



FM Approvals
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CERTIFICATE OF COMPLIANCE

HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

9491-PS. 12 VDC POWER SUPPLY MODULES

AIS / I / I / CD / Ta = 70°C – 9491 System; Entity – Terminals 1 & 3
 I / 0 / [Ex ia] IIB, Ta = 70°C – 9491 System; Entity – Terminals 1 & 3
 I / 1 / [Ex ib] IIB, Ta = 70°C – 9491 System; Entity – Terminals 5 & 6
 NI / I / 2 / CD / T4, Ta = 70°C
 I / 2 Ex nA II T4, Ta = 70°C

Entity Parameters:

Terminals 13 and 14 or 8 pin connector		
U _m	253V	
Terminals 1 and 3 - 'ia' output (linear characteristic, resistive current limit, source)		
U _o or V _{oc}	12.4V	
I _o or I _{sc}	2.67A	
P _o	8.27W	
C _o or C _a	Group IIB Class I, Group C	7.9µF
	Group IIA Class I, Group D	30µF
L _o /R _o	Group IIB Class I, Group C	17.2µH/Ω
	Group IIA Class I, Group D	34.4µH/Ω
Terminals 5 and 6 - 'ib' output (non-linear, active current 'switch-off', source)		
U _o or V _{oc}	12.4V	
I _o or I _{sc}	505mA	
P _o	6.3W	
C _o or C _a	500nF	
L _o or L _a	100µH	



Member of the FM Global Group

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). The equipment shall be installed in an enclosure with a minimum ingress protection rating of IP54 unless the apparatus is intended to be afforded an equivalent degree of protection by location.*

3) *When optionally connecting the power supply module to an external backplane via connector X1 the following conditions apply:*

The external backplane shall be fitted with two retention clips type MTL 012-533 (Honeywell part no. 51153961-100) that allow the power supply module to be 'clipped' to the backplane. The power supply module being 'clipped' to the backplane forms part of the hazardous location protection and as such the retention clips shall always be in place when the power supply module is energized.

Equipment Ratings:

Associated Intrinsically Safe (Entity) with connections for Class I, Division 1, Groups C and D; Intrinsically Safe (Entity) connections for Class I, [Ex ia] IIB and [Ex ib] IIB per Control Drawing 9491 System; Nonincendive / suitable for Class I, Division 2, Groups C and D, Temperature Class T4 Ta = 0°C to 70 °C; non-sparking, Ex nA II for Class I, Zone 2, Temperature Class T4 Ta = 0°C to 70 °C, Hazardous Locations.

FM Approved for:

Controlled Systems Limited
Derbyshire, England



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

C22.2 No. 1010.1	2004
C22.2 No. 213	1987
C22.2 No. 157	1992
CAN/CSA-E60079-0	2007
CAN/CSA-E60079-11	2002
CAN/CSA-E60079-15	2002

Original Project ID: 3036467C

Approval Granted: *March 30, 2010*

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
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FM Approvals LLC

J. E. Marquardt
Group Manager, Electrical

30 March 2010
Date