

IS/IEC 60529 : 2001, IP 68 / TR-CU CERTIFIED
 IS/IEC 60079-0 : 2017 and IS/IEC 60079-1 : 2014



About US

M-torQ Controls has a common vision and objective of providing best in class Fluid Power Technology Products and Control Solutions to meet the demands of industrial automation & fluid control process needs of the demanding market. We operate our business into three major verticals namely Limit Switch box, gear box/manual override and valve automation solutions with hands-on experience in the area of Sales, Design Engineering and Execution. With a broad range of multi brand products and solutions for valve automation needs, we cater to a wide variety of industries viz Oil, Gas, Petrochemical, Chemical, Agro Chemical, cement, steel, power, water treatment, pharmaceuticals, paints, pulp and paper, food & beverages and other process industries

SECTORS WE SERVE



Chemical



Pharma



Oil & Gas



Power



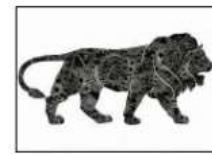
Fertilizers



Sugar

ENGINEERING-INNOVATION-SOLUTION





IS/IEC 60529 : 2001, IP 68 / TR-CU CERTIFIED
 IS/IEC 60079-0 : 2017 and IS/IEC 60079-1 : 2014



M-torQ Controls India

ISO 9001-2015 COMPANY



FLAMEPROOF LIMIT SWITCH BOX MLS 5001 SERIES

WEATHERPROOF LIMIT SWITCH BOX MLS 5004 SERIES



SECTORS WE SERVE



Chemical



Pharma



Oil & Gas



Power

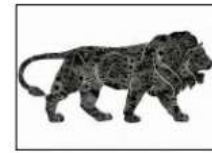


Fertilizers



Sugar





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IS/IEC 60079-0 : 2017 and IS/IEC 60079-1 : 2014



M-torQ MLS series 5001 Flameproof Limit Switch box

Function

Limit switch boxes MLS-5001 SERIES are the compact solution when it comes to electrical feedback signals and monitoring the position of process valves which are actuated with pneumatic quarter turn actuators. They can be mounted directly without other accessories on quarter turn actuators with a mounting interface to VDI/VDE 3845. Direct mounting means that they require minimal space.

FEATURES

- Twin shaft design, ensuring a complete sealed device. The shaft is split into two parts, each fitted and sealed into the body and cover for the best weather insulation even during opening operation
- Copper free aluminium body and cover with polyester Powder coating
- AISI 316L stainless steel body and cover with electro-polished finishing/Glass beading
- All fasteners & Shaft in stainless steel
- Shatterproof Polycarbonate Dome
- Easily settable cam
- The locked Serrated cams, ensures the secured settings against any vibration
- The switch box confirms to Ex db IIC, T6 Gb Highest level of safety
- Cable entry 1/2" NPT, M20x1.5 or 3/4" NPT
- Cable entry Dual cable entry Optional 4 cable entry
- A special PCB, eliminates all the wiring from the switch element to the terminals. Complete protection against short circuit.
- Standard Namur VDI/VDE-3845 Mounting
- Mounting as per ISO 5211
- Weight of SS Limit Switch Box Approx 3.9 Kg
- Weight of Aluminium Limit Switch Box Approx 1.7 Kg



Stainless Steel SS316L



LIMIT SWITCH BOX

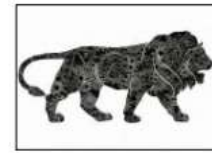
MANUAL OVERRIDE

MANUAL GEARBOX

PNEUMATIC ACTUATOR

VALVE AUTOMATION WITH ADAPTATION KIT

FIRE PROOFING SOLUTIONS



IS/IEC 60529 : 2001, IP 68 / TR-CU CERTIFIED
IS/IEC 60079-0 : 2017 and IS/IEC 60079-1 : 2014



M-torQ MLS series 5001 Flameproof Limit Switch box

- Two different designs available Fix bracket / Adjustable bracket
- All brackets are available in MS powder coated for general purpose and SS316 graded material for high corrosion resistance.
- 4-20 mA signal transmitter options
- IP 68 Up to 2m 1 hour with lab certified as per IS/IEC 60529 : 2001
- Limit switch box with Stainless steel 304 / 316 nameplate
- Documentation : English standard.
- Dual language based on project (Option)
- Temperature range :
- Ambient Temperature: -20°C to +55°C (-4 to 131°F) (T6)
- Operating Temperature: -40°C to +85°C & -60°C to +80°C
- Approvals : ATEX, IECEX, EAC,CCOE/PESO, SIL certified up to SIL 3 (Sensors)
- Enclosure Type based on IECEX :
Ex d IIC T6 Gb
Exia II T6 Gb
Ex tb IIIC T85 °C Db, IP68
- Enclosure Type of explosion proof is based on ATEX
II 2 G Ex D IIC T6 Gb
II 2 G Ex ia D IIC T6 Gb
II 2 D Ex tb IIIC T85 °C Db, IP68



LIMIT SWITCH BOX

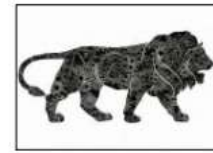
MANUAL OVERRIDE

MANUAL GEARBOX

PNEUMATIC ACTUATOR

VALVE AUTOMATION WITH ADAPTATION KIT

FIRE PROOFING SOLUTIONS



IS/IEC 60529 : 2001, IP 68 / TR-CU CERTIFIED
 IS/IEC 60079-0 : 2017 and IS/IEC 60079-1 : 2014



M-torQ MLS series 5001 Flameproof Limit Switch box

DOMES

Unique “two piece” dome arrangement. The black plastic makes the transparent dome an integral part. This ensure an extra long life.
 Visual Indicator : Open Close multi angle top and side view RED and GREEN.
 (RED and YELLOW option)





Product Ordering Matrix

Nomenclature

MLS5001 AL WP 1 2 T C 1 G A 0 W N A 0

MLS5001 Series

AL Copper free aluminum enclosure Aluminum
SS Stainless steel 316L enclosure Stainless steel

WP Weather Proof
FL Flame Proof

- 1 Honeywell V15T16EZ200A05 SPDT 24 VDC 6A/110 VDC 0.5A/250 VAC 10A mechanical*
 - 2 P&F NBB2-V3-E2 Proximity 3 wire PNP NO 10-30 VDC*
 - 3 P&F NBB3-V3-Z4 Proximity 2 wire NO 5-60 VDC*
 - 4 P&F NBB4-12GM30-E2 Proximity 3 wire NO 10-30 VDC**
 - 5 P&F NBN4-12GM40-Z0 Proximity 2 wire NO 6-60 VDC (preferred model for 24 VDC-2wire)**
 - 6 P&F NCB2-12GM40-Z0 Proximity 2 wire NO**
 - 7 P&F NCN8-18GM40-NO Proximity 2 wire NAMUR**
 - 8 P&F NJ8-18GM-N Proximity 2 wire NAMUR SIL 2**
 - 9 P&F NJ4-12GM-N Proximity 2 wire EEx ia certified NAMUR**
 - 10 P&F NJ2-V3-N Proximity 2 wire EEx ia certified NAMUR*
 - 11 P&F SJ3.5-N Proximity 2 wire EEx ia certified**
 - 12 P&F NJ5-18GM-N Proximity 2 wire EEx ia certified NAMUR **
 - 13 P&F NCB2-V3-NO Proximity 2 wire NAMUR SIL 2*
 - 14 P&F NJ2-12GK-SN Proximity 2 wire NAMUR SIL 3**
 - 15 P & F SJ3.5-SN Proximity 2 wire Namur **
 - 16 P&F NBB2-12GM40-Z0 Proximity 2 wire NO 5-60VDC**
 - 17 P&F NBB5-18GM40-Z0 Proximity 2 wire NO 5-60VDC**
 - 18 P&F SB3.5-E2 Proximity 3 wire NO PNP 10-30VDC**
 - 19 P&F SJ2-SN Proximity 2 wire NAMUR SIL 3**
 - 20 P&F NJ4-12GK-SN Proximity 2 wire NAMUR SIL 3**
 - 21 Honeywell V15S05CZ100A0501 SPDT 24 VDC 0.2A/250 VAC 5A Mechanical*
 - 22 As per customer request
- * Max 4 Switches/Sensors possible
** Max 2 Switches/Sensors possible

2 N°2 Switches/Sensors **0** N°1 Switch/Sensor
4 N°4 Switches/Sensors **3** N°3 Switches/Sensors

T Standard PCB board terminal
R Stainless steel plate with cage clamp terminal
M Stainless steel plate with screw type terminal

C Black powder coating Standard
S Optional color
T Glass beading Stainless steel

- 1 N°2 cable entries 1/2" NPT
- 2 N°2 cable entries M20x1.5
- 3 N°4 cable entries 1/2" NPT
- 4 N°4 cable entries M20x1.5
- 5 N°2 cable entries 3/4" NPT
- 6 N°4 cable entries 3/4" NPT
- 7. N°4 cable entries 2 nos. 1/2" NPT & 2 nos. 3/4" NPT
- 8. N°3 cable entries 1/2" NPT

G Visual position indicator red (close) and green (open)
Y Visual position indicator red (close) and yellow (open)

A CCOE/PESO certified X Without Approval
C ATEX and IECEx certified
R CUTR certified

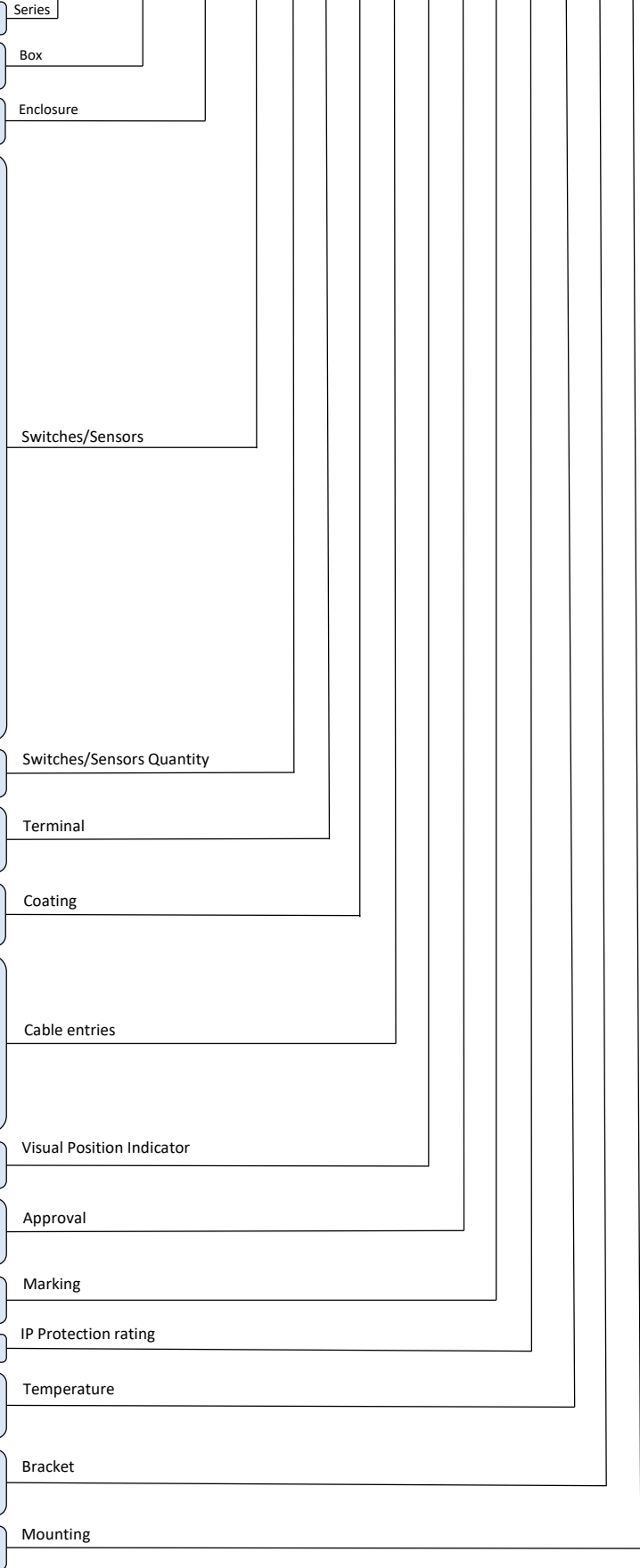
0 Ordinary location
5 Certification marking Exdb IIC T6 Gb

W Weather Proof IP 68

N Ambient temperature range : -20°C to +55°C
M Ambient temperature range : -40°C to +55°C
H Ambient temperature range : -60°C to +80°C

A Without Bracket
B SS Bracket
C MS Bracket

0 M6x1P on 50 PCD & M8x1.25P on 79.1 PCD
1 M6x1P on 50 PCD & 5/16"-18 UNC on 79.1 PCD



Ordering Code Example : **MLS5001ALWP12TC1GA0WNA0**

LIMIT SWITCH BOX

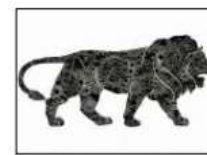
MANUAL OVERRIDE

MANUAL GEARBOX

PNEUMATIC ACTUATOR

VALVE AUTOMATION WITH ADAPTATION KIT

FIRE PROOFING SOLUTIONS

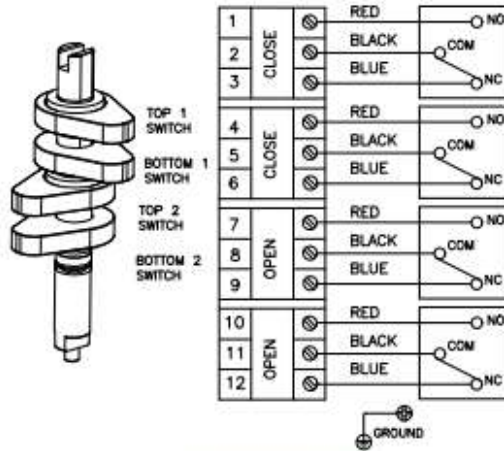


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IS/IEC 60079-0 : 2017 and IS/IEC 60079-1 : 2014

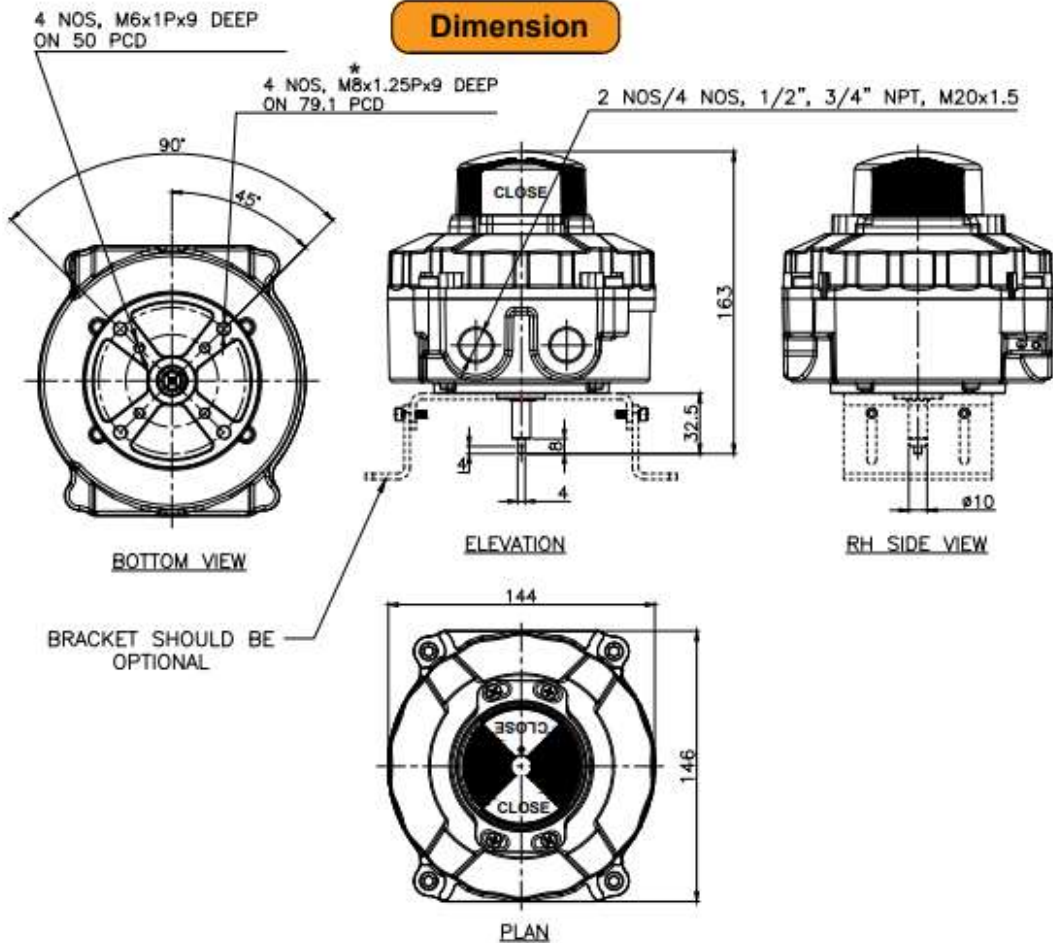


MLS5001

Wiring diagram



Dimension



* OPTIONAL : IF REQUIRED 5/16"-18 UNC THREADING CAN PROVIDE

LIMIT SWITCH BOX

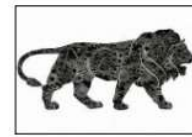
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MANUAL GEARBOX

PNEUMATIC ACTUATOR

VALVE AUTOMATION WITH ADAPTATION KIT

FIRE PROOFING SOLUTIONS



IS/IEC 60529 : 2001

M-torQ MLS series 5004 Weather proof Limit Switch box

Function

Limit switch boxes MLS-5004 SERIES are the compact solution when it comes to electrical feedback signals and monitoring the position of process valves which are actuated with pneumatic quarter turn actuators. They can be mounted directly without other accessories on quarter turn actuators with a mounting interface to VDI/VDE 3845. Direct mounting means that they require minimal space.

FEATURES

- Twin shaft design, ensuring a complete sealed device. The shaft is split into two parts, each fitted and sealed into the body and cover for the best weather insulation even during opening operation Copper free aluminium body and cover with polyester Powder coating
- All fasteners & Shaft in stainless steel
- Shatterproof Polycarbonate Dome
- Easily settable cam
- The locked Serrated cams, ensures the secured settings against any vibration
- The switch box confirms to IP 68 Upto 1m 30 minutes with lab certified as per IS/IEC 60529 : 2001
- Cable entry 1/2" NPT, M20x1.5
- Cable entry Dual cable entry
- A special PCB, eliminates all the wiring from the switch element to the terminals. Complete protection against short circuit.
- Standard Namur VDI/VDE-3845 Mounting
- Mounting as per ISO 5211
- Weight of Limit Switch Box Approx 0.51 Kg



LIMIT SWITCH BOX

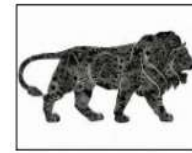
MANUAL OVERRIDE

MANUAL GEARBOX

PNEUMATIC ACTUATOR

VALVE AUTOMATION
WITH ADAPTATION KIT

FIRE PROOFING
SOLUTIONS



IS/IEC 60529 : 2001

M-torQ MLS series 5004 Weather proof Limit Switch box

- Two different designs available Fix bracket / Adjustable bracket
- All brackets are available in MS powder coated for general purpose and SS316 graded material for high corrosion resistance.
- IP 68 Up to 2m 1 hour with lab certified as per IS/IEC 60529 : 2001
- Limit switch box with plastic sticker
- Documentation : English standard.
- Dual language based on project (Option)
- Temperature range :
- Ambient Temperature: -20°C to +55°C (-4 to 131°F) (T6)
- Approvals : IP 68, SIL certified up to SIL 3 (Sensors)

DOME

Unique “two piece” dome arrangement. The black plastic makes the transparent dome an integral part. This ensure an extra long life.
Visual Indicator : Open Close multi angle top and side view RED and GREEN.
(RED and YELLOW option)



LIMIT SWITCH BOX

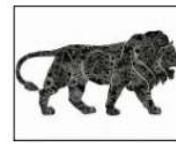
MANUAL OVERRIDE

MANUAL GEARBOX

PNEUMATIC ACTUATOR

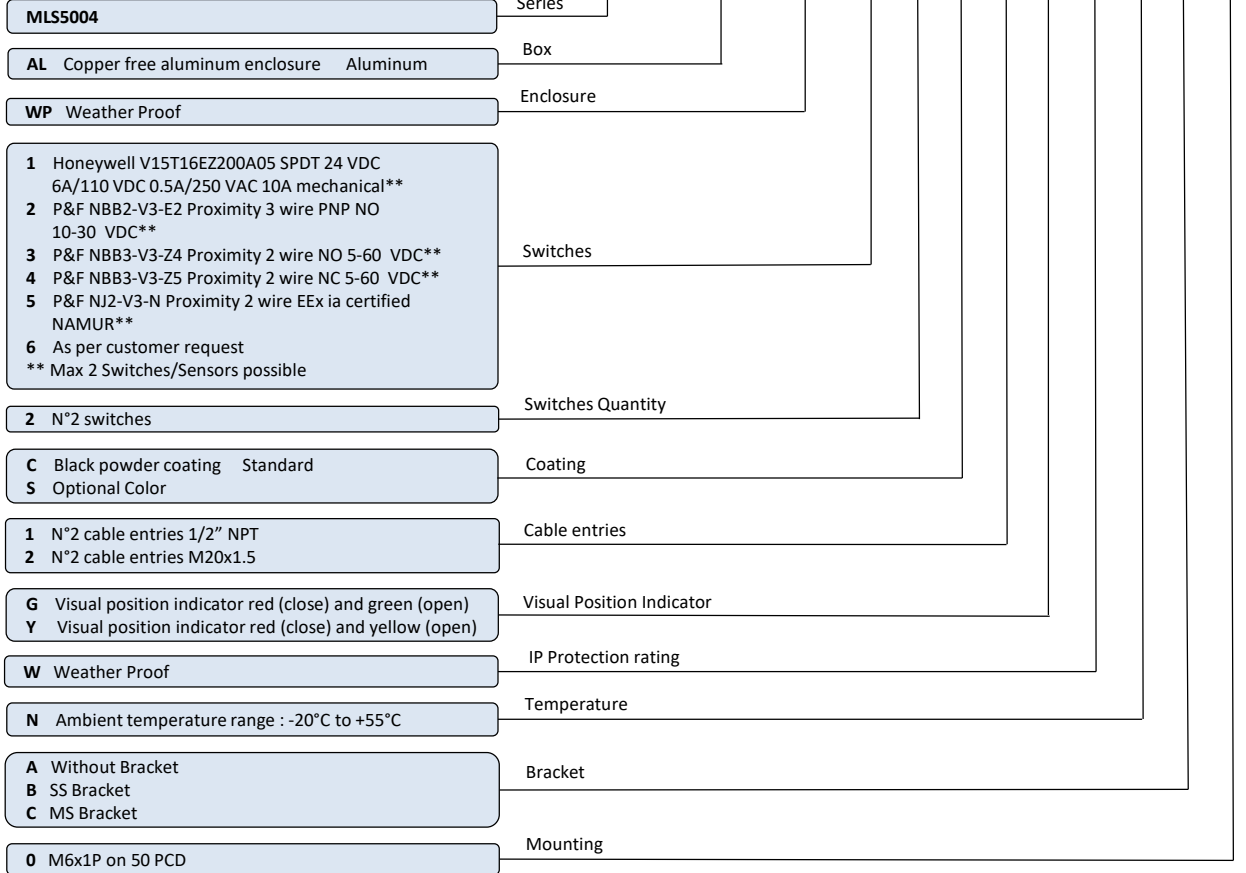
VALVE AUTOMATION
WITH ADAPTATION KIT

FIRE PROOFING
SOLUTIONS



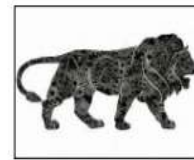
Product Ordering Matrix

Nomenclature



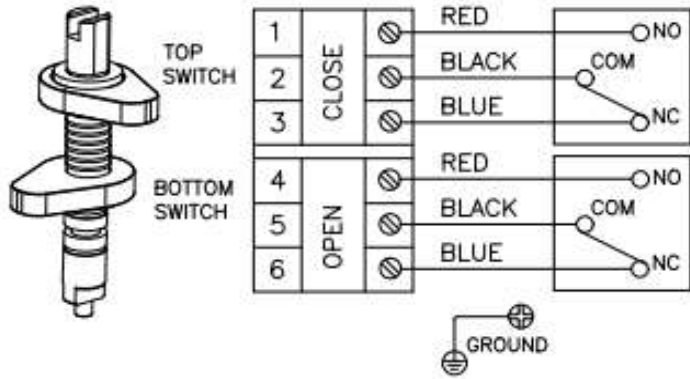
Ordering Code Example : **MLS5004ALWP12C1GWN A0**



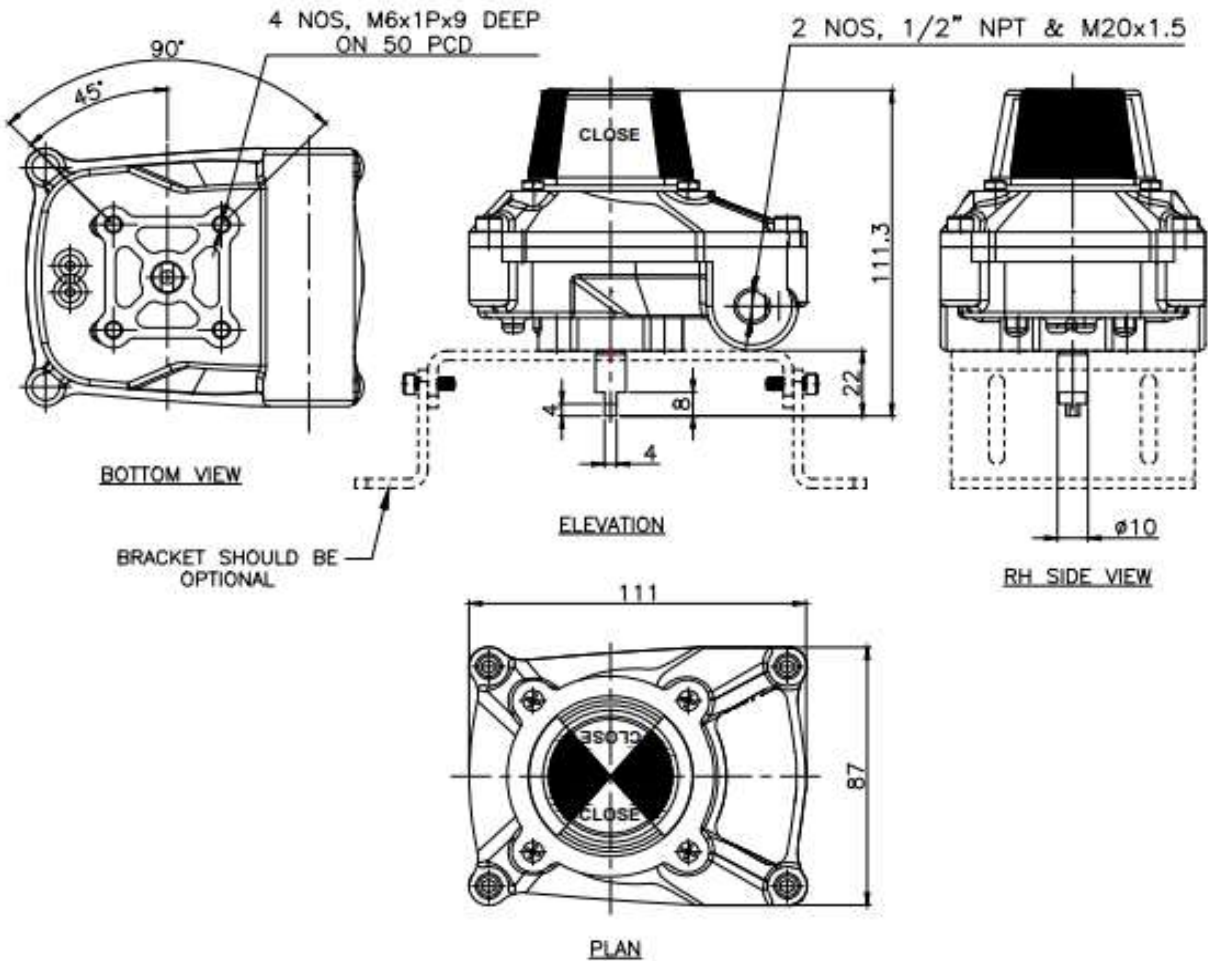


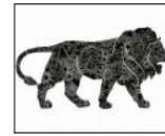
IS/IEC 60529 : 2001

MLS5004 **Wiring diagram**



Dimension





CERTIFICATES

ISO

TUV NORD

CERTIFICATE

Management system as per
ISO 9001 : 2015

M TORQ CONTROLS INDIA
Plot No. B-3 to E-10 MIDC, Pimpri Industrial Area,
Village Bhosari, MIDC, Pune-411 026
Maharashtra,
India

Design, Manufacture and Supply of Limit Switch, Gear Box & Actuator

Valid from 01.07.2021
Valid until 01.07.2024

Page 1 of 4

KLPL

Karandikar Laboratories

Ex

EQUIPMENT TYPE EXAMINATION REPORT

1) TE Report Number: KLPL/Ex/21/0801 issue no.00 Dated: 09-08-2021

2) Ex Equipment: Flameproof valve position indicator (Valve positioner limit switch)

3) Model: MLS-5001

4) Manufacturer: M-torQ Controls India
A.S.E.I.INDIA (Pvt) Ltd.
Pune-411026, Maharashtra, INDIA

5) This equipment and all acceptable variation thereto are specified in the schedule to this report and the documents therein referred to

6) Karandikar Laboratories Pvt. Ltd. reports that this equipment has been found to comply with requirements of the following standards relating to the design and construction of equipment for explosive gas/just atmospheres as applicable.

7) This TE Report was issued as verification that a sample, was assessed, tested and found to comply with the IEC standards listed below:
IS/IEC 60079-0:2017 and IS/IEC 60079-1:2014

8) The Examination and Test results are recorded in KLPL's confidential Report No. KLPL/Ex/21/0801 Dated: 09-08-2021

9) The sign 'X' placed after the TE report number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this TE Report.

10) This Report does not indicate compliance with electrical safety and performance requirements other than those expressly included in its scope listed standards.

11) The marking of the Equipment shall include the following:
Ex db IIC T4 Gb (-20 °C ≤ Ta ≤ 45 °C)

Page 1 of 4

BIS

PESO

भारतीय मानक बोर्ड
BUREAU OF INDIAN STANDARDS
मानक विभाग के उपरान्त के लिए अनुमति
Licence for the use of STANDARD MARK

भारतीय मानक बोर्ड
Licence No. CML- 7500323007

इस ब्यूरो, भारतीय मानक बोर्ड अधिनियम, 2016 (2016 का 11) द्वारा पदाधिकारियों के आदेश पर

मेरी एन-टीके इलेक्ट्रिकल प्रोडक्ट्स प्राइवेट लिमिटेड, एन-3, ए-10, 19, मिडिक, पंजाब रोड, बड़ोदरा, महाराष्ट्र, भारत, को

के निम्न प्रकार के उपकरणों पर अनुमति प्रदान की जा रही है जो भारतीय मानक बोर्ड के पहरेदारों के द्वारा जारी की गई हैं।

By virtue of the power conferred on it by the BUREAU OF INDIAN STANDARDS ACT, 2016 (11 of 2016) the BUREAU hereby grants to

M-torQ Controls India
B.S. E.I. INDIA, General Block, MIDC, Bhosari, Pimpri Chinchwad, DIST PUNE, MAHARASHTRA, INDIA, 411026

(hereinafter called the Licensee) this licence to use the Standard Mark set out in the first column of the Schedule hereto, upon or in respect of the articles set out in the third column of the said Schedule which is manufactured in accordance with/ conforms to the related Indian Standard(s) referred to in the second column of the said Schedule as from time to time amended or revised.

CRTU

ARAI IP 68 IS/IEC 60529 : 2001

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ
Еurasian Conformity Certificate

СЕРТИФИКАТ СООТВЕТСТВИЯ
№ EAC 03.001.2021.000527

Орган по сертификации: АРАИ (The Automotive Research Association of India)

Заявитель: M-torQ Controls India

Идентификационный номер: 03.001.2021.000527

Срок действия: с 03.08.2021 по 03.08.2024

ARAI
The Automotive Research Association of India

TEST REPORT
Non-Transferable

TEST REPORT NO. SHL/16/2020-2021/3000015561/RT/0354 Date: 03.02.2021

1.0 NAME AND ADDRESS OF THE CUSTOMER
M-torQ Controls India
Plot No. B-3/E-10, 19 MIDC Industrial Area, Bhosari, Pune-411026

2.0 CUSTOMERS LETTER REF
E-mail Dated: 28.07.2021

3.0 DESCRIPTION OF TEST COMPONENT:
a. Name of The Component: Valve Position Monitor (Limit Switch)
b. Name of The Manufacturer: M-torQ Controls India
Plot No. B-3/E-10, 19 MIDC Industrial Area, Bhosari, Pune-411026
c. Identification no./ Part No.: MLS-5004
d. Assembly Drawings No. with Rev. No.: MLS-5004 GAD, REV. NO.0

f. Photograph of The Component

4.0 TEST OBJECTIVE, REQUIREMENTS:
To carry out the IP-68 protection test as per IS/IEC 60529:2001.

4.1 Dust Test for First Numeral '6':
On inspection after the test as per Clause 13.6 of IS/IEC 60529:2001, there should be no deposit of dust inside the enclosure.

4.2 Water Test for Second Numeral '8':
On inspection after the test in accordance with the requirements as per Clause 14.2.7 and 14.3 of IEC 60529, water entered inside the equipment shall not:
> Be sufficient to interfere with satisfactory operation of the equipment.
> Reach live parts or windings not designed to operate when wet.
> Accumulate near the conduit hole (cable entry) or enter the cable.

5.0 TEST PROCEDURE:
5.1 Dust Test for First Numeral '6' (as per Clause 13.6 of IS/IEC 60529:2001):
> The equipment under test was supported inside the test chamber and the pressure inside the equipment was maintained below atmospheric pressure by a vacuum pump.
> During the test, a minimum 80 times the volume of air was drawn into the enclosure, without exceeding an extraction rate of 60 volumes per hour or a depression of more than 200 mm of water on the manometer. The test was carried out by using apparatus incorporating the principle shown in Figure 2 of IS/IEC 60529:2001. The test was stopped after 2 h.

5.2 Water Test for Second Numeral '8' (as per Clause 14.2.7 of IEC 60529):
> The test was carried out by completely immersing the enclosure in the water for 30 minutes at a depth of 1 meter from the surface of the water.

ARAI
The Automotive Research Association of India

TEST REPORT NO. SHL/16/2020-2021/3000015561/RT/0354

6.0 TEST RESULTS:
6.1 Dust Test for First Numeral '6':
No dust ingress was observed inside the 'MLS-5004'

6.2 Water Test for Second Numeral '8':
No water ingress was observed inside the 'MLS-5004'

7.0 Test Duration: Start Date: 03.02.2021 End Date: 03.02.2021

8.0 CONCLUSION:
'MLS-5004' as mentioned in Sr. no. 3 of this report, meet the IP 68 protection test requirements when tested as per IS/IEC 60529:2001.

DISCLAIMER:
1. ARAI issues Test Reports / Extension Reports / Developmental Test Reports for vehicular components/parts/ assemblies etc. based on the documents provided and/or prototype vehicles or samples submitted by the applicant and testing thereof.
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The appropriate local courts at Pune shall have the jurisdiction in respect of any dispute, claim or liability arising out of this certificate / Report.

PREPARED BY: S. N. LONHARE, ENGINEER
CHECKED BY: A.D. DEKATE, DEPUTY GENERAL MANAGER
APPROVED BY: U.A. KULKARNI, DEPUTY DIRECTOR-SHL

Place of Issue: PUNE Date of Issue: 03/02/21

Corporate & Factory address
M-torQ Controls India
Plot No. B-3, E-10, 19 Industrial Area MIDC Bhosari.
PUNE -411026 (Maharashtra INDIA)
Phone: +91 20 27400989.99
Mobile: +91 9422007317
E-mail: sales@mtorqindia.com;
mtorqindia@gmail.com

Distributor & dealer

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LIMIT SWITCH BOX

MANUAL OVERRIDE

MANUAL GEARBOX

PNEUMATIC ACTUATOR

FIRE PROOFING SOLUTIONS

W/TH ADAPTATION KIT