



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:

D5011S, D5011D. Repeater Power Supply

NI-AIS / I / 2 / ABCD / T4 Ta = -40 °C to 70 °C; IP20
AIS / I,II,III / 1 / ABCDEFG - ISM0158
I / 2 / AEx nA [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0158; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

Uo (Voc) = 25.9 V, Io (Isc) = 92 mA, Po = 594 mW

Class I, Zone 0, Group IIC	Co (Ca) = 100 nF	Lo (La) = 4.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 770 nF	Lo (La) = 16.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 2.63 μF	Lo (La) = 33.7 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5014S, D5014D. Repeater Power Supply

NI-AIS / I / 2 / ABCD / T4 Ta = -40 °C to 70 °C; IP20
AIS / I,II,III / 1 / ABCDEFG - ISM0159
I / 2 / AEx nA [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0159; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

Uo (Voc) = 25.9 V, Io (Isc) = 92 mA, Po = 594 mW

Class I, Zone 0, Group IIC	Co (Ca) = 100 nF	Lo (La) = 4.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 770 nF	Lo (La) = 16.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 2.63 μF	Lo (La) = 33.7 mH
Class I, II, III Division 1, Groups D, F, & G		

Input Entity Parameters: Ch1 8 - 11, Ch2 10 - 12

U_i (V_{max}) = 30 V, I_i (I_{max}) = 128 mA, C_i = 0, L_i = 0

Output Entity Parameters: Ch1 8 - 11, Ch2 10 - 12

U_o (V_{oc}) = 1.1 V, I_o (I_{sc}) = 56 mA, P_o = 16 mW

Class I, Zone 0, Group IIC	Co (Ca) = 100 μF	Lo (La) = 11.5 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 1000 μF	Lo (La) = 46.0 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 1000 μF	Lo (La) = 92.1 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
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D5020S, D5020D. Powered Isolating Driver

NI-AIS / I / 2 / ABCD /T4 Ta = -40 °C to 70 °C; IP20

AIS / I,II,III / 1 / ABCDEFG - ISM0160

I / 2 / AEx nA [ia] / IIC /T4 Ta = -40 °C to 70 °C - ISM0160; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

U_o (V_{oc}) = 25.9 V, I_o (I_{sc}) = 93 mA, P_o = 595 mW

Class I, Zone 0, Group IIC	Co (Ca) = 100 nF	Lo (La) = 4.1 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 770 nF	Lo (La) = 16.7 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 2.63 μF	Lo (La) = 33.5 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5030S, D5030D, D5032S, D5032D. Switch/Proximity Detector Repeater

NI-AIS / I / 2 / ABCD /T4 Ta = -40 °C to 70 °C; IP20

AIS / I,II,III / 1 / ABCDEFG - ISM0161

I / 2 / AEx nA nC [ia] / IIC /T4 Ta = -40 °C to 70 °C - ISM0161; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

U_o (V_{oc}) = 10.5 V, I_o (I_{sc}) = 22 mA, P_o = 56 mW

Class I, Zone 0, Group IIC	Co (Ca) = 2.41 μF	Lo (La) = 78.3 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 16.8 μF	Lo (La) = 313.4 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 75.0 μF	Lo (La) = 626.9 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5031S, D5031D. Switch/Proximity Detector Repeater

NI-AIS / I / 2 / ABCD /T4 Ta = -40 °C to 70 °C; IP20
 AIS / I,II,III / 1 / ABCDEFG - ISM0161
 I / 2 / AEx nA [ia] / IIC /T4 Ta = -40 °C to 70 °C - ISM0161; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

Uo (Voc) = 10.5 V, Io (Isc) = 22 mA, Po = 56 mW

Class I, Zone 0, Group IIC	Co (Ca) = 2.41 µF	Lo (La) = 78.3 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 16.8 µF	Lo (La) = 313.4 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 75.0 µF	Lo (La) = 626.9 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5034S, D5034D. Switch/Proximity Interface

NI-AIS / I / 2 / ABCD /T4 Ta = -40 °C to 70 °C; IP20
 AIS / I,II,III / 1 / ABCDEFG - ISM0162
 I / 2 / AEx nA [ia] / IIC /T4 Ta = -40 °C to 70 °C - ISM0162; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

Uo (Voc) = 10.5 V, Io (Isc) = 15 mA, Po = 39 mW

Class I, Zone 0, Group IIC	Co (Ca) = 2.41 µF	Lo (La) = 163.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 16.8 µF	Lo (La) = 652.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 75.0 µF	Lo (La) = 1305.6 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5048S, D5049S. Digital Output Driver

NI-AIS / I / 2 / ABCD /T4 Ta = -40 °C to 70 °C; IP20
 AIS / I,II,III / 1 / ABCDEFG - ISM0163
 I / 2 / AEx nA [ia] / IIC /T4 Ta = -40 °C to 70 °C - ISM0163; IP20

Output Entity Parameters: Terminals 7 - 10

Uo (Voc) = 24.8 V, Io (Isc) = 147 mA, Po = 907 mW

Class I, Zone 0, Group IIC	Co (Ca) = 113 nF	Lo (La) = 1.65 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 860 nF	Lo (La) = 6.63 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 3.05 µF	Lo (La) = 13.27 mH
Class I, II, III Division 1, Groups D, F, & G		

Output Entity Parameters: Terminals 8 - 10

Uo (Voc) = 24.8 V, Io (Isc) = 108 mA, Po = 667 mW

Class I, Zone 0, Group IIC	Co (Ca) = 113 nF	Lo (La) = 3.07 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 860 nF	Lo (La) = 12.30 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 3.05 μ F	Lo (La) = 24.60 mH
Class I, II, III Division 1, Groups D, F, & G		

Output Entity Parameters: Terminals 9 - 10

Uo (Voc) = 24.8 V, Io (Isc) = 93 mA, Po = 571 mW

Class I, Zone 0, Group IIC	Co (Ca) = 113 nF	Lo (La) = 4.19 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 860 nF	Lo (La) = 16.79 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 3.05 μ F	Lo (La) = 33.58 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5072S, D5072D. Temperature Converter

NI-AIS / I / 2 / ABCD / T4 Ta = -40 °C to 70 °C; IP20

AIS / I,II,III / 1 / ABCDEFG - ISM0166

I / 2 / AEx nA [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0166; IP20

Input Entity Parameters:

Ui (Vmax) = 12.8 V, Ii (Imax) = 28.7 mA, Ci = 0, Li = 0

D5072S Output Entity Parameters: Terminals 7 - 8 - 9 - 10

Uo (Voc) = 7.2 V, Io (Isc) = 23 mA, Po = 40 mW

Class I, Zone 0, Group IIC	Co (Ca) = 13.5 μ F	Lo (La) = 67.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 240 μ F	Lo (La) = 268.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 1000 μ F	Lo (La) = 537.7 mH
Class I, II, III Division 1, Groups D, F, & G		

D5072D Output Entity Parameters: Terminals Ch1 7 - 8 - 9, Ch2 10 - 11 - 12

Uo (Voc) = 7.2 V, Io (Isc) = 16 mA, Po = 27 mW

Class I, Zone 0, Group IIC	Co (Ca) = 13.5 μ F	Lo (La) = 138 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 240 μ F	Lo (La) = 555 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 1000 μ F	Lo (La) = 1111 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5073S. Temperature Converter Trip amplifiers

NI-AIS / I / 2 / ABCD / T4 Ta = -40 °C to 70 °C; IP20
 AIS / I,II,III / 1 / ABCDEFG - ISM0169
 I / 2 / AEx nA nC [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0169; IP20

Input Entity Parameters:

Ui (Vmax) = 12.8 V, Ii (Imax) = 28.7 mA, Ci = 0, Li = 0

Output Entity Parameters: Terminals 13 - 14 - 15 - 16

Uo (Voc) = 7.2 V, Io (Isc) = 23 mA, Po = 40 mW

Class I, Zone 0, Group IIC	Co (Ca) = 13.5 µF	Lo (La) = 67.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 240 µF	Lo (La) = 268.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 1000 µF	Lo (La) = 537.7 mH
Class I, II, III Division 1, Groups D, F, & G		

D5090S, D5091S. Relay Output

NI / I / 2 / ABCD / T4 - ISM0164 Ta = -40 °C to 70 °C; IP20
 I / 2 / AEx nA nC / IIC / T4 - ISM0164; Ta = -40 °C to 70 °C; IP20

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5290S, D5290S-078, D5291S. Relay Output

NI / I / 2 / ABCD / T4 - ISM0164 Ta = -40 °C to 60 °C; IP20
 I / 2 / AEx nA nC / IIC / T4 - ISM0164; Ta = -40 °C to 60 °C; IP20

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5293S, D5294S. Relay Output with Diagnostic

NI / I / 2 / ABCD / T4 - ISM0165 Ta = -40 °C to 60 °C; IP20
 I / 2 / AEx nA nC / IIC / T4 - ISM0165; Ta = -40 °C to 60 °C; IP20

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5231E. Switch/Proximity Repeater O.C. Out

NI-AIS / I / 2 / ABCD / T4 Ta = -40 °C to 70 °C; IP20
 AIS / I,II,III / 1 / ABCDEFG - ISM0167
 I / 2 / AEx nA [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0167; IP20

Output Entity Parameters: Terminals 21-13, 21-14, 22-15, 22-16, 23-17, 23-18, 24-19, 24-20U_o (Voc) = 11.2 V, I_o (Isc) = 12 mA, P_o = 34 mW

Class I, Zone 0, Group IIC

Co (Ca) = 1.84 μF

Lo (La) = 246 mH

Class I, Division 1, Groups A & B

Class I, Zone 0, Group IIB

Co (Ca) = 12.6 μF

Lo (La) = 987 mH

Class I & II, Division 1, Groups C & E

Class I, Zone 0, Group IIA

Co (Ca) = 54 μF

Lo (La) = 1975 mH

Class I, II, III Division 1, Groups D, F, & G

Special Conditions of Use:

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Equipment Ratings:

Nonincendive for use in Class I, Division 2, Groups A, B, C, D and Class I, Zone 2, Group IIC hazardous (classified) locations many with Intrinsically Safe outputs for Class I, II, III Division 1, Groups A, B, C, D, E, F, and G and Class I, Zone 0, Group IIC hazardous (classified) locations

FM Approved for:

GM International SRL
20852 Villasanta Monza e Brianza, Italy



Member of the FM Global Group

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

FM Class 3600	2011
FM Class 3610	2010
FM Class 3810	2005
FM Class 3611	2004
ANSI/ISA-60079-11 (12.02.01)	2011
ANSI/ISA-60079-15 (12.12.02)	2009
ANSI/ISA-60079-0 (12.00.01)	2009

Original Project ID: 0003046304

Approval Granted: April 9, 2013

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
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FM Approvals LLC

J.E. Marquedant
Group Manager, Electrical

9 April 2013

Date



Member of the FM Global Group

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I / 2 / Ex nA [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0158; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

Uo (Voc) = 25.9 V, Io (Isc) = 92 mA, Po = 594 mW

Class I, Zone 0, Group IIC	Co (Ca) = 100 nF	Lo (La) = 4.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 770 nF	Lo (La) = 16.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 2.63 μF	Lo (La) = 33.7 mH
Class I, II, III Division 1, Groups D, F, & G		

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I / 2 / Ex nA [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0159; IP20

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Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 770 nF	Lo (La) = 16.8 mH
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Class I, II, III Division 1, Groups D, F, & G		

Input Entity Parameters: Ch1 8 - 11, Ch2 10 - 12

U_i (V_{max}) = 30 V, I_i (I_{max}) = 128 mA, C_i = 0, L_i = 0

Output Entity Parameters: Ch1 8 - 11, Ch2 10 - 12

U_o (V_{oc}) = 1.1 V, I_o (I_{sc}) = 56 mA, P_o = 16 mW

Class I, Zone 0, Group IIC	Co (Ca) = 100 μF	Lo (La) = 11.5 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 1000 μF	Lo (La) = 46.0 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 1000 μF	Lo (La) = 92.1 mH
Class I, II, III Division 1, Groups D, F, & G		

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U_o (V_{oc}) = 25.9 V, I_o (I_{sc}) = 93 mA, P_o = 595 mW

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NI-AIS / I / 2 / ABCD /T4 Ta = -40 °C to 70 °C; IP20

AIS / I,II,III / 1 / ABCDEFG - ISM0161

I / 2 / Ex nA nC [ia] / IIC /T4 Ta = -40 °C to 70 °C - ISM0161; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

U_o (V_{oc}) = 10.5 V, I_o (I_{sc}) = 22 mA, P_o = 56 mW

Class I, Zone 0, Group IIC	Co (Ca) = 2.41 μF	Lo (La) = 78.3 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 16.8 μF	Lo (La) = 313.4 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 75.0 μF	Lo (La) = 626.9 mH
Class I, II, III Division 1, Groups D, F, & G		

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Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 16.8 μF	Lo (La) = 313.4 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 75.0 μF	Lo (La) = 626.9 mH
Class I, II, III Division 1, Groups D, F, & G		

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D5034S, D5034D. Switch/Proximity Interface

NI-AIS / I / 2 / ABCD /T4 Ta = -40 °C to 70 °C; IP20
 AIS / I,II,III / 1 / ABCDEFG - ISM0162
 I / 2 / Ex nA [ia] / IIC /T4 Ta = -40 °C to 70 °C - ISM0162; IP20

Output Entity Parameters: Ch1 7 – 8, Ch2 9 - 10

Uo (Voc) = 10.5 V, Io (Isc) = 15 mA, Po = 39 mW

Class I, Zone 0, Group IIC	Co (Ca) = 2.41 μF	Lo (La) = 163.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 16.8 μF	Lo (La) = 652.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 75.0 μF	Lo (La) = 1305.6 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5048S, D5049S. Digital Output Driver

NI-AIS / I / 2 / ABCD /T4 Ta = -40 °C to 70 °C; IP20
 AIS / I,II,III / 1 / ABCDEFG - ISM0163
 I / 2 / Ex nA [ia] / IIC /T4 Ta = -40 °C to 70 °C - ISM0163; IP20

Output Entity Parameters: Terminals 7 - 10

Uo (Voc) = 24.8 V, Io (Isc) = 147 mA, Po = 907 mW

Class I, Zone 0, Group IIC	Co (Ca) = 113 nF	Lo (La) = 1.65 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 860 nF	Lo (La) = 6.63 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 3.05 μF	Lo (La) = 13.27 mH
Class I, II, III Division 1, Groups D, F, & G		

Output Entity Parameters: Terminals 8 - 10

Uo (Voc) = 24.8 V, Io (Isc) = 108 mA, Po = 667 mW

Class I, Zone 0, Group IIC	Co (Ca) = 113 nF	Lo (La) = 3.07 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 860 nF	Lo (La) = 12.30 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 3.05 μ F	Lo (La) = 24.60 mH
Class I, II, III Division 1, Groups D, F, & G		

Output Entity Parameters: Terminals 9 - 10

Uo (Voc) = 24.8 V, Io (Isc) = 93 mA, Po = 571 mW

Class I, Zone 0, Group IIC	Co (Ca) = 113 nF	Lo (La) = 4.19 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 860 nF	Lo (La) = 16.79 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 3.05 μ F	Lo (La) = 33.58 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5072S, D5072D. Temperature Converter

NI-AIS / I / 2 / ABCD / T4 Ta = -40 °C to 70 °C; IP20

AIS / I,II,III / 1 / ABCDEFG - ISM0166

I / 2 / Ex nA [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0166; IP20

Input Entity Parameters:

Ui (Vmax) = 12.8 V, Ii (Imax) = 28.7 mA, Ci = 0, Li = 0

D5072S Output Entity Parameters: Terminals 7 - 8 - 9 - 10

Uo (Voc) = 7.2 V, Io (Isc) = 23 mA, Po = 40 mW

Class I, Zone 0, Group IIC	Co (Ca) = 13.5 μ F	Lo (La) = 67.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 240 μ F	Lo (La) = 268.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 1000 μ F	Lo (La) = 537.7 mH
Class I, II, III Division 1, Groups D, F, & G		

D5072D Output Entity Parameters: Terminals Ch1 7 - 8 - 9, Ch2 10 - 11 - 12

Uo (Voc) = 7.2 V, Io (Isc) = 16 mA, Po = 27 mW

Class I, Zone 0, Group IIC	Co (Ca) = 13.5 μ F	Lo (La) = 138 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 240 μ F	Lo (La) = 555 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 1000 μ F	Lo (La) = 1111 mH
Class I, II, III Division 1, Groups D, F, & G		

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5073S. Temperature Converter Trip amplifiers

NI-AIS / I / 2 / ABCD / T4 Ta = -40 °C to 70 °C; IP20
 AIS / I,II,III / 1 / ABCDEFG - ISM0169
 I / 2 / Ex nA nC [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0169; IP20

Input Entity Parameters:

Ui (Vmax) = 12.8 V, Ii (Imax) = 28.7 mA, Ci = 0, Li = 0

Output Entity Parameters: Terminals 13 - 14 - 15 - 16

Uo (Voc) = 7.2 V, Io (Isc) = 23 mA, Po = 40 mW

Class I, Zone 0, Group IIC	Co (Ca) = 13.5 µF	Lo (La) = 67.2 mH
Class I, Division 1, Groups A & B		
Class I, Zone 0, Group IIB	Co (Ca) = 240 µF	Lo (La) = 268.8 mH
Class I & II, Division 1, Groups C & E		
Class I, Zone 0, Group IIA	Co (Ca) = 1000 µF	Lo (La) = 537.7 mH
Class I, II, III Division 1, Groups D, F, & G		

D5090S, D5091S. Relay Output

NI / I / 2 / ABCD / T4 - ISM0164 Ta = -40 °C to 70 °C; IP20
 I / 2 / Ex nA nC / IIC / T4 - ISM0164; Ta = -40 °C to 70 °C; IP20

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5290S, D5290S-078, D5291S. Relay Output

NI / I / 2 / ABCD / T4 - ISM0164 Ta = -40 °C to 60 °C; IP20
 I / 2 / Ex nA nC / IIC / T4 - ISM0164; Ta = -40 °C to 60 °C; IP20

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5293S, D5294S. Relay Output with Diagnostic

NI / I / 2 / ABCD / T4 - ISM0165 Ta = -40 °C to 60 °C; IP20
 I / 2 / Ex nA nC / IIC / T4 - ISM0165; Ta = -40 °C to 60 °C; IP20

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

D5231E. Switch/Proximity Repeater O.C. Out

NI-AIS / I / 2 / ABCD / T4 Ta = -40 °C to 70 °C; IP20

AIS / I,II,III / 1 / ABCDEFG - ISM0167

I / 2 / Ex nA [ia] / IIC / T4 Ta = -40 °C to 70 °C - ISM0167; IP20

Output Entity Parameters: Terminals 21-13, 21-14, 22-15, 22-16, 23-17, 23-18, 24-19, 24-20

Uo (Voc) = 11.2 V, Io (Isc) = 12 mA, Po = 34 mW

Class I, Zone 0, Group IIC

Co (Ca) = 1.84 µF

Lo (La) = 246 mH

Class I, Division 1, Groups A & B

Class I, Zone 0, Group IIB

Co (Ca) = 12.6 µF

Lo (La) = 987 mH

Class I & II, Division 1, Groups C & E

Class I, Zone 0, Group IIA

Co (Ca) = 54 µF

Lo (La) = 1975 mH

Class I, II, III Division 1, Groups D, F, & G

Special Conditions of Use:

1. The modules shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application, including a tool removable cover.
2. When installed in Division 2 Hazardous (classified) locations, a warning label must be prominently affixed near the unit(s) which warns that the cables must not be removed or inserted unless the area is known to be non-hazardous

Equipment Ratings:

Nonincendive for use in Class I, Division 2, Groups A, B, C, D and Class I, Zone 2, Group IIC hazardous (classified) locations many with Intrinsically Safe outputs for Class I, II, III Division 1, Groups A, B, C, D, E, F, and G and Class I, Zone 0, Group IIC hazardous (classified) locations

FM Approved for:

GM International SRL
20852 Villasanta Monza e Brianza, Italy



Member of the FM Global Group

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

C22.2 No. 142-M1987	2009
C22.2 No. 157-92	2006
C22.2 No. 213-M1987	2008
C22.2 No. 60079-0 (Ed. 5.0)	2011
C22.2 No. 60079-11 (Ed. 5.0)	2011
C22.2 No. 60079-15 (Ed. 3.0)	2012

Original Project ID: 0003046304

Approval Granted: April 9, 2013

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
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FM Approvals LLC



 G. E. Marquedant
 Group Manager, Electrical

9 April 2013

 Date