



Certificate of Compliance

Certificate: 1128727

Master Contract: 152218

Project: 2461415

Date Issued: October 17, 2011

Issued to: Mac Valves Incorporated

30569 Beck Rd
Wixom, MI 48393
USA

Attention: A'nika Shields

The products listed below are eligible to bear the CSA Mark shown



Eshwar Kashyap

Issued by: Eshwar Kashyap

PRODUCTS

CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

Solenoid Valves, Models listed below; intrinsically safe with Entity parameters: $V_{max} = 30V$, $I_{max} = 175mA$, $C_i = 0\mu F$, $L_i = 0mH$, when installed per Drawing No. IS-004; Tambient: 0 Deg. C to 40 Deg. C.

Solenoid Valve. Series 35A-abc-Dde-fg-FM-n.

a = Body Type O, A, B, E, F, G or H.

b = Port Size O, A, B, C, D, E, F, G, H, J or K.

c = Valve Function/Manifold Type O, A or B.

d = Coil Voltage FR or FS.

e = Lead Length A through Z.

f = Manual Operator 0, 1, 2, 3 or 4.

g = Electrical Connection AA through ZZ.

h = Modification (4 digit alphanumeric code) or Blank.



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Solenoid Valve. Series 45A-abc-Dde-fg-FM-h.

a = Body Type A, D, F, O, L or M.

b = Port Size O, A, B, C, D, F, G, H, J or K.

c = Flow Control, Reg. Base 1, 2, O, A, B, C, D, E, F, G, H, J or K.

d = Coil Voltage FR or FS.

e = Lead Length A through Z.

f = Manual Operator 0, 1, 2, 3 or 4.

g = Electrical Connection AA through ZZ.

h = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 82A-ab-cde-f-Dgh-ij-k.

a = Spool Type/Valve Func. O, A, B, C, D, E, F, G, H, J, K, L or M.

b = Body Type A, B, C, D, E or F.

c = Port Size O, A, B, C, D, E or F.

d = Ind. & Man. Base Config. O, A, B, C, D, K, L, M, N, P, R or S.

e = Int. or Ext. Pilot, O, A, B, C, D, E or F.

f = Pilot Style FA or FB.

g = Coil Voltage FR or FS.

h = Lead Length A through Z, 1, 2, 3, 4, 5 or 6.

i = Manual Operator 0, 1, 2, 3 or 4.

h = Electrical Connection AA through ZZ.

k = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 56C-ab-cde-f-FM-g.

a = Valve Function 1, 2, 3, 4, 6 or 7.



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b = Port Size 2, 3, 5, 6, 7 or 8.

c = Coil Voltage A5 or A6.

d = Manual Operator 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

e = Enclosure AA through ZZ.

f = Lead Length AA through ZZ or Blank.

g = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 5aC-bc-def-FM-g.

a = Series 7 or 8.

b = Valve Function 1, 2, 3, 4, 6 or 7.

c = Port Size 1, 2, 3, 4, 5 or 6.

d = Coil Voltage A5 or A6.

e = Manual Operator 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

f = Enclosure AA through ZZ.

g = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 92B-abc-def-g-Dhi-jk-i.

a = Valve Function O, A, B, C, D, E, F, G, L, M, N or P.

b = Body Type and Electrical Options O, A or B.

d = Port Size and Thread Type O, A, B, C, D, E, F, G, H or J.

e = Ind. Base Config. O, A, B, C, or D.

f = Int/Ext Pilot O, A, B, C, D, E, F, G or H.

g = Pilot Style DM or DP.

h = Coil Voltage FR or FS.

i = Lead Wire Length A through Z or 0 through 9.

j = Manual Operator 0, 1, 3 or 4.



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k = Electrical Connection AA through ZZ.

l = Modifications (4 digit alphanumeric code) or blank.

Solenoid Valve. Series 1abB-cde-f-FM-g.

a = Valve Function 1, 2, 3, 4, 6, 7 or 8.

b = Port Size/Body Style 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

c = Coil Voltage A5 or A6.

d = Manual Operator 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

e = Enclosure AA through ZZ.

f = Lead Length AA through ZZ or Blank.

g = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 8abC-c-def-ghi-j-k.

a = Operator 1 or 2.

b = Pilot Air 1, 2, 5 or 6.

c = Pilot Exhaust FM or FP.

d = Coil Voltage A5 or A6.

e = Manual Operator 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

f = Enclosures AA through ZZ.

g = Spool Config. 1, 2, 5, 6, 7 or 8.

h = Body Config. 1, 2, 3, 4, 5, 6, 7 or 9.

i = Port Size 2, 3, 5 or 6.

j = Lead Length AA through ZZ or Blank.

k = Modification (4 digit alphanumeric code) or Blank.



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Solenoid Valve. Series 9abA-c-def-g-h.

a = Operator 1 or 2.

b = Body Style/Ports 1, 2, 3, 4, 5, 6, 7, 8 or 9.

c = Pilot Type FM or FP.

d = Coil Voltage A5 or A6.

e = Manual Operator 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

f = Enclosure AA through ZZ.

g = Lead Length AA through ZZ or Blank.

h = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 52A-ab-cde-f-Dgh-ij-k.

a = Spool Type 1, 2, 3 or 4.

b = Body Options 1 or 4.

c = Port Size/Th'd Type A, B, C, D, E or F.

d = Base Config. O.

e = Int/Ext A or B.

f = Pilot Style DM or DP.

g = Coil Voltage FR or FS.

h = Lead Length A through Z.

j = Manual Operator 0, 1, 2, 3 or 4.

k = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 4abA-cde-f-Dgh-j-k.

a = Spool Type 0, 1, 2, 3, 4, 5, 6, 7 or 8.

b = Body Options 0, 1, 2, 3 or 4.



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c = Port Size/Type O, A, B, C, D, E or F.

d = Base Config. O, A or G.

e = Int/Ext Pilot O, A, B, C or D.

f = Pilot Style DM or DP.

g = Coil Voltage FR or FS.

h = Lead Length A through Z.

i = Manual Operator 0, 1, 2, 3 or 4.

j = Electrical Connection AA through ZZ.

k = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 62abC-cde-f-ghDA-i.

a = Function 1, 2, 3 or 4.

b = Body Type 1, 2 or 3.

c = Port Size 0, 1, 2, 4 or 5.

d = Pilot Air 0, 1, 2, 5 or 6.

e = Porting Options 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

f = Pilot Exhaust FM or FP.

g = Coil Voltage A5 or A6.

h = Manual Operator 0, 1, 2, 3 or 4.

i = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 63abD-cde-f-ghDA-i.

a = Function 1, 2, 3, 4 or 5

b = Body Type 1, 2, 3, 4, 5 or 6.

c = Port Size 1, 2, 3, 4, 5, 6, 7 or 8.



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d = Pilot Air 0, 1, 2, 5 or 6.

e = Porting Options 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

f = Pilot Exhaust FM or FP.

g = Coil Voltage A5 or A6.

h - Manual Operator 0, 1, 2, 3 or 4.

i = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 65abB-cde-f-ghDA-i.

a = Function 1, 2, 3, 4 or 5.

b = Body Type 1, 2 or 3.

c = Port Size 0, 1, 2, 3, 4, 5, 6, 7 or 8.

d = Pilot Air 0, 1, 2, 5 or 6.

e = Porting Options 0, 1, 2, 3, 4, 5 or 6.

f = Pilot Exhaust FM or FP.

g = Coil Voltage A5 or A6.

h = Manual Operator 0, 1, 2, 3 or 4.

i = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 66abA-cde-f-ghDA-i.

a = Function 1, 2, 3, 4 or 5.

b = Body Type 1, 2 or 3.

c = Port Size 0, 2, 3, 4, 5 or 6.

d = Pilot Air 0, 1, 2, 5 or 6.

e = Single/Dual Pressure 0, 1, 2, 3, 4, 5 or 6.

f = Pilot Exhaust FM or FP.



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g = Coil Voltage A5 or A6.

h = Manual Operator 0, 1, 2, 3 or 4.

i = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. ISO Series a-b-c-def-g.

a = Valve Type MV-A1C, MVA2B or MV-A3B.

b = Body Type A111, A121, A131, A135, A141, A142, A144, A151, A152, A154, A211, A221, A231, A232, A241, A251, A311, A312, A321, A322, A331, A332, A341, A351 OR A352.

c = Pilot Exhaust FM, FP, FC or FD.

d = Coil Voltage A5 or A6.

e = Manual Operator 0, 1, 2, 3 or 4.

f = Enclosures AA through ZZ.

g = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series MACa-bcde-f-ghDA-i.

a = Series 125A or 250A.

b = Type V, B or M.

c = Function 1, 2, 3, 4, 5, 6 or 7.

d = Electrical Conn. A, B or C.

e = Lights 1, 2, 3 or 4.

f = Pilot FM or FP.

g = Coil Voltage A5 or A6.

h = Manual Operator 0, 1, 2, 3 or 4.

i = Modification (4 digit alphanumeric code) or Blank.



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The following modifications appear, for all valves, where the letter "h" appears. These modifications are used to ensure there are conduit provisions for Class II installations. Additional modification no.'s may appear. These denote minor variations that have no bearing on Intrinsic Safety or Class II operation.

C031: Is for Individual Base valves with conduit liner listed on Modification and Manifold Base valves without conduit liner for use in Class II, Groups E, F, and G.

C032: Is for all Manifold Base valves with conduit liner on left side for use in Class II, Groups E, F, and G.

C033: Is for all Manifold Base valves with conduit liner on right side for use in Class II, Groups E, F, and G.

C034: Is for all series listed that can use the Mac 100 and 200 Series AA and HA cover options with conduit liner for use in Class II, Groups E, F, and G.

C035: Is for all series listed and are for use in Class I, Groups A, B, C and D and Class III.

APPLICABLE REQUIREMENTS

- CAN/CSA-C22.2 No. 0-M91 - General Requirements – Canadian Electrical Code, Part II
- C22.2 No.25-1966 - Enclosures for Use in Class II, Groups E, F and G Hazardous Locations
- C22.2 No. 142-M1987 - Process Control Equipment
- CAN/CSA-C22.2 No. 157-92 - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations



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 |
|----------------|------------------|--|
| 2461415 | October 17, 2011 | Minor modifications to several drawings. |
| History | | |
| 1128727 | October 23, 2001 | Report issued to include several Solenoid Valve series for Hazardous Locations |

PRODUCTS

CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations

Class I, Groups A, B, C, and D; Class II, Groups E, F, and G; Class III:

Solenoid Valves, Models listed below; intrinsically safe with Entity parameters: $V_{max} = 30V$, $I_{max} = 175mA$, $C_i = 0\mu F$, $L_i = 0mH$, when installed per Drawing No. IS-004; $T_{ambient}$: 0 Deg. C to 40 Deg. C.

Solenoid Valve. Series 35A-abc-Dde-fg-FM-n.

a = Body Type O, A, B, E, F, G or H.

b = Port Size O, A, B, C, D, E, F, G, H, J or K.

c = Valve Function/Manifold Type O, A or B.

d = Coil Voltage FR or FS.

e = Lead Length A through Z.

f = Manual Operator 0, 1, 2, 3 or 4.

g = Electrical Connection AA through ZZ.

h = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 45A-abc-Dde-fg-FM-h.

a = Body Type A, D, F, O, L or M.

b = Port Size O, A, B, C, D, F, G, H, J or K.

c = Flow Control, Reg. Base 1, 2, O, A, B, C, D, E, F, G, H, J or K.

d = Coil Voltage FR or FS.

e = Lead Length A through Z.

f = Manual Operator 0, 1, 2, 3 or 4.

g = Electrical Connection AA through ZZ.

h = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 82A-ab-cde-f-Dgh-ij-k.

a = Spool Type/Valve Func. O, A, B, C, D, E, F, G, H, J, K, L or M.

b = Body Type A, B, C, D, E or F.

c = Port Size O, A, B, C, D, E or F.

d = Ind. & Man. Base Config. O, A, B, C, D, K, L, M, N, P, R or S.

e = Int. or Ext. Pilot, O, A, B, C, D, E or F.

f = Pilot Style FA or FB.

g = Coil Voltage FR or FS.

h = Lead Length A through Z, 1, 2, 3, 4, 5 or 6.

i = Manual Operator 0, 1, 2, 3 or 4.

h = Electrical Connection AA through ZZ.

k = Modification (4 digit alphanumeric code) or Blank.

Solenoid Valve. Series 56C-ab-cde-f-FM-g.

a = Valve Function 1, 2, 3, 4, 6 or 7.

b = Port Size 2, 3, 5, 6, 7 or 8.

c = Coil Voltage A5 or A6.

d = Manual Operator 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9.

e = Enclosure AA through ZZ.

f = Lead Length AA through ZZ or Blank.

g = Modification (4 digit alphanumeric code) or Blank.