 2-, 3-, and 4-conductor measuring transducer, transmits 1:1 passive or active 0 mA/4 mA ... 20 mA input signals and has 2 configurable limit value outputs. number of channels: 1, Standard configuration, 4-way isolation, Safety Integrity Level (SIL, IEC 61508): 2, Screw connection

## Commercial data

Item number	1290774
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C430
Product key	DK121W
GTIN	4063151521981
Weight per piece (including packing)	214.8 g
Weight per piece (excluding packing)	160 g
Customs tariff number	85437090
Country of origin	DE

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

## Technical data

### Notes

Notes on operation	Installation conditions influence the ambient temperature. Please refer to the "Control cabinet installation instructions".
Notes on operation	Output behavior = input signal

### Product properties

Product type	Repeater power supply
Product family	MACX Analog
No. of channels	1

### Electrical properties

Electrical isolation	4-way isolation
Electrical isolation between input and output	yes
Linearity error	≤ 0.1 %
Typical offset error	≤ 0.1 %
Signal transmission behavior	In = Out
Temperature coefficient, typical	≤ 0.1 % (10 K)
Reverse polarity protection	yes

#### Electrical isolation Input/output IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V <sub>PP</sub>

#### Electrical isolation Input/power supply IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V <sub>PP</sub>

#### Electrical isolation Input/error message output IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V <sub>PP</sub>

#### Electrical isolation Input/limit value contact IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V <sub>PP</sub>

#### Electrical isolation Output/supply

Test voltage	350 V (50 Hz, 60 s)
--------------	---------------------

#### Electrical isolation Output/limit value contact

Test voltage	350 V (50 Hz, 60 s)
--------------	---------------------

#### Electrical isolation Output/supply/error message output

Test voltage	350 V (50 Hz, 60 s)
--------------	---------------------

### Supply

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

Nominal supply voltage	24 V DC
Supply voltage range	18 V ... 31.2 V
Power dissipation	1.5 W ( $R_L$ 250 $\Omega$ )
Power consumption	2 W (20 mA)

## Input data

Signal: Repeater power supply operation

Description of the input	active and passive current input, intrinsically safe
Input signal	Current
Current input signal	4 mA ... 20 mA (with HART) 2 mA ... 22 mA (Function area)
Short-circuit current	$\leq$ 35 mA
Line fault detection	< 3.6 mA (Line break) > 21 mA (Short circuit)
Open-circuit voltage	$\leq$ 26 V

Signal: Signal conditioner operation

Description of the input	Passive current input, intrinsically safe
Current input signal	4 mA ... 20 mA (with HART) 2 mA ... 22 mA (Function area)
Input resistance current input	> 250 $\Omega$ (for mA sources)
Input current	$\leq$ 50 mA (for mA sources)
Short-circuit current	$\leq$ 35 mA
Line fault detection	< 3.6 mA (Line break) > 21 mA (Short circuit)
Open-circuit voltage	$\leq$ 26 V

## Output data

Signal: Error message output

Maximum switching voltage	30 V
Max. switching current	100 mA

Switching: Relay

Contact switching type	2 N/O contacts
Max. switching current	$\leq$ 170 mA (Resistive load) $\leq$ 500 mA ( $\leq$ 1 ms)
Typical response time	< 80 ms
Typical turn-off time	< 100 ms

Signal: Repeater power supply operation

Output description	Current output (active)
Current output signal	4 mA ... 20 mA (with HART) 2 mA ... 22 mA (Function area)
Load	0 $\Omega$ ... 600 $\Omega$

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

Output ripple (current)	≤ 40 µA (effective)
-------------------------	---------------------

Signal: Signal conditioner operation

Output description	Signal conditioner operation
Current output signal	4 mA ... 20 mA (with HART)
	2 mA ... 22 mA (Function area)
Load	0 Ω ... 600 Ω
Output ripple (current)	≤ 40 µA (effective)

## Connection data

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross-section rigid	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

## Ex data

Ex installation (EPL)	Gc
Ex i circuits (EPL)	[Ga]
	[Da]
	[Ma]

Safety data: Repeater power supply operation (2-conductor measuring transducer)

Note	With connection of measuring transducers
Max. internal inductance $L_i$	negligible
Max. internal capacitance $C_i$	negligible
Max. output voltage $U_o$	27 V
Max. output current $I_o$	87.9 mA
Max. output power $P_o$	574 mW
Safety-related maximum voltage $U_m$	253 V AC
IIB/IIIC (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	14 mH / 705 nF
IIC (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	2.3 mH / 90 nF
IIB/IIIC (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	10 mH / 290 nF, 1 mH / 380 nF, 0.2 mH / 600 nF
IIC (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	1 mH / 56 nF, 0.5 mH / 72 nF, 0.2 mH / 90 nF

Safety data: Repeater power supply operation (3-conductor measuring transducer)

Note	With connection of measuring transducers
Max. internal inductance $L_i$	negligible
Max. internal capacitance $C_i$	negligible
Max. output voltage $U_o$	27 V
Max. output current $I_o$	88.3 mA
Max. output power $P_o$	574 mW

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

Safety-related maximum voltage $U_m$	253 V AC
IIB/IIIC (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	14 mH / 705 nF
IIC (simple circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	2.3 mH / 90 nF
IIB/IIIC (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	10 mH / 290 nF, 1 mH / 380 nF, 0.2 mH / 600 nF
IIC (mixed circuit): Max. external inductivity $L_o$ / Max. external capacitance $C_o$	1 mH / 56 nF, 0.5 mH / 72 nF, 0.2 mH / 90 nF

## Safety data: Signal conditioner operation

Note	With connection of power sources
Input voltage $U_i$	30 V
Input current $I_i$	100 mA
Max. internal inductance $L_i$	negligible
Max. internal capacitance $C_i$	negligible
Max. output voltage $U_o$	4.1 V
Max. output current $I_o$	0 mA
Max. output power $P_o$	0 mW

## Interfaces

### Data communication (bypass)

Protocols supported	HART-transparent
Frequency measuring range	0.5 kHz ... 10 kHz (bidirectional HART transmission)

## Signaling

Status display	Green LED (supply voltage)
	LED yellow (switching state)
	Red LED (line errors)

## Dimensions

Dimensional drawing	
Width	17.5 mm
Height	112.5 mm
Depth	113.7 mm
Depth NS 35/7,5	114.5 mm (Snapped onto DIN rail NS 35/7,5 in accordance with EN 60715)

## Material specifications

Flammability rating according to UL 94	V0
--	----

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

Housing material	PA 6.6
------------------	--------

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20 (Terminal blocks)
	IP30 (Housing)
Ambient temperature (operation)	-40 °C ... 70 °C (Stand-alone device: any mounting position)
	-40 °C ... 48 °C (Group assembly: vertical DIN rail without circulating air)
	-40 °C ... 58 °C (Group assembly: vertical DIN rail with circulating air)
	-40 °C ... 56 °C (Group assembly: horizontal DIN rail without circulating air)
	-40 °C ... 60 °C (Group assembly: horizontal DIN rail with circulating air)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	≤ 95 % (non-condensing)

## Approvals

### ATEX

Identification	⊕ II (1) G [Ex ia Ga] IIC
	⊕ II (1) D [Ex ia Da] IIIC
	⊕ II 3 (1) G Ex nA nC [ia Ga] IIC T4 Gc
	⊕ I (M1) [Ex ia Ma] I

### IECEX

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA nC [ia Ga] IIC T4 Gc
	[Ex ia Ma] I

### Safety Integrity Level (SIL, IEC 61508)

Identification	2
----------------	---

## EMC data

Electromagnetic compatibility	Tested in accordance with the following standards and regulations: EN 61326-1 For industrial use, NAMUR NE 21
-------------------------------	---

## Standards and regulations

Electrical isolation	4-way isolation
----------------------	-----------------

## Mounting

Mounting type	NS 35/15, NS 35/7,5
Mounting position	vertical, horizontal

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply

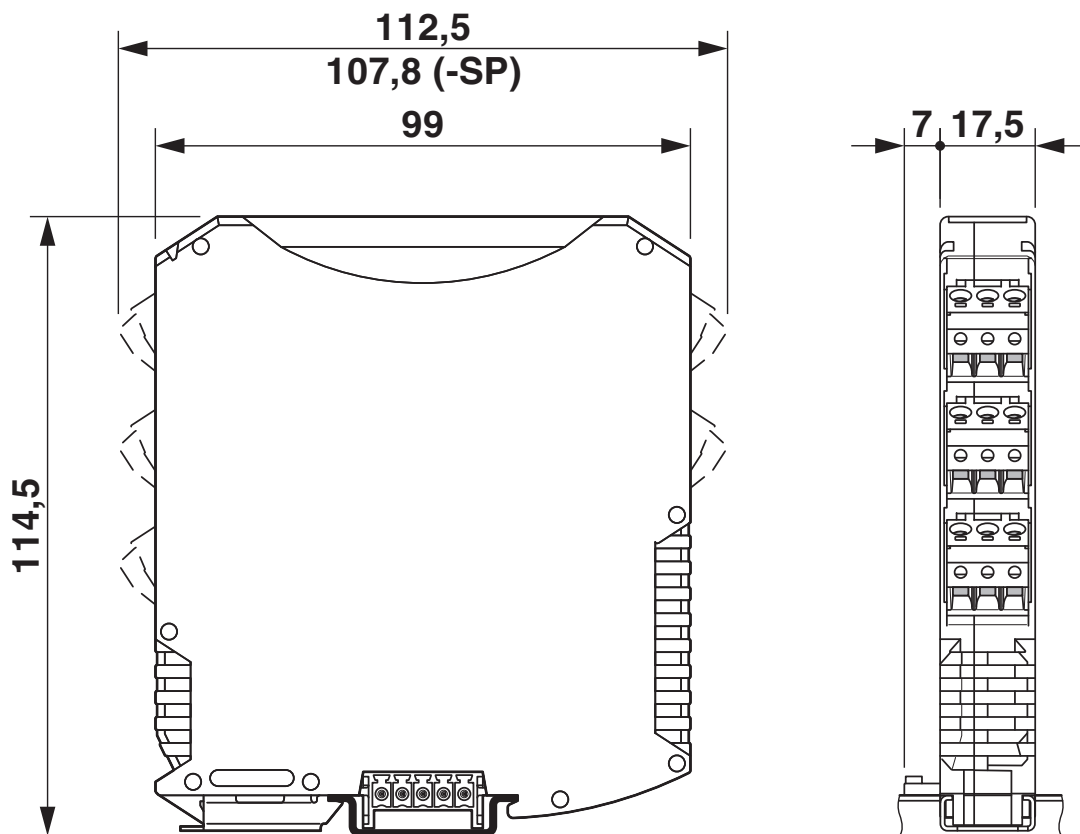


1290774

<https://www.phoenixcontact.com/us/products/1290774>

## Drawings

Dimensional drawing



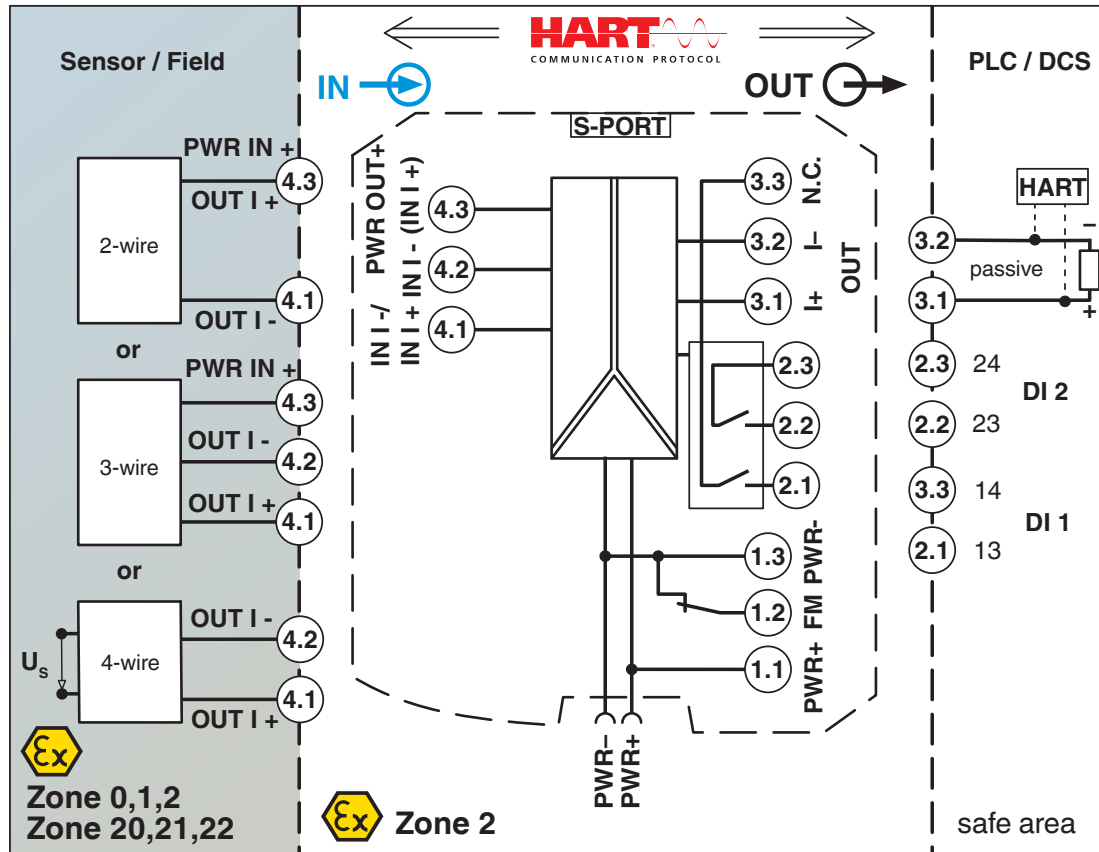
# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

Block diagram



# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1290774>

### Functional Safety

Approval ID: 22/05-248 R030 V1R0



### IECEX

Approval ID: IECEx BVS 21.0020X



### ATEX

Approval ID: BVS 21 ATEX E 018X

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

## Classifications

### ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

### ETIM

ETIM 10.0	EC002653
-----------	----------

# MACX MCR-EX-AP-RPSS-I-IR - Repeater power supply



1290774

<https://www.phoenixcontact.com/us/products/1290774>

## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	5c70f3a0-d3d5-4e67-878e-c81daa193ad7

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)