

MINI MCR-EX-SD-16-50-LP-PT - Solenoid driver



1157870

<https://www.phoenixcontact.com/in/products/1157870>

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Ex i-Solenoid driver for controlling Ex i solenoid valves in the Ex area. no-load voltage: 16 V DC, current limitation: 50 mA, Standard configuration, Loop-powered, Safety Integrity Level (SIL, IEC 61508): 3, Push-in connection

Commercial data

Item number	1157870
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DK1224
GTIN	4063151163501
Weight per piece (including packing)	118.5 g
Country of origin	DE

Technical data

Product properties

Product type	Solenoid driver
Product family	MINI Analog Pro

Electrical properties

Electrical isolation

Overvoltage category	II (≤ 5000 m)
Pollution degree	2 (≤ 5000 m)

Electrical isolation Input/output IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V _{rms}
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Double/reinforced insulation

Electrical isolation Input/output IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	265 V _{rms}

Electrical isolation Input/output IEC/EN 60079-7

Standards/regulations	IEC/EN 60079-7
Rated insulation voltage	251 V _{rms}

Supply

Supply voltage range	loop-powered, no external supply necessary
Power consumption	< 1.4 W

Input data

Signal: Voltage

Number of inputs	1
Voltage input signal	19.2 V DC ... 30 V DC (24 V DC, -20 % ... +25 %)

Output data

Signal: Voltage

Number of outputs	1
Output voltage	≥ 10.7 V DC (50 mA)
Output resistor	$\geq 103 \Omega$ (Internal resistance R _i)
Current limitation	> 50 mA
Response time	< 50 ms
Non-load voltage	> 16 V DC
Short-circuit-proof	yes

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Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ² (with ferrule) 0.14 mm ² ... 2.5 mm ² (without ferrule)
Conductor cross section flexible	0.14 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 12 (flexible)

Ex data

Ex installation (EPL)	Gc
	Div. 2
Ex i circuits (EPL)	Ga
	Da
	Ma
	Div. 1

Safety data

Max. internal inductance L_i	negligible
Max. internal capacitance C_i	11 nF
Max. output voltage U_o	19.2 V
Max. output current I_o	185 mA
Max. output power P_o	888 mW
Safety-related maximum voltage U_m	253 V AC
	125 V DC
IIA (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	7 mH / 6.1 μ F
IIB/IIIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	4 mH / 1.53 μ F
IIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	0.8 mH / 240 nF
I (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	10 mH / 8.7 μ F

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C

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Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Altitude range (IEC/EN 61010-1)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C
Rated insulation voltage	300 V _{rms} (Input/output)
Insulation	Double/reinforced insulation

Altitude range (IEC/EN 61010-1)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Rated insulation voltage	300 V _{rms} (Input/output)
Insulation	Double/reinforced insulation

Altitude range (IEC/EN 61010-1)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Rated insulation voltage	150 V _{rms} (Input/output)
Insulation	Double/reinforced insulation

Altitude range (IEC/EN 60079-11)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C
Safety-related maximum voltage U _m	121 V AC 110 V DC
Rated insulation voltage	150 V _{rms} (Input/output)

Altitude range (IEC/EN 60079-11)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C
Safety-related maximum voltage U _m	33 V AC/DC
Rated insulation voltage	60 V _{rms} (Input/output)

Altitude range (IEC/EN 60079-11)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Safety-related maximum voltage U _m	33 V AC/DC
Rated insulation voltage	60 V _{rms} (Input/output)

Altitude range (IEC/EN 60079-7)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 63 °C
Rated insulation voltage	162 V _{rms} (Input/output)

Altitude range (IEC/EN 60079-7)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 56 °C

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Rated insulation voltage	60 V _{rms} (Input/output)
Altitude range (IEC/EN 60079-7)	
Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 49 °C
Rated insulation voltage	60 V _{rms} (Input/output)

Approvals

CE

Certificate	CE-compliant
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ATEX

Identification	⚡ II (1) G [Ex ia Ga] IIC
	⚡ II (1) D [Ex ia Da] IIIC
	⚡ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
	⚡ I (M1) [Ex ia Ma] I
Certificate	TÜV 21 ATEX 8651 X

IECEX

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
	[Ex ia Ma] I
Certificate	IECEX TUR 21.0043 X

UKCA Ex (UKEX)

Identification	⚡ II (1) G [Ex ia Ga] IIC
	⚡ II (1) D [Ex ia Da] IIIC
	⚡ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
	⚡ I (M1) [Ex ia Ma] I
Certificate	TÜV 21 UKEX 7021 X

CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	2023122310116238

UL, USA/Canada

Identification	UL 61010-2-201
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Safety Integrity Level (SIL, IEC 61508)

Identification	3
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EMC data

Electromagnetic compatibility	Tested in accordance with the following standards and regulations: EN 61326-1 For industrial use, NAMUR NE 21
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Noise immunity	IEC/EN 61000-6-2
	IEC/EN 61326-3-2
Noise emission	IEC/EN 61000-6-4

Standards and regulations

GB Standard

Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.4

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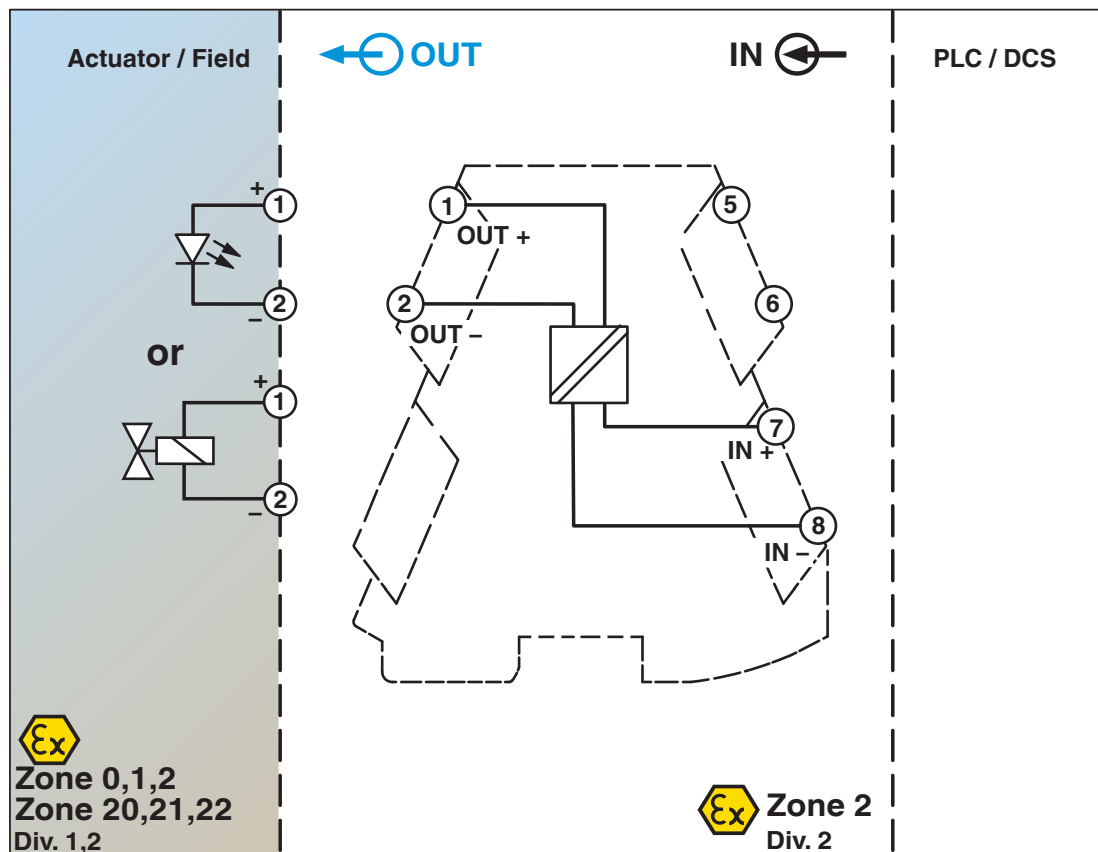


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Drawings

Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/in/products/1157870>



IECEx

Approval ID: IECEx TUR 21.0043X



ATEX

Approval ID: TUV 21 ATEX 8651 X



CCC

Approval ID: 2023122316116237



UKCA-EX

Approval ID: TUV21UKEX7021X

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Classifications

ECLASS

ECLASS-11.0	27210120
ECLASS-12.0	27210120
ECLASS-13.0	27210120

ETIM

ETIM 9.0	EC002653
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	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	7cc67b5b-d0ea-4a3a-ab5f-8b40bed58ccc

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Accessories

MCR-DP - Separating plate

1430594

<https://www.phoenixcontact.com/in/products/1430594>

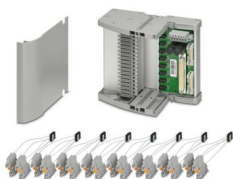


The partition plate is used to maintain Ex i isolating distances when Ex i and non-Ex i devices are mounted side by side on a DIN rail.

TC-D37SUB-AIO16-MP-PS-UNI - Module carrier

2906640

<https://www.phoenixcontact.com/in/products/2906640>



Universal Termination Carrier for connecting 16 MINI Analog Pro signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection), with HART multiplexer connection

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TC-D37SUB-ADIO16-MP-P-UNI - Module carrier

2906639

<https://www.phoenixcontact.com/in/products/2906639>

Universal Termination Carrier for connecting 16 MINI Analog Pro signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection)



MINI MCR-2-V8-FLK 16 - System adapter

2901993

<https://www.phoenixcontact.com/in/products/2901993>



Eight MINI Analog Pro signal conditioners and measuring transducers can be connected to a controller with minimal cabling effort and without any errors using system adapters and system cabling.

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UCT-EM (30X5) - Marker for end clamp

0801505

<https://www.phoenixcontact.com/in/products/0801505>



Marker for end clamp, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: latching, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm

UCT-EM (30X5) CUS - Marker for end clamp

0801589

<https://www.phoenixcontact.com/in/products/0801589>



Marker for end clamp, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snapped into marker carrier, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm

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SK 5,0 WH:REEL - Marker strip

0805221

<https://www.phoenixcontact.com/in/products/0805221>



Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 90000 mm

UC-EMLP (15X5) - Plastic label

0819301

<https://www.phoenixcontact.com/in/products/0819301>



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

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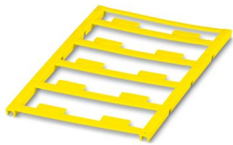
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UC-EMLP (15X5) YE - Plastic label

0822615

<https://www.phoenixcontact.com/in/products/0822615>



Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

UC-EMLP (15X5) CUS - Plastic label

0824550

<https://www.phoenixcontact.com/in/products/0824550>



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, text field height: 5 mm, text field width: 15 mm

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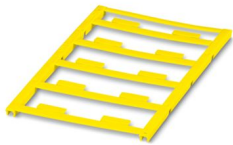
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UC-EMLP (15X5) YE CUS - Plastic label

0824551

<https://www.phoenixcontact.com/in/products/0824551>



Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, text field height: 5 mm, text field width: 15 mm

UC-EMLP (15X5) SR - Plastic label

0828095

<https://www.phoenixcontact.com/in/products/0828095>



Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

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UC-EMLP (15X5) SR CUS - Plastic label

0828099

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Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 10, text field height: 5 mm, text field width: 15 mm

US-EMLP (15X5) - Plastic label

0828790

<https://www.phoenixcontact.com/in/products/0828790>



Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

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US-EMLP (15X5) YE - Plastic label

0828873

<https://www.phoenixcontact.com/in/products/0828873>



Plastic label, Card, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

US-EMLP (15X5) SR - Plastic label

0828874

<https://www.phoenixcontact.com/in/products/0828874>



Plastic label, Card, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm

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US-EMLP (15X5) CUS - Plastic label

0830076

<https://www.phoenixcontact.com/in/products/0830076>

Plastic label, Card, can be ordered: by card, white, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm



US-EMLP (15X5) YE CUS - Plastic label

0830077

<https://www.phoenixcontact.com/in/products/0830077>

Plastic label, Card, can be ordered: by card, yellow, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm



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US-EMLP (15X5) SR CUS - Plastic label

0830078

<https://www.phoenixcontact.com/in/products/0830078>

Plastic label, Card, can be ordered: by card, silver, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 189, text field height: 5 mm, text field width: 15 mm



UCT-EM (30X5) YE - Marker for end clamp

0830340

<https://www.phoenixcontact.com/in/products/0830340>

Marker for end clamp, Sheet, yellow, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: latching, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm



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UCT-EM (30X5) YE CUS - Marker for end clamp

0830348

<https://www.phoenixcontact.com/in/products/0830348>



Marker for end clamp, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: snapped into marker carrier, Number of individual labels: 24, text field height: 5 mm, text field width: 30 mm

SZS 0,6X3,5 - Screwdriver

1205053

<https://www.phoenixcontact.com/in/products/1205053>



Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

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