

# EMG 12-TR/INV - Switching amplifier

2943437

<https://www.phoenixcontact.com/us/products/2943437>

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Inverter module. The inverter module inverts the signals of ground switching n-p-n transistor outputs into plus switching p-n-p outputs, and vice versa.

## Commercial data

Item number	2943437
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	C460
Product key	DK61C3
GTIN	4017918081089
Weight per piece (including packing)	30.65 g
Weight per piece (excluding packing)	30.96 g
Customs tariff number	85365019
Country of origin	DE

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## Technical data

### Product properties

Product type	Solid-state relay module
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### Insulation characteristics

Overvoltage category	II
Pollution degree	2

### Electrical properties

#### Supply

Supply voltage range	20 V DC ... 30 V DC ( $U_V$ )
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### Input data

#### NPN

Switching threshold "1" signal voltage	$< 7 \text{ V}$ (at $U_V = 24 \text{ V}$ ; $< (U_V - 17 \text{ V})$ )
Switching threshold "0" signal, voltage	$> 15 \text{ V}$ (at $U_V = 24 \text{ V}$ ; $> (U_V - 9 \text{ V})$ )
Min. voltage input signal	-2 V
Max. voltage input signal	26 V (at $U_V = 24 \text{ V}$ ; $U_V + 2 \text{ V}$ )

#### PNP

Switching threshold "1" signal voltage	$> 17 \text{ V}$
Switching threshold "0" signal, voltage	$< 9 \text{ V}$
Min. voltage input signal	-2 V
Max. voltage input signal	26 V (at $U_V = 24 \text{ V}$ ; $U_V + 2 \text{ V}$ )

### Output data

Continuous load current	200 mA
Leakage current	$< 1 \text{ mA}$
Residual voltage	$< 1 \text{ V}$
Transmission frequency	15 kHz

### Connection data

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 4 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 ... 12
Tightening torque	0.5 Nm ... 0.6 Nm

### Dimensions

Width	12.5 mm
Height	75 mm

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Depth	55 mm
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## Material specifications

Color	green (RAL 6021)
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## Environmental and real-life conditions

### Ambient conditions

Ambient temperature (operation)	0 °C ... 55 °C
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## Standards and regulations

Standards/regulations	IEC 664
	IEC 664 A
	DIN VDE 0110-1

## Mounting

Mounting type	DIN rail mounting
Mounting position	any

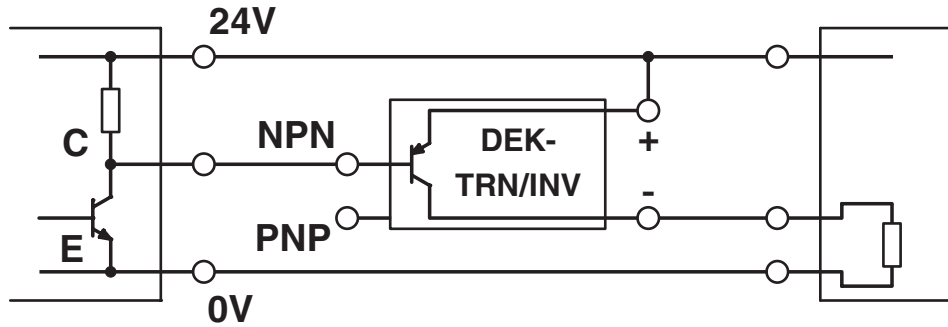
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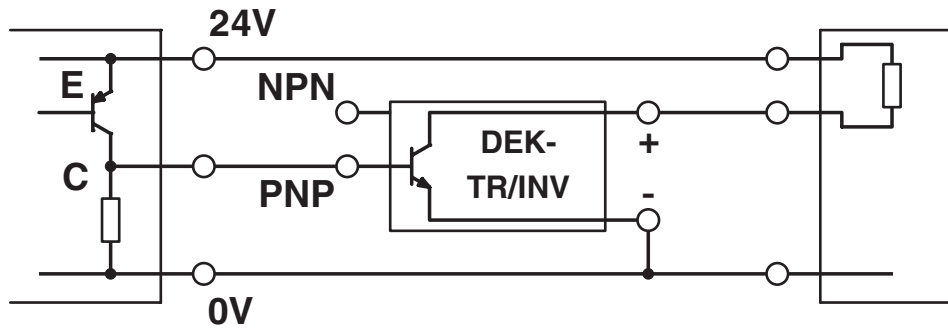
## Drawings

Application drawing

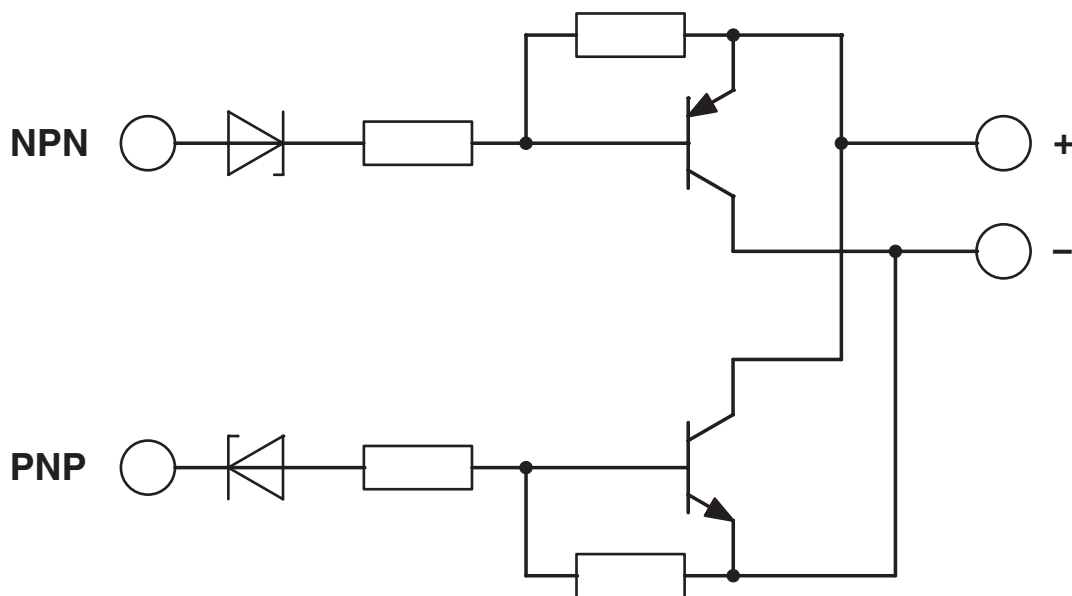


a = NPN output  
b = load

Application drawing



Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2943437>



**EAC**

Approval ID: RU\*DE\*08.B.01841/19

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## Classifications

### ECLASS

ECLASS-13.0	27371604
ECLASS-15.0	27371604

### ETIM

ETIM 10.0	EC001504
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### UNSPSC

UNSPSC 21.0	39122300
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 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	968e3bee-5809-4854-bb3b-763a0336fd7d

### EF3.1 Climate Change

CO2e kg	0.602 kg CO2e
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