

REPORT NO: LR 22355-30

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Issued by G. Cerbu, P. Eng., Reviewed by T. Smith, P. Eng.

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Issued by G. Cerbu, P. Eng., Reviewed by A. Adari, P. Eng.

Pages Replaced: Report Re-Issued
Illustration Replaced: Ill 3

Contents: Pages - 1 to 5
Illustrations - 1 to 11

SUBJECT

CLASS 3231 02 - SWITCHES - Automatic - Pressure Type

Piston operated automatic pressure switches, open and enclosed types, Model Nos 9048, T9048, TC9612, C9622, TC9622, 9672, C9612 and 9673 with suffixes, rated 300V ac (max), 10A (max), 1/2A 125V dc and 1/4A 250V dc.

Note: Open type pressure switches are Certified as components for use only in other equipment where the suitability of the combination is determined by the Canadian Standards Association.

AS400/22355.30/REPORTS/1/kr



REPLACES

Page No:
Page Date:
Appl. No:

REPORT NO: LR 22355-30

Page No: 2
Date Issued: March 27, 1990
Application No: LR 22355-36

Reviewed By: A. Adari, P. Eng.

Issued By: G. Cerbu, P. Eng.

DECLARATION

The product, as described in this report, complies with:

CSA Standard C22.2 No 0-M1982 - General Requirements - Canadian Electrical
Code, Part II
14-M1987 - Industrial Control Equipment

MARKINGS

The submitter's name, model designation, electrical rating and CSA Monogram appear on each switch. The electrical ratings appear on a CSA Accepted adhesive type label.

ALTERATIONS

1. The markings are as indicated in "MARKINGS" above.
2. Open type pressure switches with free leads must be provided with a 1/32 in. radius on the inside edge around box wire opening in order to comply with CSA Std C22.2 No 0-M1982, Cl 4.13.2.3.

FACTORY TESTS

The equipment at the conclusion of manufacture, before shipment, shall withstand for one min, without breakdown, the application of 1000V ac plus twice the max rated voltage between live parts and exposed non-current-carrying metal parts. The factory test may be made at existing room temperature. As an alternative, a potential 20 percent higher may be applied for one sec.

Warning: The factory test(s) specified may present a hazard of injury to personnel and/or property and should only be performed by persons knowledgeable of such hazards and under conditions designed to minimize the possibility of injury.

DESCRIPTION

LR 22355-36: Covers report corrections.

General: These switches differ from each other in operating pressure and actuation valve (differential pressure) arrangement. The Certified Micro switches are listed in this report. The mechanical and electrical differences are detailed as follows:



REPLACES

Page No:

Page Date:

Appl. No:

REPORT NO: LR 22355-30

Page No: 3

Date Issued: March 27, 1990

Application No: LR 22355-36

Reviewed By: A. Adari, P. Eng.

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Electrical Spacings: These controls are in compliance with the electrical spacing requirements of CSA Std C22.2 No 14-M1987, Table 6, Group B.

Electrical Ratings: Refer to attached Ill 1.

Nomenclature: Refer to attached Ills 2 and 3.

Nos 9048 and T9048: These are single setting, enclosed piston-operated switches that differ from each other only in that the Prefix "T" indicates the use of separate cast aluminum junction box (Prefix "T") 1/16 in nominal thickness, approx overall dimensions 3-3/4 in length by 2-3/8 in wide by 2 in high including two 1/2 in conduit hubs with well rounded stops and cover of cast aluminum 1/16 in nominal thickness 3 in by 2-3/8 in by 1/2 in provided with a rubber gasket 1/16 in thick, 3/16 in wide. The cover is secured by four screws with lockwashers.

Both switches have cast aluminum enclosures 1/16 in nominal thickness, approx 5-5/8 in overall by 4-1/8 in by 1-7/8 in included in one - 1/2 in conduit hub with well rounded stop. A 1 in id hub is provided for the piston assembly which has a 5/8 in piston within a steel enclosure 1-1/8 in od by 1-13/16 in long. A second 1 in id hub 1-1/2 in long provides a housing for the pressure adjustment which is essentially a 1-3/8 in spring with a 3/4 in cap on one end and 1 in od threaded plug 7/8 in long on the other. The enclosure has hubs to mount a balance arm 1/2 in by 1/2 in by 3 in long. The cover is 1/16 in formed steel 4-1/8 in by 3-3/16 in gasketed with 1/32 in treated fibre gasket same size as cover. The enclosure also has a double boss to mount the following switch:

Switch for No 9048: CSA Certified Micro switch BZ-2RD-P1 Code L96 spdt snap action rated 15A, 125, 250 or 480V ac, 1/2A, 125V dc, 1/4A, 250V dc. This switch is backed by 1/32 in treated fibre 1-3/4 in by 1-1/8 in secured in place by two switch-mounting plated steel screws having two insulating washers of 0.032 fish paper 1/2 in od by 0.156 in id.

Switch for No T9048: CSA Certified Micro switch BZ-2RD same as above except provided with 6 in long Type TEW, No 16 AWG leads.

Terminals: Zip Industries, No 6, Z-69P insulated Style "B" terminals.

Terminal Block for T9048: Jones block three terminal type provided with 1/32 in fish paper 1-5/16 in by 2-1/16 in backing. This block is mounted to enclosure by two screws.



REPLACES

Page No:

Page Date:

Appl. No:

REPORT NO: LR 22355-30

Page No: 4

Date Issued: March 27, 1990

Application No: LR 22355-36

Reviewed By: A. Adari, P. Eng.

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No 9672 - (Single Setting) and No TC9622 - (Dual Control): The Prefix "C" is used to designate the electrical connections are made through a 27/32 in hole using a 1/2 in close nipple to a prefix "T" box described above. Actuation adjustment is provided by a self-locking spring loaded screw. Model 9672 has integral junction box with a cover opening approx 2-5/16 in by 1-15/16 in to accommodate a terminal strip and has a 1/2 in conduit hub with well rounded stops. The cover is 1/32 in plated steel approx 2-5/8 in by 2-3/16 in with 1/8 in rubber gasket secured to the enclosure by four screws. Two 3/8 in dia mounting holes are provided below enclosure for mounting. Refer to attached Ills 4 and 5.

Switch: CSA Certified Micro switch BZ-2RD Code L96 spdt snap switch rated 15A, 125V, 250 or 480V ac, 1/8 hp - 125V ac, 1/4 hp - 250V ac, 1/2A, 125V dc, 1/4A, 250V dc. Insulated from mounting bracket with 0.0075 Mylar 2-1/4 in long by 1-7/8 in wide with wiring slot 1-1/4 in long by 5/16 in wide.

Terminal Block for TC9622: Same as for T9048, except four terminal type mounted in enclosure by cement.

No 9673: Has same electrical construction as above switches except that Suffix "H" designates "Oil line service only" (non-hazardous). The lower section of the piston and pressure assembly is modified to have a high-low differential pressure chambers with 1/4 in NPT connections.

No C9612: Same as control Type 9672 described above, except the terminal strip is omitted and lead wires are used. The lead wires are CSA Certified Type AWM, 600V, 105C, No 16 AWG. The ground conductor is coloured green fastened with a plated steel No 8-32 screw threaded into hub which is integral part of the enclosure. Refer to attached Ills 6 and 7.

No C9622-CS: Same as control Type TC9622-CS described above, except is the free lead version. Refer to attached Ills 8 and 9.

No TC9612-CS: Same as control Type C9612-CS described above, except is the junction box version (Prefix "T"). Refer to attached Ills 10 and 11.



REPLACES

Page No:

Page Date:

Appl. No:

REPORT NO: LR 22355-30

Page No: 5

Date Issued: March 27, 1990

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TESTS

Testing conducted on the subject pressure switches received satisfactory results.

Test data as conducted beneath the respective Certification Report is as follows:

LR 22355-3

Dielectric Strength: Cl 6.9.

No further tests were deemed necessary.

LR 22355-10: Due to similarity to Certified controls no tests were performed.

LR 22355-30: As the electrical rating of the pressure switch does not exceed the electrical rating of the Certified Micro switch used a component of the pressure switch, no tests were necessary.

LR 22355-36: No tests were considered necessary.