



Certificate of Compliance

Certificate: 70014336

Master Contract: 176847

Project: 70202617

Date Issued: 2019-03-14

Issued to: Flowsolve/PMV Automation AB
Korta Gatan 9
Solna, 171 54
SWEDEN
Attention: Mats Ragnarsson

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Issued by: *Joseph Da Silva*
Joseph Da Silva

PRODUCTS

CLASS - C225802 - PROCESS CONTROL EQUIPMENT-For Hazardous Locations-

Class I, Division 1, Groups B,C,D; Class II, Division 1, Groups E, F, G; Class III.

-Ultraswitch DS/DM switch box with suffixes: DS/DMxxxxxxxxxxxx, rated based on the type of limit switches installed inside with maximum ratings of 10A at 125/250Vac, see table below. Aluminum or Stainless Steel Enclosure Type 4X; Tamb: -55°C to +70°C; T4.

CLASS - C225882 - PROCESS CONTROL EQUIPMENT-For Hazardous Locations - Certified to US Standards

Class I, Division 1, Groups A,B,C,D; Class II, Division 1, Groups E, F, G; Class III.

-Ultraswitch DS/DM switch box with suffixes: DS/DMxxxxxxxxxxxx, rated based on the type of limit switches installed inside with maximum ratings of 10A at 125/250Vac, see table below. Aluminum or Stainless Steel Enclosure Type 4X; Tamb: -55°C to +70°C; T4.

Notes: Suffixes denote mechanical, variations and switch ratings.



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Switch types and their ratings are showed in this table:

No	Type	Contact Rating	Ambient temperature ratings
F9	IFM IN0097 20 (IN-2002-ABOA)250V AC/DC NO 2-Wire	20-250 V, max.5mA	-25°C to +80°C
FK	IFM NS5002 (Inductive Proximity Switch)	V _{max} =15V, I _{max} =50mA, C _i =80 nF, L _i = 110 uH	Max. Amb. 70°C / T6 Max. Amb. 80°C / T5
M1	SPDT Mechanical switches 150°C (V7-1C17D8-201)	125/250Vac 10A, 125Vdc 0.5A, 250Vdc 0.25A	-40°C to +85°C
MC	SPDT Mechanical switches 150°C (V7-1C13D8-201)	125/250Vac 10A, 125Vdc 0.5A, 250Vdc 0.25A	-40°C to +85°C
MG	SPDT Mechanical - Gold Contacts (V7-1D19D8-201)	1A @ 125 Vac	-40°C to +85°C
MK	Essen- SPSP	V _{max} =250V, I _{max} =15A,	Max. Amb. 60°C
N1	P&F NJ4-12GM40-E Proximity 3-wire NPN NO 10-60 VDC	10-60 V, max.200mA,	-25°C to +70°C
N3	P&F SJ3.5-S1N (NAMUR)	NAMUR standard 8Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-25°C to +100°C
N8	P&F NJ2 V3 N (NAMUR)	NAMUR standard 5-25Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-25°C to +100°C
N9	P&F NBB3-V3-Z4	Max.100mA, 5-60 V	-25°C to +100°C
NA	P&F NBN4-12GM40-E2 Inductive. 3 wires PNP NO 10-30VDC	NAMUR standard 8.2Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-25°C to +70°C
ND	P&F NCB2-12GM40-Z1 Proximity inductive 2-wire DC NC	5-60 V, max.100mA,	-25°C to +70°C
NE	P&F NCB2-12GM35-N0 NAMUR with LED	NAMUR standard 8Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-25°C to +100°C
NF	P&F NCN4-12GM35-N0 NAMUR with LED	NAMUR standard 8.2Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-25°C to +100°C



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No	Type	Contact Rating	Ambient temperature ratings
NG	NJ5-11-N-G	NAMUR standard 8.2Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-25°C to +100°C
NK	P&F NCN4-12GM40-Z0 Proximity 2-wire DC NO	5-60 V, max.100mA,	-25°C to +70°C
NM	NJ2-11-SN-G	NAMUR standard 5-25Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-40°C to +100°C
NP	P&F SJ3.5-N (NAMUR)	NAMUR standard 5-25Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-25°C to +100°C
NQ	P&F NJ4-12GK-N (NAMUR)	NAMUR standard 5-25Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-25°C to +100°C
NR	NJ4-12GM40-E1, NPN NC	10-60 V, Max.200mA	-25°C to +75°C
NS	NJ4-12GM40-E2, PNP NO	10-60 V, Max.200mA	-25°C to +70°C
NT	NJ4-12GK40-E2, PNP NO	10-60 V, Max.200mA	-25°C to +70°C
NW	P&F SJ3.5-SN (NAMUR)	NAMUR standard 8Vdc, ≤1mA(w/ target) ≥3mA(w/out target)	-50°C to +100°C
P5	SPDT Proximity Hamlin 59150-3-S-02-F	120Vac 0.25A, 28Vdc 0.25A	-40°C to +150°C
PE	Flowserve Sabre SPDT Proximity	120Vac 1A 24Vdc 1A	-40°C to +85°C
PP	Flowserve Phazer SPDT Proximity	120Vac 3A 24Vdc 2A	-40°C to +85°C
PT	Flowserve Phazer BRS SPST Proximity	120Vac 3A 24Vdc 0.5A	-40°C to +85°C

CLASS – 2258 03 - PROCESS CONTROL EQUIPMENT – Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations

CLASS – 2258 83 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems For Hazardous Locations – CERTIFIED TO U.S. STANDARDS

Class I, Division 2, Groups A,B,C and D; Cl. II, Gps E, F and G; Cl. III;

-Ultraswitch DS/DM switch box with suffixes: DS/DMxxxxxxxxxxxx, rated based on the type of limit switches installed inside with non incendive entity parameters as shown in table below. Aluminum or Stainless Steel Enclosure Type 4X;



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Notes: Suffixes denote mechanical, variations and switch ratings.

Switch types and their ratings are showed in this table, refer to submittor's installation drawing IIC-58C for installation instructions:

No	Type	Non Incendive Entity Parameters	Ambient temperature ratings
FK	IFM NS5002 (Inductive Proximity Switch)	V _{max} =15V, I _{max} =50mA, C _i = 80 nF, L _i = 110 uH	Max. Amb. 70°C / T6 Max. Amb. 80°C / T5
N8	P&F NJ2 V3 N (NAMUR)	V _{max} =16V, I _{max} =52mA, P _i =169mW, C _i = 40 nF, L _i = 50 uH	Max. Amb. 60°C / T5 Max. Amb. 45°C / T6
NS	P&F NJ4-12GM40-E2 (NAMUR)	V _{max} =16V, I _{max} =52mA, P _i =169mW, C _i = 40 nF, L _i = 50 uH	Max. Amb. 60°C / T5
NT	P&F NJ4-12GK40-E2 (NAMUR)	V _{max} =16V, I _{max} =52mA, P _i =169mW, C _i = 40 nF, L _i = 50 uH	Max. Amb. 60°C / T5
P4	Aleph – PS6132	V _{max} =28V, I _{max} =45mA, P _i =315mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 40°C / T4
P5	Hamlin– 59135-030 Or 59150-030	V _{max} =28V, I _{max} =45mA, P _i =315mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 60°C / T4
PE	Flowserve - PRS-3 (XA0199)	V _{max} =28V, I _{max} =45mA, P _i =315mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 55°C / T6
PT	Flowserve - PRS-1 (XA0157)	V _{max} =28V, I _{max} =45mA, P _i =315mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 55°C / T6

CLASS – 2258 04 - PROCESS CONTROL EQUIPMENT – Intrinsically Safe, Entity - For Hazardous Locations
 CLASS – 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations
 – CERTIFIED TO U.S. STANDARDS

Class I, Division 1, Groups A,B,C and D; Cl. II, Gps E, F and G; Cl. III;

-Ultraswitch DS/DM switch box with suffixes: DS/DMxxxxxxxxxxxx, rated based on the type of limit switches installed inside with intrinsically safe entity parameters as shown in table below. Aluminum or Stainless Steel Enclosure Type 4X;

Notes: Suffixes denote mechanical, variations and switch ratings.

Switch types and their ratings are showed in this table, refer to submittor's installation drawing IIC-58C for installation instructions:



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No	Type	I.S. Entity Rating	Ambient temperature ratings / Temp code
FK	IFM NS5002 (Inductive Proximity Switch)	V _{max} =15V, I _{max} =50mA, C _i = 80 nF, L _i = 110 uH	Max. Amb. 70°C / T6 Max. Amb. 80°C / T5
M1	Honeywell - SPDT Mechanical switches 150°C (V7-1C13D8-201)	V _{max} =28V, I _{max} =45mA, P _i = 120 mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 60°C / T5 Max. Amb. 45°C / T6
MG	Honeywell - SPDT Mechanical - Gold Contacts (V7-1D19D8-201)	V _{max} =28V, I _{max} =45mA, P _i =315 mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 60°C / T5 Max. Amb. 45°C / T6
MK	Essen- SPSP	V _{max} =28V, I _{max} =45mA, P _i =315 mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 60°C / T5 Max. Amb. 45°C / T6
N8	P&F NJ2 V3 N (NAMUR)	V _{max} =16V, I _{max} =52mA, P _i = 169 mW, C _i = 40 nF, L _i = 50 uH	Max. Amb. 60°C / T4 Max. Amb. 40°C / T5 Max. Amb. 28°C / T6
NP	P&F SJ3.5-N	V _{max} =16V, I _{max} =52mA, P _i =169mW, C _i = 50 nF, L _i = 250 uH	Max. Amb. 60°C / T4 Max. Amb. 40°C / T6
NQ	P&F NJ4—12GK-N	V _{max} =16V, I _{max} =52mA, P _i =169mW, C _i = 45 nF, L _i = 50 uH	Max. Amb. 60°C / T5
P4	Aleph – PS6132	V _{max} =28V, I _{max} =45mA, P _i =315mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 40°C / T4
P5	Hamlin– 59135-030 Or 59150-030	V _{max} =28V, I _{max} =45mA, P _i =315mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 60°C / T4
PE	Flowserve PRS-3 (XA0199)	V _{max} =28V, I _{max} =45mA, P _i =315mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 55°C / T6
PT	Flowserve PRS-1 (XA0157)	V _{max} =28V, I _{max} =45mA, P _i =315mW, C _i = 1 nF, L _i = 1 uH	Max. Amb. 55°C / T6

APPLICABLE REQUIREMENTS

- | | | |
|---|---|--|
| CSA-C22.2 No. 0-M91 | - | General Requirements – Canadian Electrical Code, Part II |
| CSA-C22.2 No. 61010-1-12 | - | Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements |
| UL Std. No. 61010-1 (3 rd Edition) | - | Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements |
| CSA C22.2 No.25-1996 | - | Enclosures for Use in Class II Groups E, F and G Hazardous Locations |



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|----------------------------|---|
| CSA C22.2 No. 30-M1986 | - Explosion-Proof Enclosures for Use in Class Hazardous Locations |
| CSA C22.2 No. 213 – 17 | Nonincendive Electrical Equipment for use in Class I and II, Division |
| | 2 and Class III, Divisions 1 and 2 hazardous (classified) locations |
| CSA C22.2 No. 157-92 | - Intrinsically safe and Non-Incendive equipment or use in hazardous |
| | locations |
| FM 3610:2010 | - Intrinsically Safe Apparatus and Associated Apparatus for Use in |
| | Class I, II, II, Division 1, Hazardous Locations (Classified) Locations |
| FM 3611:2004 | - Nonincendive Electrical Equipment for Use in Class I and II, Division |
| | 2 and Class III, Divisions 1 and 2; Hazardous locations |
| FM 3616:2011 | - Dust-Ignitionproof Electrical Equipment General Requirements |
| FM 3615:2006 | - Explosionproof Electrical Equipment General Requirements |
| CAN/CSA-C22.2 No. 60529:05 | - Degrees of protection provided by enclosures (IP Code) |
| CSA C22.2 No.94.2-07/UL50E | - Enclosures for electrical equipment, environmental considerations |



Supplement to Certificate of Compliance

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*The products listed, including the latest revision described below,
are eligible to be marked in accordance with the referenced Certificate.*

Product Certification History

Project	Date	Description
70202617	2019-03-14	Update to CSA report 70014336 to cover; 1/ minor alternate construction 2/ Updating and replacing descriptive documents/drawings 3/ Evaluation of switch box as intrinsically safe
70081305	2016-08-23	Update report 70014336 to add the third conduit entry and some other small changes to the enclosure.
70014336	2015-12-04	Original certification of Ultraswitch DS/DM switch box with suffixes.