Products   Solutions   Services

Safety Instructions
Proline Promag 300

NEPSI: Zone 1
         Zone 21

Endress+Hauser [EH]

People for Process Automation

Proline Promag 300

Table of contents

Associated documentation

For an overview of the scope of the associated Technical Documentation, refer to the following:
- *Device Viewer* (www.endress.com/deviceviewer): Enter serial number from nameplate.
- *Endress+Hauser Operations app*: Enter serial number from nameplate or scan matrix code on nameplate.

To commission the device, please observe the Operating Instructions pertaining to the device:

Measuring device	Documentation code			
	HART	FOUNDATION Fieldbus	PROFIBUS PA	PROFIBUS DP
Promag H 300	BA01392D	BA01477D	BA01396D	BA01865D
Promag P 300	BA01393D	BA01478D	BA01397D	BA01853D
Promag W 300	BA01918D	BA01938D	BA01928D	BA01940D

Measuring device	Documentation code		
	Modbus RS485	EtherNet/IP	PROFINET
Promag H 300	BA01394D	BA01716D	BA01718D
Promag P 300	BA01395D	BA01717D	BA01719D
Promag W 300	BA01939D	BA01937D	BA01941D

Additional documentation

Contents	Document type	Documentation code
Remote display and operating module DKX001	Special documentation	SD01763D
	Safety Instructions Ex ia or Ex tb	XA01502D
Explosion Protection	Brochure	CP00021Z/11
Ethernet-APL Installation Drawing	Installation Drawing	HE_01622

Please note the documentation associated with the device.

Certificates and declarations

NEPSI Declaration of Conformity

Certificate number:

GYJ22.1051X

Affixing the certificate number certifies conformity with the following standards (depending on the device version):

- GB/T 3836.1-2021
- GB/T 3836.2-2021
- GB/T 3836.3-2021
- GB/T 3836.4-2021
- GB/T 3836.8-2021
- GB/T 3836.31-2021

Manufacturer address	Endress+Hauser Flowtec AG Kägenstrasse 7 4153 Reinach BL Switzerland

Extended order code

The extended order code is indicated on the nameplate, which is affixed to the device in such a way that it is clearly visible. Additional information about the nameplate is provided in the associated Operating Instructions.

Structure of the extended order code

* * * * * *	_	* * * * * ... * * * * *	+	A*B*C*D*E*F*G*...
(Device type)		*(Basic specifications)*		*(Optional specifications)*

* = Placeholder
At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.

Device type

The device and the device design is defined in the "Device type" section (Product root).

Basic specifications

The features that are absolutely essential for the device (mandatory features) are specified in the basic specifications. The number of positions depends on the number of features available.
The selected option of a feature can consist of several positions.

Optional specifications

The optional specifications describe additional features for the device (optional features). The number of positions depends on the number of features available. The features have a 2-digit structure to aid identification (e.g. JA). The first digit (ID) stands for the feature group and consists of a number or a letter (e.g. J = Test, Certificate). The second digit constitutes the value that stands for the feature within the group (e.g. A = 3.1 material (wetted parts), inspection certificate).

More detailed information about the device is provided in the following tables. These tables describe the individual positions and IDs in the extended order code which are relevant to hazardous locations.

Device type

Position	Order code for	Option selected	Description
1	Instrument family	5	Electromagnetic flowmeter
2	Sensor	H, P, W [1]	Sensor type
3	Transmitter	3	Transmitter type: 4-wire, compact version
4	Generation index	B	Platform generation
5, 6	Nominal diameter	Examples: 02, 04, 40, 50, 1H, 1Z, T0, E4 [2] [3]	Nominal diameter of sensor

1) For replacement transmitter only: X
2) For the exact specification of the nominal diameter, see nameplate
3) For replacement transmitter only: XX

Basic specifications

Position 1, 2 Order code for "Approval" Option selected	Position 4, 5 Order code for "Output, input 1" Option selected	Type of protection	
		Transmitter	Sensor
NB [1]	BA, BB, GA, LA, MA, MB, NA, RA, RB, SA	Ex db eb ia IIC T1...T6 Gb Ex tb IIIC T**°C Db	Ex eb ia IIC T1...T6 Ex ia tb IIIC T**°C Db
	CA, CB, CC, HA, MC, RC, TA	Ex db eb ia [ia Ga] IIC T1...T6 Gb Ex tb [ia Da] IIIC T**°C Db	
ND [2]	BA, BB, GA, LA, MA, MB, NA, RA, RB, SA	Ex db eb ia IIC T1...T6 Gb Ex tb IIIC T**°C Db	Ex eb ia IIC T1...T6 Ex ia tb IIIC T**°C Db
	CA, CB, CC, HA, MC, RC, TA	Ex db eb ia [ia Ga] IIC T1...T6 Gb Ex tb [ia Da] IIIC T**°C Db	

1) Connection compartment of the transmitter Ex eb
2) Connection compartment of the transmitter Ex db

Position	Order code for	Option selected	Description
4, 5	Output, input 1	BA	4-20mA HART
		CA	4-20mA HART Ex-i passive
		CC	4-20mA HART Ex-i active
		GA	PROFIBUS PA

Position	Order code for	Option selected	Description
		HA	PROFIBUS PA Ex-i
		LA	PROFIBUS DP
		MA	Modbus RS485
		MB	Modbus TCP with Ethernet-APL
		MC	Modbus TCP with Ethernet-APL Ex i
		NA	EtherNet/IP 2-port switch integrated
		RA	PROFINET IO 2-port switch integrated
		RB	PROFINET with Ethernet-APL
		RC	PROFINET with Ethernet-APL Ex i
		SA	FOUNDATION Fieldbus
		TA	FOUNDATION Fieldbus Ex-i
6	Output, input 2	A	W/o
		B	4-20mA
		C	4-20mA Ex-i passive
		D	Configurable I/O initial setting off
		E	Pulse/frequency/switch output
		F	Pulse output, phase-shifted
		G	Pulse/frequency/switch output Ex-i passive
		H	Relay
		I	4-20mA input
		J	Status input
7	Output, input 3	A	W/o
		B	4-20mA
		C	4-20mA Ex-i passive
		D	Configurable I/O initial setting off
		E	Pulse/frequency/switch output
		F	Pulse output, phase-shifted
		G	Pulse/frequency/switch output Ex-i passive
		H	Relay
		I	4-20mA input
		J	Status input
8	Display; Operation	A	W/o; via communication
		F	4-line, illuminated; touch control

Position	Order code for	Option selected	Description
		G	4-line, illuminated; touch control + WLAN
		M	W/o; prepared for remote display DKX001 [1]
		O	Separate, with remote display DKX001 [1], 4-line, illuminated; 10 m / 30 ft cable; touch control
9	Housing	A	Alu, coated
11	Liner	A	PFA
		B	PFA High-temperature
		E	PTFE
		H	Hard rubber
		Q	PTFE 90℃
		U	Polyurethane
17, 18	Device Model	A1	1
		A2	2

1)   DKX001 is approved according to GYJ21.1084.

Optional specifications

ID	Order code for	Option selected	Description
Px	Enclosed accessories	P8	Wireless antenna, wide area (external WLAN antenna) [1]

1)   The external WLAN antenna is available with the order code for "Accessory Enclosed", option P8.

Safety instructions: General

- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion protection
  - Be familiar with national regulations or guidelines (e.g. GB/T 3836.15-2017)
- Install the device according to the manufacturer's instructions and the following standards:
  - GB 50257-2014 "Code for construction and acceptance of electric device for explosive atmospheres and fire hazard electrical equipment installation engineering"
  - GB/T 3836.13-2021 "Explosive atmospheres – Part 13: Equipment repair, overhaul, reclamation and modification"
  - GB/T 3836.15-2017 "Explosive atmospheres – Part 15: Electrical installations design, selection and erection"
  - GB/T 3836.16-2017 "Explosive atmospheres – Part 16: Electrical installations inspection and maintenance"
  - GB/T 3836.18-2017 "Explosive atmospheres – Part 18: Intrinsically safe electrical systems"
  - GB 15577-2018: "Safety regulations for dust explosion prevention and protection". (Only if installed in dust hazardous areas.)
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Only use the device in media to which the wetted materials have sufficient durability.
- Refer to the temperature tables for the relationship between the permitted ambient temperature for the sensor and/or transmitter, depending on the range of application, and the temperature classes.
- Alterations to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.
- When using in hybrid mixtures (gas and dust occurring simultaneously), observe additional measures for explosion protection.
- Open the housing cover of the transmitter housing in explosion protection Ex db only if one of the following conditions is met:
  - An explosive atmosphere is not present.
  - A waiting time of 10 minutes is observed after switching off the power supply.
    The following warning notice is on the device:
    WARNING – AFTER DE-ENERGIZING, DELAY 10 MINUTES BEFORE OPENING ENCLOSURE IN TYPE OF PROTECTION EX D
- In devices with damaged Ex d threads:
  - Use in hazardous areas is not permitted.
  - Repair of Ex d threads is not permitted.
- Observe all the technical data of the device (see nameplate).

Safety instructions: Installation	• In the event of potentially explosive vapor/air mixtures, only operate the device under atmospheric conditions [1]
	  • Temperature: –20 to +60 ℃
	  • Pressure: 80 to 110 kPa (0.8 to 1.1 bar)
	  • Air with normal oxygen content, usually 21 % (V/V)
	• Continuous service temperature of the connecting cable: –40 to +80 ℃; in accordance with the range of service temperature taking into account additional influences of the process conditions ($T_{a,min}$ and $T_{a,max}$ + 20 K).
	• Only use certified cable entries suitable for the application. Observe selection criteria as per GB/T3836.15-2017.
	• The following applies when connecting the transmitter with a connection compartment in Ex db:
	Only use separately certified cables and wire entries (Ex db IIC) which are suitable for operating temperatures up to 85 ℃ and for IP 66/67. If using conduit entries, the associated sealing mechanisms must be mounted directly on the housing.
	Plastic sealing plugs act as transport protection and have to be replaced by suitable, individually approved installation material.
	The mounted metal thread extensions and blind plugs are tested and certified as part of the housing for type of protection Ex db IIC. The thread extension or the blind plug labeled as follows for identification purposes:
	  • Md: M20 x 1.5
	  • d: NPT ½"
	  • Gd: G ½"
	• The following applies when connecting the transmitter with a connection compartment in Ex eb:
	Only use separately certified cable and wire entries and sealing plugs (Ex eb IIC) which are suitable for operating temperatures up to 85 ℃ and for IP 66/67. The cables must be routed such that they are securely seated, and sufficient strain relief must be ensured.
	The mounted metal thread extensions and blind plugs supplied are tested and certified as part of the housing for type of protection Ex eb IIC. Plastic sealing plugs act as transport protection and have to be replaced by suitable, individually approved installation material.
	Supplied cable glands are separately certified and marked as components and meet device specification requirements.

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[1]   If no potentially explosive mixtures are present, or if additional protective measures have been taken, the device may also be operated under non-atmospheric conditions in accordance with the manufacturer's specifications.

- When the measuring device is connected, attention must be paid to explosion protection at the transmitter.
- Turning the transmitter housing
  - Loosen both hexagon socket screws until the transmitter housing can be turned.
  - Turn transmitter housing to desired position (mechanically limited); if necessary turn 270° in other direction.
  - Tighten both hexagon socket screws with a maximum of 7 Nm.
- In potentially explosive atmospheres:
  - Do not disconnect the electrical connection of the power supply circuit when energized.
  - Do not open the connection compartment cover when energized.

- When connecting through a conduit entry approved for this purpose, mount the associated sealing unit directly at the enclosure.
- Seal unused entry glands with approved sealing plugs that correspond to the type of protection. The plastic transport sealing plug does not meet this requirement and must therefore be replaced during installation.
- Only use certified sealing plugs. The metal sealing plugs supplied meet this requirement.
- Transmitters with Ex db eb approval must not be connected via the service interface (CDI-RJ45)! Order code "Approval; Transmitter + Sensor", options (Ex de): NB

Optional external WLAN antenna

- The external WLAN antenna can be used only in conjunction with an Ex eb connection compartment.
  Use with an Ex db connection compartment is not permitted.
- Connect the antenna bushing H337 to the transmitter housing and tighten by hand.
- Use only external antennas supplied by Endress+Hauser.
- Connect antenna or antenna cable with plug-in connector type N (MIL-STD-348) to antenna bushing H337.

Optional RFID TAG

- In the case of high electromagnetic field intensities in accordance with GB/T 3836.15-2017: Use is not permitted.
- Avoid electrostatic charging.
- Ensure sufficient distance from processes generating high charges.

Intrinsic safety

- Observe the guidelines for interconnecting intrinsically safe circuits (e.g. GB/T 3836.15-2017 , Proof of Intrinsic Safety).
- When the intrinsically safe Ex ia circuits of the device are connected to certified intrinsically safe circuits of Category Ex ib for Equipment Groups IIC or IIB, the type of protection changes to Ex ib IIC or Ex ib IIB.
- The device can be connected to the remote display DKX001 which has Ex ia explosion protection: refer to the Special documentation and Ex documentation.

  - When using the remote display and operating module DKX001 the internal display and operating module must be removed.
  - When using the separate approved, remote display and operating module DKX001, only use the following variants: Basic specification of the remote display and operating module DKX001, order code "Approval", option NE

Potential equalization

- Integrate the device into the potential equalization .
- If the ground connection has been established via the pipe as specified, it is also possible to integrate the sensor into the potential equalization system via the pipe.
- The antenna bushing H337 of the external antenna must be integrated into the potential equalization system. This is the case if the sensor is connected in accordance with the regulations via the coupling.

Safety instructions: Zone 21

- To ensure dust-tightness, securely seal all housing openings, cable entries and sealing plugs.
- Only open all housing briefly, ensuring that no dust or moisture enters the housing.
- Only use certified cable entries. The metal cable entries, extensions and sealing plugs supplied meet this requirement.
- The metal extensions and blind plugs supplied are tested and certified as part of the enclosure for explosion protection Ex tb IIIC. Plastic sealing plugs in extensions act as transport protection and have to be replaced by suitable, individually approved installation material. Supplied cable glands are separately certified and marked as components and meet device specification requirements.
- If the transmitter is connected to the remote display and operating module DKX001, the circuit has Ex ia IIIC explosion protection. Connection values , DKX001→ 🕮 20

Temperature tables	**Ambient temperature**

Ambient temperature

Minimum ambient temperature

$T_a = -40\ °C$

Maximum ambient temperature

$T_a = +60\ °C$ depending on the medium temperature and temperature class.

Medium temperature

Minimum medium temperature

$T_m = -40$ to $0\ °C$ depending on the selected device version (see nameplate!)

Maximum medium temperature

T_m for T1...T6 depending on the maximum ambient temperature T_a

Maximum medium temperature with or without thermal insulation according to Endress+Hauser specifications

Promag H

DN	T_a [°C]	T_m [°C]					
		T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
Without thermal insulation							
2...150	50	80 [1]	95	130	150	150	150
	55 [2]	65 [1]	80	130	150	150	150
	60 [2]	–	–	115	115	115	115

[1] $T_m = 50\ °C$ for optional specification, ID Cx (Sensor option) = CI (Fluid Temperature Probe)
[2] $T_a = 50\ °C$ for optional specification, ID Cx (Sensor option) = CI (Fluid Temperature Probe)

Promag P

DN	Liner	T_a [°C]	T_m [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
Without thermal insulation								
15...600	PTFE	45	80	90	130	130	130	130
		50	60	90	130	130	130	130
		55	–	–	130	130	130	130
		60	–	–	100	100	100	100

DN	Liner	T$_a$ [°C]	T$_m$ [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
25...200	PFA	40	80	95	130	150	150	150
		45	80	95	130	130	130	130
		50	60	90	130	130	130	130
		60	–	–	100	100	100	100
Extended neck for insulation (Optional specification, ID Cx (Sensor Option) = CG), with or without thermal insulation								
15...300	PTFE	50	60	95	130	130	130	130
		55	–	95	130	130	130	130
		60	–	–	100	100	100	100
25...200	PFA	45	80	95	130	150	150	150
		50	60	95	130	150	150	150
		60	–	–	100	100	100	100

Promag W

DN	Liner	T$_a$ [°C]	T$_m$ [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
Without thermal insulation								
25...300	PTFE	45	80	90	90	90	90	90
		50	60	90	90	90	90	90
		55	–	–	90	90	90	90
		60	–	–	90	90	90	90
50...2400	Hard rubber	50	60	80	80	80	80	80
		60	–	–	80	80	80	80
25...1200	PU	50	50	50	50	50	50	50
Extended neck for insulation (Optional specification, ID Cx (Sensor Option) = CG), with or without thermal insulation								
25...300	PTFE	45	80	90	90	90	90	90
		50	60	90	90	90	90	90
		55	–	–	90	90	90	90
		60	–	–	90	90	90	90
50...300	Hard rubber	50	60	80	80	80	80	80

DN	Liner	T_a [°C]	T_m [°C]					
			T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
		60	–	–	80	80	80	80
25…300	PU	50	50	50	50	50	50	50

With thermal insulation without Endress+Hauser specifications

The specified reference temperature T_{ref} and the maximum medium temperature $T_{m, max}$ for each temperature class must not be exceeded.
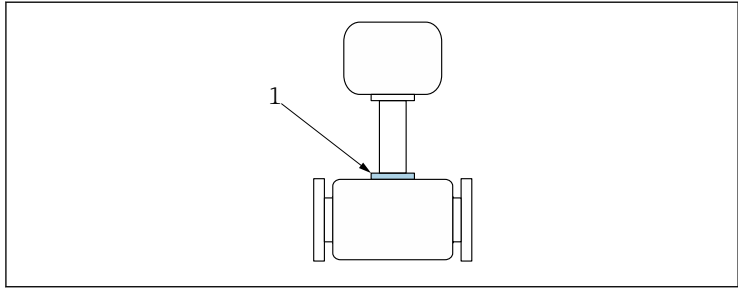
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🖾 *1   High-temperature version or extension neck for insulation: position of reference point for temperature measurement*

1   Reference point (T_{ref})

Reference temperature T_{ref}

T6 [85 ℃]	T5 [100 ℃]	T4 [135 ℃]	T3 [200 ℃]	T2 [300 ℃]	T1 [450 ℃]
56.4	71.3	72.2	72.2	72.2	72.2

Explosion hazards arising from gas and dust

Determining the temperature class and surface temperature with the temperature table
- In the case of gas: Determine the temperature class as a function of the maximum ambient temperature T_a and the maximum medium temperature T_m.
- In the case of dust: Determine the maximum surface temperature as a function of the maximum ambient temperature T_a and the maximum medium temperature T_m.

Example
- Measured maximum ambient temperature: T_{ma} = 63 ℃
- Measured maximum medium temperature: T_{mm} = 108 ℃

T_a [°C]	T6 [85 °C]	T5 [100 °C]	T4 [135 °C]	T3 [200 °C]	T2 [300 °C]	T1 [450 °C]
40	80	95	130	150	150	150
55	–	95	130	150	150	150
60	–	95	130	150	150	150

A0031267

🖸 *2   Procedure for determining the temperature class and surface temperature*

1. In the column for the maximum ambient temperature T_a select the temperature that is immediately greater than or equal to the maximum ambient temperature T_{ma} that is present.

    ↳ T_a = 60 °C.
        The row showing the maximum medium temperature is determined.

2. Select the maximum medium temperature T_m of this row, which is immediately greater than or equal to the maximum medium temperature T_{mm} that is present.

    ↳ The column with the temperature class for gas is determined: 108 °C ≤ 130 °C → T4.

3. The maximum temperature of the temperature class determined corresponds to the maximum surface temperature for dust: T4 = 135 °C.

Connection values: Signal circuits

The following tables contain specifications which are dependent on the transmitter type and its input and output assignment. Compare the following specifications with those on the nameplate of the transmitter.

Terminal assignment

Transmitter: supply voltage, input/outputs

HART

Supply voltage		Input/output 1		Input/output 2		Input/output 3	
1 (+)	2 (–)	26 (+)	27 (–)	24 (+)	25 (–)	22 (+)	23 (–)
		Device-specific terminal assignment: adhesive label in terminal cover.					

FOUNDATION Fieldbus

Supply voltage		Input/output 1		Input/output 2		Input/output 3	
1 (+)	2 (–)	26 (A)	27 (B)	24 (+)	25 (–)	22 (+)	23 (–)
		Device-specific terminal assignment: adhesive label in terminal cover.					

PROFIBUS DP

Supply voltage		Input/output 1		Input/output 2		Input/output 3	
1 (+)	2 (–)	26 (B)	27 (A)	24 (+)	25 (–)	22 (+)	23 (–)
		Device-specific terminal assignment: adhesive label in terminal cover.					

PROFIBUS PA

Supply voltage		Input/output 1		Input/output 2		Input/output 3	
1 (+)	2 (–)	26 (B)	27 (A)	24 (+)	25 (–)	22 (+)	23 (–)
		Device-specific terminal assignment: adhesive label in terminal cover.					

Modbus RS485

Supply voltage		Input/output 1		Input/output 2		Input/output 3	
1 (+)	2 (–)	26 (B)	27 (A)	24 (+)	25 (–)	22 (+)	23 (–)
		Device-specific terminal assignment: adhesive label in terminal cover.					

Modbus TCP with Ethernet-APL

Supply voltage		Input/output 1		Input/output 2		Input/output 3	
1 (+)	2 (−)	26 (+)	27 (−)	24 (+)	25 (−)	22 (+)	23 (−)
		Device-specific terminal assignment: adhesive label in terminal cover.					

PROFINET

Supply voltage		Input/output 1	Input/output 2		Input/output 3	
1 (+)	2 (−)	PROFINET (RJ45 connector)	24 (+)	25 (−)	22 (+)	23 (−)
			Device-specific terminal assignment: adhesive label in terminal cover.			

PROFINET with Ethernet-APL

Supply voltage		Input/output 1		Input/output 2		Input/output 3	
1 (+)	2 (−)	26 (+)	27 (−)	24 (+)	25 (−)	22 (+)	23 (−)
		Device-specific terminal assignment: adhesive label in terminal cover.					

EtherNet/IP

Supply voltage		Input/output 1	Input/output 2		Input/output 3	
1 (+)	2 (−)	EtherNet/IP (RJ45 connector)	24 (+)	25 (−)	22 (+)	23 (−)
			Device-specific terminal assignment: adhesive label in terminal cover.			

Remote display and operating module DKX001
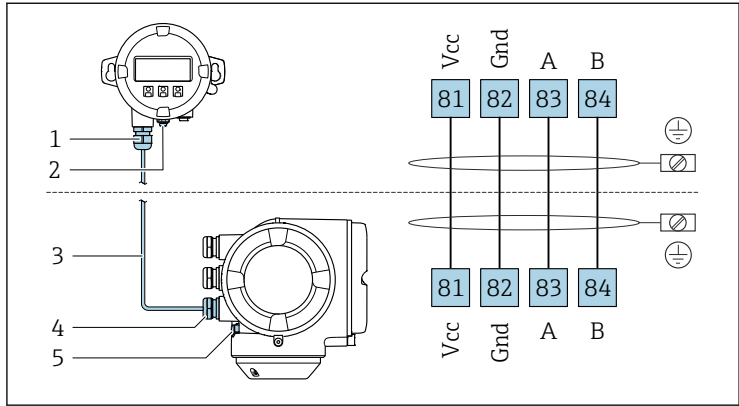
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1   Remote display and operating module DKX001
2   Protective earth (PE)
3   Connecting cable
4   Measuring device
5   Protective earth (PE)

Safety-related values

Order code for "Output; input 1"	Output type	Safety-related values "Output; input 1"	
		26 (+)	27 (−)
Option **BA**	Current output 4 to 20 mA HART	U_N = 30 V_{DC} U_M = 250 V_{AC}	
Option **GA**	PROFIBUS PA	U_N = 32 V_{DC} U_M = 250 V_{AC}	
Option **LA**	PROFIBUS DP	U_N = 32 V_{DC} U_M = 250 V_{AC}	
Option **MA**	Modbus RS485	U_N = 30 V_{DC} U_M = 250 V_{AC}	
Option **MB**	Modbus TCP with Ethernet-APL	APL port profile SLAX SPE PoDL classes 10, 11, 12 U_N = 30 V_{DC} U_M = 250 V_{AC}	
Option **SA**	FOUNDATION Fieldbus	U_N = 32 V_{DC} U_M = 250 V_{AC}	
Option **NA**	EtherNet/IP	U_N = 30 V_{DC} U_M = 250 V_{AC}	

Order code for "Output; input 1"	Output type	Safety-related values "Output; input 1"	
		26 (+)	27 (−)
Option **RA**	PROFINET	U_N = 30 V_{DC} U_M = 250 V_{AC}	
Option **RB**	PROFINET with Ethernet-APL	APL port profile SLAX SPE PoDL classes 10, 11, 12 U_N = 30 V_{DC} U_M = 250 V_{AC}	

Order code for "Output; input 2"; "Output; input 3"	Output type	Safety-related values			
		Output; input 2		Output; input 3	
		24 (+)	25 (−)	22 (+)	23 (−)
Option **B**	Current output 4 to 20 mA	U_N = 30 V_{DC} U_M = 250 V_{AC}			
Option **D**	User-configurable input/output	U_N = 30 V_{DC} U_M = 250 V_{AC}			
Option **E**	Pulse/frequency/ switch output	U_N = 30 V_{DC} U_M = 250 V_{AC}			
Option **F**	Double pulse output	U_N = 30 V_{DC} U_M = 250 V_{AC}			
Option **H**	Relay output	U_N = 30 V_{DC} I_N =100 mA_{DC}/500 mA_{AC} U_M = 250 V_{AC}			
Option **I**	Current input 4 to 20 mA	U_N = 30 V_{DC} U_M = 250 V_{AC}			
Option **J**	Status input	U_N = 30 V_{DC} U_M = 250 V_{AC}			

Intrinsically safe values

Order code for "Output; input 1"	Output type	Intrinsically safe values "Output; input 1"	
		26 (+)	27 (−)
Option CA	Current output 4-20mA HART Ex-i passive	U_i = 30 V l_i = 100 mA P_i = 1.25 W L_i = 0 μH C_i = 6 nF	
Option CC	Current output 4-20mA HART Ex-i active	**Ex ia** U_0 = 21.8 V l_0 = 90 mA P_0 = 491 mW L_0 = 4.1 mH(IIC)/ 15 mH(IIB) C_0 = 160 nF(IIC)/ 1 160 nF(IIB) U_i = 30 V l_i = 10 mA P_i = 0.3 W L_i = 5 μH C_i = 6 nF	
Option HA	PROFIBUS PA Ex i (STANDARD + FISCO)	**Ex ia** U_i = 30 V l_i = 570 mA P_i = 8.5 W L_i = 10 μH C_i = 5 nF	

Order code for "Output; input 1"	Output type	Intrinsically safe values "Output; input 1"	
		26 (+)	27 (−)
Option MC	Modbus TCP with Ethernet-APL Ex i	**2-WISE power load, APL port profile SLAA** [1] **Ex ia** $U_i = 17.5\ V$ $I_i = 380\ mA$ $P_i = 5.32\ W$ $L_i = 10\ \mu H$ $C_i = 5\ nF$ **Cable specifications according to 2-WISE:** $R_c = 15$ to $150\ \Omega/km$ $L_c = 0.4$ to $1\ mH/km$ $C_c = 45$ to $200\ nF/km$ $C_c = C_c$ line/line + 0,5 C_c line/screen, if both lines are floating, or $C_c = C_c$ line/line + C_c line/screen, if the screen is connected to one line Length of cable (not including cable stubs): ≤200 m (656.2) Length of cable stubs: ≤1 m (3.3 ft)	
Option RC	PROFINET with Ethernet-APL Ex i		
Option TA	FOUNDATION Fieldbus Ex i (STANDARD + FISCO)	**Ex ia** $U_i = 30\ V$ $I_i = 570\ mA$ $P_i = 8.5\ W$ $L_i = 10\ \mu H$ $C_i = 5\ nF$	

1) For further options see Ethernet-APL Installation Drawing HE_01622.

Order code for "Output; input 2"; "Output; input 3"	Output type	Intrinsically safe values			
		Output; input 2		Output; input 3	
		24 (+)	25 (−)	22 (+)	23 (−)
Option **C**	Current output 4 to 20 mA Ex i passive	$U_i = 30\ V$ $I_i = 100\ mA$ $P_i = 1.25\ W$ $L_i = 0$ $C_i = 0$			
Option **G**	Pulse/frequency/ switch output Ex i passive	$U_i = 30\ V$ $I_i = 100\ mA$ $P_i = 1.25\ W$ $L_i = 0$ $C_i = 0$			

Remote display DKX001

Basic specification, position 1, 2 Approval	Terminal assignment	Basic specification, position 8 Display; Operation Option O
Option [1] **NB, ND**	81, 82, 83, 84	A connecting cable with the value $L/R \le 24\ \mu H/\Omega$ and $C_{cable} \le 1\,000\ nF$ must be used for the version for connecting to the remote display DKX001 or ODKX001. The cable supplied meets this requirement.

1)   With separate order of DKX001: NE, NF, NG

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