



Member of the FM Global Group

FM Approvals
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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

KFD2-SL2-Ex1.LK. Single-Channel Solenoid Driver.

NI / I / 2 / ABCD / T4, Ta = 60°C

I / 2 / AEx nA nC / IIC / T4, Ta = 60°C

AIS / I,II,III / 1 / ABCDEFG - 16-562FM-12; Entity

[I / 0] / AEx [ja] / IIC

Entity Parameters: See Table

Gas Group	Voc, Uo (V)	Isc, Io (mA)	Po (mW)	Ca, Co (nF)	La, Lo (mH)	Lo/Ro (uH/Ohm)
Groups A/B (IIC)	28	110	770	83	3	46.25
Groups C, E, F, G (IIB)				650	12	185
Group D (IIA)				2150	23	370

Special Conditions of Use:

- In Class I, Division 2 installations, the subject equipment shall be mounted within an enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70).*
- In Class I, Zone 2 installations, the equipment shall be installed in a location providing a degree of protection from dust and water greater than or equal to that of an IP54 enclosure.*

KFD2-SL2-Ex1.LK.1045. Single-Channel Solenoid Driver.

NI / I / 2 / ABCD / T4, Ta = 60°C

I / 2 / AEx nA nC / IIC / T4, Ta = 60°C

AIS / I,II,III / 1 / ABCDEFG - 16-562FM-12; Entity

[I / 0] / AEx [ia] / IIC

Entity Parameters: See Table

Gas Group	Voc, Uo (V)	Isc, Io (mA)	Po (mW)	Ca, Co (nF)	La, Lo (mH)	Lo/Ro (uH/Ohm)
Groups A/B (IIC)	26	93	607	99	4.11	58.9
Groups C, E, F, G (IIB)				770	16.4	235.6
Group D (IIA)				2600	32.8	471.2

Special Conditions of Use:

1. In Class I, Division 2 installations, the subject equipment shall be mounted within an enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70).

2. In Class I, Zone 2 installations, the equipment shall be installed in a location providing a degree of protection from dust and water greater than or equal to that of an IP54 enclosure.

KFD2-SL2-Ex1.LK.1270. Single-Channel Solenoid Driver.

NI / I / 2 / CD / T4, Ta = 60°C

I / 2 / AEx nA nC / IIB / T4, Ta = 60°C

AIS / I,II,III / 1 / CDEFG - 16-562FM-12; Entity

[I / 0] / AEx [ia] / IIB

Entity Parameters: See Table

Gas Group	Voc, Uo (V)	Isc, Io (mA)	Po (mW)	Ca, Co (nF)	La, Lo (mH)	Lo/Ro (uH/Ohm)
Groups A/B (IIC)	-	-	-	-	-	-
Groups C, E, F, G (IIB)	22.1	248	1380	1120	2.3	103.65
Group D (IIA)				4140	4.6	207.3

Special Conditions of Use:

1. In Class I, Division 2 installations, the subject equipment shall be mounted within an enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70).

2. In Class I, Zone 2 installations, the equipment shall be installed in a location providing a degree of protection from dust and water greater than or equal to that of an IP54 enclosure



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Equipment Ratings:

Associated Intrinsically Safe Apparatus (Entity) for connection to Class I, II and III, Division 1, Groups A, B, C, D, E, F and G; Associated Intrinsically Safe Apparatus (Entity) for connection to Class I, Zone 0, [AEx ia] IIC; Nonincendive for use in Class I, Division 2, Groups A, B, C, and D; Temperature Class T4 Ta = 60°C; Class I, Zone 2, AEx nA nC IIC; Temperature Class T4 Ta = 60°C; in accordance with Control Drawing No. 16-562FM-12; Hazardous (Classified) Locations.

FM Approved for:

Pepperl and Fuchs GmbH
Mannheim, Germany



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This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3610	2010
Class 3600	2011
Class 3611	2004
Class 3810	2005
ISA 12.12.02	2003

Original Project ID: 3036153

Approval Granted: August 3, 2011

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3050675	July 24, 2014		

FM Approvals LLC

J.E. Marquedant
Manager, Electrical Systems

24 July 2014

Date