



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:

9116Ba Universal Converter

AIS/I,II,III/1/ABCDEFG - 9116QF01; Entity
I/0/[AEx ia] IIC - 9116QF01; Entity
NI/I/2/ABCD/T4; -20 °C ≤ Ta ≤ +60 °C
I/2/AEx nA nC [ia] IIC T4, -20 °C ≤ Ta ≤ +60 °C
a = version ( A= 1; B = 2 )

I. Entity Parameters for either Model 9116B1 or Model 9116B2 connected to a Simple Apparatus or an Intrinsically Safe Apparatus:

Model 9116B1

Terminals 51-52, 51-53

Input: Ui (Vmax) = 30 V, Ii (Imax) = 120 mA, Pi = 900 mW, Ci = 3 nF, Li = 1 µH

Terminals 51-54, 52-54

Output: Uo (Voc) = 28 V, Io (Isc) = 93 mA, Po = 650 mW

Table with 4 columns: Category, Co (Ca), Lo (La), Lo/Ro. Rows include Class I, Zone 0, Group IIC; Class I, Division 1, Groups A & B; Class I, Zone 0, Group IIB; Class I & II, Division 1, Groups C & E; Class I, Zone 0, Group IIA; Class I, II, III Division 1, Groups D, F, & G.

Terminals 51-53

Output: Uo (Voc) = 28 V, Io (Isc) = 1.1 mA, Po = 8 mW

Table with 4 columns: Category, Co (Ca), Lo (La), Lo/Ro. Rows include Class I, Zone 0, Group IIC; Class I, Division 1, Groups A & B; Class I, Zone 0, Group IIB; Class I & II, Division 1, Groups C & E.



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Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 2.1  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 35 mH/ $\Omega$

**Terminals 51-52**

**Output:** Uo (Voc) = 8.3 V, Io (Isc) = 0.2 mA, Po = 4 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 7  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 100 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 73  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 400 mH/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 1000  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 800 mH/ $\Omega$

**Terminals 41, 42, 43, 44**

**Output:** Uo (Voc) = 8.3 V, Io (Isc) = 13.1 mA, Po = 27.3 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 7  $\mu$ F

Lo (La) = 207 mH

Lo/Ro = 1 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 73  $\mu$ F

Lo (La) = 828 mH

Lo/Ro = 5 mH/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 1000  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 10 mH/ $\Omega$

**Model 9116B2**

**Terminals 51-52, 51-53**

**Input:** Ui (Vmax) = 30 V, Ii (Imax) = 120 mA, Pi = 900 mW, Ci = 3 nF, Li = 1  $\mu$ H

**Terminals 51-54, 52-54**

**Output:** Uo (Voc) = 21.4 V, Io (Isc) = 93 mA, Po = 650 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 0.16  $\mu$ F

Lo (La) = 4 mH

Lo/Ro = 54  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 1.13  $\mu$ F

Lo (La) = 16 mH

Lo/Ro = 218  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 4.15  $\mu$ F

Lo (La) = 32 mH

Lo/Ro = 436  $\mu$ H/ $\Omega$

**Terminals 51-53**

**Output:** Uo (Voc) = 21.4 V, Io (Isc) = 1.1 mA, Po = 8 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 0.16  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 4 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 1.13  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 17 mH/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 4.15  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 35 mH/ $\Omega$

**Terminals 51-52**

**Output:** Uo (Voc) = 8.3 V, Io (Isc) = 0.2 mA, Po = 4 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 7  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 100 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 73  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 400 mH/ $\Omega$



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Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 1000  $\mu$ F    Lo (La) = 1 H    Lo/Ro = 800 mH/ $\Omega$

**Terminals 41, 42, 43, 44**

**Output:** Uo (Voc) = 8.3 V, Io (Isc) = 13.1 mA, Po = 27.3 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 7  $\mu$ F    Lo (La) = 207 mH    Lo/Ro = 1 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 73  $\mu$ F    Lo (La) = 828 mH    Lo/Ro = 5 mH/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 1000  $\mu$ F    Lo (La) = 1 H    Lo/Ro = 10 mH/ $\Omega$

**II. Entity Parameters for two Models 9116B1 or Models 9116B2 connected to a Loop-powered transmitter:**

**Model 9116B1 or Model 9116B2**

**Terminals 52-54**

**Input:** Ui (Vmax) = 30 V, Ii (Imax) = 120 mA, Pi = 900 mW, Ci = 3 nF, Li = 2  $\mu$ H

**Model 9116B1**

**Terminals 52-54**

**Output:** Uo (Voc) = 28 V, Io (Isc) = 93 mA, Po = 650 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 80 nF    Lo (La) = 4 mH    Lo/Ro = 54  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 640 nF    Lo (La) = 16 mH    Lo/Ro = 218  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 2.1  $\mu$ F    Lo (La) = 32 mH    Lo/Ro = 436  $\mu$ H/ $\Omega$

**Model 9116B2**

**Terminals 52-54**

**Output:** Uo (Voc) = 21.4 V, Io (Isc) = 93 mA, Po = 650 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 0.16  $\mu$ F    Lo (La) = 4 mH    Lo/Ro = 54  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 1.13  $\mu$ F    Lo (La) = 16 mH    Lo/Ro = 218  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 4.15  $\mu$ F    Lo (La) = 32 mH    Lo/Ro = 436  $\mu$ H/ $\Omega$



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### III. Entity Parameters for two Models 9116B1 or Models 9116B2 connected in series to a current source

#### Model 9116B1 or Model 9116B2

##### Terminals 51,52

**Input:**  $U_i$  ( $V_{max}$ ) = 30 V,  $I_i$  ( $I_{max}$ ) = 120 mA,  $P_i$  = 900 mW,  $C_i$  = 3 nF,  $L_i$  = 2  $\mu$ H

**Output:**  $U_o$  ( $V_{oc}$ ) = 16.6 V,  $I_o$  ( $I_{sc}$ ) = 0.2 mA,  $P_o$  = 0.8 mW

Class I, Zone 0, Group IIC	$C_o$ ( $C_a$ ) = 0.4 $\mu$ F	$L_o$ ( $L_a$ ) = 100 mH	$L_o/R_o$ = 25 mH/ $\Omega$
Class I, Division 1, Groups A & B			
Class I, Zone 0, Group IIB	$C_o$ ( $C_a$ ) = 2.3 $\mu$ F	$L_o$ ( $L_a$ ) = 100 mH	$L_o/R_o$ = 100 mH/ $\Omega$
Class I & II, Division 1, Groups C & E			
Class I, Zone 0, Group IIA	$C_o$ ( $C_a$ ) = 9.5 $\mu$ F	$L_o$ ( $L_a$ ) = 100 mH	$L_o/R_o$ = 200 mH/ $\Omega$
Class I, II, III Division 1, Groups D, F, & G			

### IV. Unclassified or Division 2 / Zone 2 hazardous (classified) location parameters for Model 9116B1 or Model 9116B2

#### Status Relay, Terminal (33, 34)

##### Unclassified location installation:

Voltage max: 125  $V_{AC}$  / 110  $V_{DC}$

Power max: 62.5 VA / 32 W

Current max: 0.5  $A_{AC}$  / 0.3  $A_{DC}$

##### Zone 2 installation:

Voltage max: 32  $V_{AC}$  / 32  $V_{DC}$

Power max: 16 VA / 32 W

Current max: 0.5  $A_{AC}$  / 1  $A_{DC}$

#### Relay Output. Terminal (13,14)

##### Unclassified location installation:

Voltage max: 250  $V_{AC}$  / 30  $V_{DC}$

Power max: 500 VA / 60 W

Current max: 2  $A_{AC}$  / 2  $A_{DC}$

##### Zone 2 installation:

Voltage max: 32  $V_{AC}$  / 30  $V_{DC}$

Power max: 64 VA / 60 W

Current max: 2  $A_{AC}$  / 2  $A_{DC}$

#### Special Conditions of Use:

- 1) In Class I, Division 2 installations, the subject equipment shall be mounted within a tool-secured 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 subject equipment shall be mounted within a tool secured enclosure which is capable of accepting one or more of the Class I, Zone 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70).
- 3) In Class I, Zone 2 installations, the installer shall ensure protection of supply terminals against transient voltages exceeding 140% of the rated supply voltage.
- 4) Install in environments rated Pollution Degree 2 or better; overvoltage category I or II.



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## Equipment Ratings:

Associated apparatus with intrinsically safe (entity) connections to Class I, II and III, Division 1, Groups A, B, C, D, E, F and G Hazardous (Classified) Locations per control drawing 9116QF01.

Associated apparatus with intrinsically safe (entity) connections to Class Zone 0, Group IIC Hazardous (Classified) Locations per control drawing 9116QF01.

Nonincendive / suitable for Class I, Division 2, Groups A, B, C and D Hazardous (Classified) Locations, T4 at T ambient of -20°C to 60°C.

Non-sparking apparatus for Class I, Zone2, Group IIC Hazardous (Classified) Locations, T ambient of -20°C to 60°C.

## FM Approved for:

PR electronics A/S  
DK-8410 Ronde, Denmark



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

Class 3600	1998
Class 3610	2007
Class 3611	2004
Class 3810	2005
ANSI/ISA-12.00.01	1999
ANSI/ISA-12.02.01	2002
ANSI/ISA 61010-1	2004

Original Project ID: 3038267

Approval Granted: April 23, 2010

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
120607	June 19, 2012		

FM Approvals LLC

  
 \_\_\_\_\_  
 J. E. Marquedant  
 Group Manager, Electrical

19 June 2012  
 \_\_\_\_\_  
 Date



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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT
PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

9116Ba Universal Converter

AIS/I,II,III/1/ABCDEFG - 9116QF01; Entity
I/O/[Ex ia] IIC - 9116QF01; Entity
NI/I/2/ABCD/T4; -20 °C ≤ Ta ≤ +60 °C
I/2/Ex nA nC [ia] IIC T4, -20 °C ≤ Ta ≤ +60 °C

a = version ( A= 1; B = 2 )

I. Entity Parameters for either Model 9116B1 or Model 9116B2 connected to a Simple Apparatus or an Intrinsically Safe Apparatus:

Model 9116B1

Terminals 51-52, 51-53

Input: Ui (Vmax) = 30 V, Ii (Imax) = 120 mA, Pi = 900 mW, Ci = 3 nF, Li = 1 µH

Terminals 51-54, 52-54

Output: Uo (Voc) = 28 V, Io (Isc) = 93 mA, Po = 650 mW

Table with 4 columns: Class/Zone/Group, Co (Ca), Lo (La), Lo/Ro. Rows include Class I, Zone 0, Group IIC; Class I, Division 1, Groups A & B; Class I, Zone 0, Group IIB; Class I & II, Division 1, Groups C & E; Class I, Zone 0, Group IIA; Class I, II, III Division 1, Groups D, F, & G.

Terminals 51-53

Output: Uo (Voc) = 28 V, Io (Isc) = 1.1 mA, Po = 8 mW

Table with 4 columns: Class/Zone/Group, Co (Ca), Lo (La), Lo/Ro. Rows include Class I, Zone 0, Group IIC; Class I, Division 1, Groups A & B; Class I, Zone 0, Group IIB; Class I & II, Division 1, Groups C & E.



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Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 2.1  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 35 mH/ $\Omega$

#### Terminals 51-52

**Output:** Uo (Voc) = 8.3 V, Io (Isc) = 0.2 mA, Po = 4 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 7  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 100 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 73  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 400 mH/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 1000  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 800 mH/ $\Omega$

#### Terminals 41, 42, 43, 44

**Output:** Uo (Voc) = 8.3 V, Io (Isc) = 13.1 mA, Po = 27.3 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 7  $\mu$ F

Lo (La) = 207 mH

Lo/Ro = 1 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 73  $\mu$ F

Lo (La) = 828 mH

Lo/Ro = 5 mH/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 1000  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 10 mH/ $\Omega$

#### Model 9116B2

##### Terminals 51-52, 51-53

**Input:** Ui (Vmax) = 30 V, Ii (Imax) = 120 mA, Pi = 900 mW, Ci = 3 nF, Li = 1  $\mu$ H

##### Terminals 51-54, 52-54

**Output:** Uo (Voc) = 21.4 V, Io (Isc) = 93 mA, Po = 650 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 0.16  $\mu$ F

Lo (La) = 4 mH

Lo/Ro = 54  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 1.13  $\mu$ F

Lo (La) = 16 mH

Lo/Ro = 218  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 4.15  $\mu$ F

Lo (La) = 32 mH

Lo/Ro = 436  $\mu$ H/ $\Omega$

##### Terminals 51-53

**Output:** Uo (Voc) = 21.4 V, Io (Isc) = 1.1 mA, Po = 8 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 0.16  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 4 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 1.13  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 17 mH/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 4.15  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 35 mH/ $\Omega$

##### Terminals 51-52

**Output:** Uo (Voc) = 8.3 V, Io (Isc) = 0.2 mA, Po = 4 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 7  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 100 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 73  $\mu$ F

Lo (La) = 1 H

Lo/Ro = 400 mH/ $\Omega$





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Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 1000  $\mu$ F    Lo (La) = 1 H    Lo/Ro = 800 mH/ $\Omega$

**Terminals 41, 42, 43, 44**

**Output:** Uo (Voc) = 8.3 V, Io (Isc) = 13.1 mA, Po = 27.3 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 7  $\mu$ F    Lo (La) = 207 mH    Lo/Ro = 1 mH/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 73  $\mu$ F    Lo (La) = 828 mH    Lo/Ro = 5 mH/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 1000  $\mu$ F    Lo (La) = 1 H    Lo/Ro = 10 mH/ $\Omega$

**II. Entity Parameters for two Models 9116B1 or Models 9116B2 connected to a Loop-powered transmitter:**

**Model 9116B1 or Model 9116B2**

**Terminals 52-54**

**Input:** Ui (Vmax) = 30 V, Ii (Imax) = 120 mA, Pi = 900 mW, Ci = 3 nF, Li = 2  $\mu$ H

**Model 9116B1**

**Terminals 52-54**

**Output:** Uo (Voc) = 28 V, Io (Isc) = 93 mA, Po = 650 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 80 nF    Lo (La) = 4 mH    Lo/Ro = 54  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 640 nF    Lo (La) = 16 mH    Lo/Ro = 218  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 2.1  $\mu$ F    Lo (La) = 32 mH    Lo/Ro = 436  $\mu$ H/ $\Omega$

**Model 9116B2**

**Terminals 52-54**

**Output:** Uo (Voc) = 21.4 V, Io (Isc) = 93 mA, Po = 650 mW

Class I, Zone 0, Group IIC  
Class I, Division 1, Groups A & B

Co (Ca) = 0.16  $\mu$ F    Lo (La) = 4 mH    Lo/Ro = 54  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIB  
Class I & II, Division 1, Groups C & E

Co (Ca) = 1.13  $\mu$ F    Lo (La) = 16 mH    Lo/Ro = 218  $\mu$ H/ $\Omega$

Class I, Zone 0, Group IIA  
Class I, II, III Division 1, Groups D, F, & G

Co (Ca) = 4.15  $\mu$ F    Lo (La) = 32 mH    Lo/Ro = 436  $\mu$ H/ $\Omega$



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### III. Entity Parameters for two Models 9116B1 or Models 9116B2 connected in series to a current source

#### Model 9116B1 or Model 9116B2

##### Terminals 51,52

**Input:**  $U_i$  ( $V_{max}$ ) = 30 V,  $I_i$  ( $I_{max}$ ) = 120 mA,  $P_i$  = 900 mW,  $C_i$  = 3 nF,  $L_i$  = 2  $\mu$ H

**Output:**  $U_o$  ( $V_{oc}$ ) = 16.6 V,  $I_o$  ( $I_{sc}$ ) = 0.2 mA,  $P_o$  = 0.8 mW

Class I, Zone 0, Group IIC	$C_o$ ( $C_a$ ) = 0.4 $\mu$ F	$L_o$ ( $L_a$ ) = 100 mH	$L_o/R_o$ = 25 mH/ $\Omega$
Class I, Division 1, Groups A & B			
Class I, Zone 0, Group IIB	$C_o$ ( $C_a$ ) = 2.3 $\mu$ F	$L_o$ ( $L_a$ ) = 100 mH	$L_o/R_o$ = 100 mH/ $\Omega$
Class I & II, Division 1, Groups C & E			
Class I, Zone 0, Group IIA	$C_o$ ( $C_a$ ) = 9.5 $\mu$ F	$L_o$ ( $L_a$ ) = 100 mH	$L_o/R_o$ = 200 mH/ $\Omega$
Class I, II, III Division 1, Groups D, F, & G			

### IV. Unclassified or Division 2 / Zone 2 hazardous (classified) location parameters for Model 9116B1 or Model 9116B2

#### Status Relay, Terminal (33, 34)

##### Unclassified location installation:

Voltage max: 125  $V_{AC}$  / 110  $V_{DC}$

Power max: 62.5 VA / 32 W

Current max: 0.5  $A_{AC}$  / 0.3  $A_{DC}$

##### Zone 2 installation:

Voltage max: 32  $V_{AC}$  / 32  $V_{DC}$

Power max: 16 VA / 32 W

Current max: 0.5  $A_{AC}$  / 1  $A_{DC}$

#### Relay Output. Terminal (13,14)

##### Unclassified location installation:

Voltage max: 250  $V_{AC}$  / 30  $V_{DC}$

Power max: 500 VA / 60 W

Current max: 2  $A_{AC}$  / 2  $A_{DC}$

##### Zone 2 installation:

Voltage max: 32  $V_{AC}$  / 30  $V_{DC}$

Power max: 64 VA / 60 W

Current max: 2  $A_{AC}$  / 2  $A_{DC}$

#### Special Conditions of Use:

- 1) In Class I, Division 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the Canadian Electrical Code (C22.1).
- 2) In Class I, Zone 2 installations, the subject equipment shall be mounted within a tool secured enclosure which is capable of accepting one or more of the Class I, Zone 2 wiring methods specified in the Canadian Electrical Code (C22.1).
- 3) In Class I, Zone 2 installations, the installer shall ensure protection of supply terminals against transient voltages exceeding 140% of the rated supply voltage.
- 4) It is the responsibility of the manufacturer to provide warning markings in French where required by local jurisdictions.
- 5) Install in environments rated Pollution Degree 2 or better; overvoltage category I or II.



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## Equipment Ratings:

Associated apparatus with intrinsically safe (entity) connections to Class I, II and III, Division 1, Groups A, B, C, D, E, F and G Hazardous (Classified) Locations per control drawing 9116QF01.

Associated apparatus with intrinsically safe (entity) connections to Class Zone 0, Group IIC Hazardous (Classified) Locations per control drawing 9116QF01.

Nonincendive / suitable for Class I, Division 2, Groups A, B, C and D Hazardous (Classified) Locations, T4 at T ambient of -20°C to 60°C.

Non-sparking apparatus for Class I, Zone2, Group IIC Hazardous (Classified) Locations, T ambient of -20°C to 60°C.

## FM Approved for:

PR electronics A/S  
DK-8410 Ronde, Denmark



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:

CAN/CSA C22.2 No. 157	1992
CAN/CSA C22.2 No. 213	1987
CAN/CSA-E60079-0	2002
CAN/CSA-E60079-11	2002
CAN/CSA C22.2 No. 1010-1	2004

Original Project ID: 3038267C

Approval Granted: April 23, 2010

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
120607	June 19, 2012		

FM Approvals LLC

*J.E. Marquedant*

J.E. Marquedant  
Group Manager, Electrical

19 June 2012  
Date