

Limit Switch Box APL-3 for General Purpose



Features

- Aluminum die-cast, compact size, and light weight
- High corrosion resistance due to double chromate treatment and polyester powder coating.
- Double sealed dome indicator that prevents water ingress in case of a dome failure.
- With spring loaded cams, limit positions can be easily set without tools.
- Upto 4 mechanical switches or proximity sensors

Certificates and approvals

- EAC
- SIL 2 (SC 3)
- S mark
- ABS type approval
- RMRS type approval
- RINA type approval

CE EAC SIL ABS RINA IP67



Specification

Standard Specification

Enclosure	Weatherproof enclosure IP67, type 4X High grade aluminium alloy, chromate treated twice & polyester powder coated
Travel angle	0 - 90 °
Ambient temperature	-20 to +80 °C
Cable entry	2 x PF1/2", 2 x NPT1/2", 2 x M20
Switches	2 x mechanical switches or proximity sensors
Terminal points	8 points
Weight	0.5 kg (without bracket)
Indicator	2-way yellow (open) / red (close) 2-way green (open) / red (close)
Bracket	Stainless steel 304, MBP-100 (30 x 80, H:20)
Coating (color)	● Black (RAL 9005), ● Red (RAL 3001), ● Blue (RAL 5005), ● Yellow (RAL 1033), ● Grey (RAL 7046), ● Green (RAL 6034)

Optional Specification

Enclosure rating	WTA Watertight enclosure actuator (IP68 10 m 72 hr)
Travel angle	0 - 120°, 135°
Ambient temperature	LT low temperature: -40 to +60 °C, HT high temperature: -20 to +150 °C (APL-6 series)
Switches	4 x mechanical switches or proximity sensors
Terminal points	10, 12, 14 points
Control	PIU Potentiometer (1 kΩ, 10 kΩ) CPT Current Position Transmitter (output: 4 - 20 mA dc)
Indicator	L-port 3-way yellow (open) / red (close), L-port 3-way green (open) / red (close) T-port 3-way yellow (open) / red (close), T-port 3-way green (open) / red (close)
Bracket	Stainless steel 304 or 316, MBP-050 (25 x 50, H:20), MBP-200 (30 x 80, H:30), MBP-300 (30 x 130, H:30), MBP-400 (30 x 130, H:50) Carbon steel (C) or stainless steel 304 (S), MBP-O-1(30 x 80, H:20), MBP-O-2 (30 x 80, H:30), MBP-O-3 (30 x 130, H:30), MBP-O-4 (30 x 130, H:50)
Coating (color)	● Other colors , ○ Nano coating (for corrosive environment)

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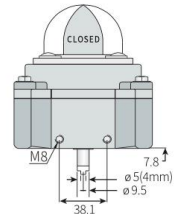
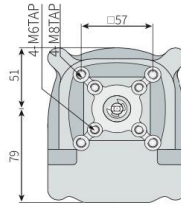
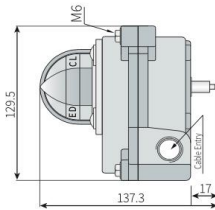
Switches

	Arrangement 2-SPDT (standard) 3-SPDT (except APL-2 & 9) 4-SPDT (except APL-2 & 9)	Ratings 16 A, 125/250 V ac 0.3 A, 250 V dc 0.5 A, 135 V dc 10 A, 30 V dc	Service life Min. 1,000,000 operations (mechanical) Min. 10,000 operations (electrical)	Operating frequency 120 operations / min (mechanical) 10-30 operations / min (electrical)
	Arrangement 2-DPDT (except APL-2 & 9)	Ratings 10 A, 125/250 V ac 10 A, 30 V dc 0.5 A 125 V dc 0.25 A 250 V dc	Service life Min. 1,000,000 operations (mechanical) Min. 50,000 operations (electrical)	Operating frequency 240 operations / min (mechanical) 20 operations / min (electrical)
	Arrangement 2-DPDT (except APL-2 & 9)	Ratings 20 A, 125/250 V ac 0.5A, 250V dc	Service life Min. 6,000 operations (electrical)	Operating frequency

Proximity Sensors

	P&F. NJ2V3-N (intrinsically safe) Inductive proximity sensor Voltage range: 8 V dc Sensing range: 2 mm		Autonics. PS17-5DNU Inductive proximity sensor Voltage range: 10-30 V dc Sensing range: 5 mm (except APL-2 & 9)
	P&F. NBB2-V3-Z4/Z5 Inductive proximity sensor Voltage range: 5-60 V dc Sensing range: 3 mm	Other sensors NBB2-V3-E2/E3(PNP): 10-30 V dc NBB2-V3-E0(NPN): 10-30 V dc	APL-4 proximity sensors NJ2-12GM-40-E 2: 10-60 V dc NJ4-12GM-40-E 2: 10-60 V dc NBB2-12GM-40: 6-60 V dc

APL-3



STANDARD NAMUR SHAFT

Brackets

Shape			
Model	MBP-50 (25 x 50 H:20) MBP-100 (30 x 80 H:20) MBP-200 (30 x 80 H:30) MBP-300 (30 x 130 H:30) MBP-400 (30 x 130 H:50)	MB-P-O-1C (30 x 80 H:20) MB-P-O-1S (30 x 80 H:20) MB-P-O-2C (30 x 80 H:30) MB-P-O-2S (30 x 80 H:30)	MB-P-O-3C (30 x 130 H:30) MB-P-O-3S (30 x 130 H:30) MB-P-O-4C (30 x 130 H:50) MB-P-O-4S (30 x 130 H:50)

※The last letter of the model name: C means carbon steel plate, S means stainless steel plate.

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Ordering Information

APL - 3 10 N

Model (Enclosure shape)

- 2: Standard (IP67, NEMA 4, 4X)
- 3: Standard (IP67, NEMA 4, 4X)
- 4: Flameproof (Ex db IIB T5, Cl.I, Div.1, Gr.C,D, IP67, NEMA 4X, 6)
- 5: Flameproof (Ex db IIC T6, Cl.1, Div.1, Gr.B,C,D, IP67, Cl.II, Div.1, Gr.E,F,G, Cl.III, NEMA 4X, 6)
Dust ignition proof (Ex tb IIIC T85°C)
Intrinsic safety (Ex ia IIC T6) with proximity sensor (option); APL-520 only
- 7: Flame proof (Ex db IIC T5) with solenoid valve
- 8: Flame proof (Ex db IIC T6) with 4 cable entries
- 9: 304 Stainless steel (IP67)

Switch type

Mechanical switch

- 10 2-SPDT
- 11 3-SPDT
- 12 4-SPDT
- 13 2-SPST
- 14 2-DPDT
- 15 2-SPDT + Potentiometer
- 16 2-SPDT + Signal unit(4-20 mA)
- H1 2-SPDT (-50 to +60°C) Honeywell 11SX22-T (APL-5 only) [CSA]
- H2 2-SPDT (-50 to +60°C) Honeywell Gold plated 12SX1-T (APL-5 only) [CSA]
- H3 2-SPDT (-50 to +60°C) Honeywell Gold plated 13SX21-T (APL-5 only) [CSA]
- H4 4-SPDT (-50 to +60°C) Honeywell 11SX22-T (APL-5 only) [CSA]
- H5 4-SPDT (-50 to +60°C) Honeywell Gold plated 12SX1-T (APL-5 only) [CSA]
- H6 4-SPDT (-50 to +60°C) Honeywell Gold plated 13SX21-T (APL-5 only) [CSA]

Proximity sensor


- 20 P&F. NJ2-V3-N
- 21 Autonics. PS17-5DNU
- 22 P&F. NJ4-12GM-N
- 23 P&F. NBB2-V3
- 25 P&F. NJ2-V3-N + Potentiometer
- 26 P&F. NJ2-V3-N + CPT(4-20 mA)

Reed type proximity sensor

- 30 MS-B 301 / MK21-85 (CSA)
- 31 MK21-66 (CSA)
- 32 MK21-90 (CSA)
- 34 APH-634W
- 35 APH-933W
- 36 APH-27103

Enclosure Material

- N : Non-ferrous metal
- S : Stainless steel (304, 316, 316L)
[APL-5, 8 & 9 only]

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韓國HKC原廠 SIL CSA國際認證 品質有保障



FUNCTIONAL SAFETY CERTIFICATE

This is to certify that the

APL Series Valve Position Monitor

manufactured by

HKC Co. Ltd.
26, Embellu 28-ro,
Siheung-si,
Gyeonggi-do, 425-836
Republic of Korea

have been assessed by Sira Certification Service with reference to the CASS methodologies and found to meet the requirements of

IEC 61508-2:2010 Routes 1_H & 1_S Systematic Capability (SC3)

as an element/subsystem suitable for use in safety related systems performing safety functions up to and including

**SIL 2 capable with HFT=0 (1oo1)*
SIL 3 capable with HFT=1 (1oo2)***

when used in accordance with the scope and conditions of this certificate.

* This certificate does not waive the need for further functional safety verification to establish the achieved Safety Integrity Level (SIL) of the safety related system

Certification Decision: *James Lynskey*
James Lynskey

Initial Certification : 04/03/2021
This certificate re-issued : 03/02/2025
Renewal date : 03/02/2025
This certificate may only be reproduced in its entirety, without any change.



Certificate No.: Sira PSP 20007 / 00
Form 7016 Issue 4
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Sira Certification Service
Part of CSA Group UK
Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3JG, United Kingdom
Tel: +44 (0) 1244 070900
Email: ukinfo@casgroup.org
Web: www.casgroupuk.org



Certificate of Compliance

Certificate: 2673306 Master Contract: 249581
Project: 70148144 Date Issued: 2017-09-26
Issued to: **HKC Co., Ltd**
Seongbuk-Dong 155
Byeolmang-ro, Danwon-gu
Ansan-si, Gyeonggi-do 425-836
SOUTH KOREA
Attention: JY Bak

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: **Wardell Dumas**
Wardell Dumas

PRODUCTS

CLASS - C322102 - VALVES-General purpose Actuators
CLASS - C322182 - VALVES-Actuators - Certified to US Standards

APL2xxN series, Type 4X

xx =	Electrical
10, 13	250Vdc max, 5.6A max
20	8.2Vdc, 0-100mA
23	5-60Vdc, 4-100mA

APL3xxN series, Type 4X

xx =	Electrical
10 - 16	250Vdc max, 5.6A max
20	8.2Vdc, 0-100mA
23	5-60Vdc, 4-100mA
30	200Vdc max, 1.5A max

Note: Not intended for direct connection with motor(s).

APPLICABLE REQUIREMENTS

C22.2 No 139-13 Electrically Operated Valves
ANSI/UL 429 (7th Ed) Electrically Operated Valves
C22.2 No 94-1-15/UL 50 (13th Ed) Enclosures for Electrical Equipment, Non-environmental Considerations
C22.2 No 94-2-15/UL 50E (2nd Ed) Enclosures for Electrical Equipment, Environmental Considerations

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