

# VALVE POSITION MONITOR

## Limit Switch Box

# APL-2 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 indicator that prevents water ingress in case of a dome failure.
- With spring loaded cams, limit positions can be easily set without tools.



### Certificates and approvals

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










### 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)
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°
Indicator	<b>L-port</b> 3-way, yellow (open) / red (close) <b>L-port</b> 3-way, green (open) / red (close) <b>T-port</b> 3-way, yellow (open) / red (close) <b>T-port</b> 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)
Coating (color)	● Other colors, ○ Nano coating (for corrosive environment)

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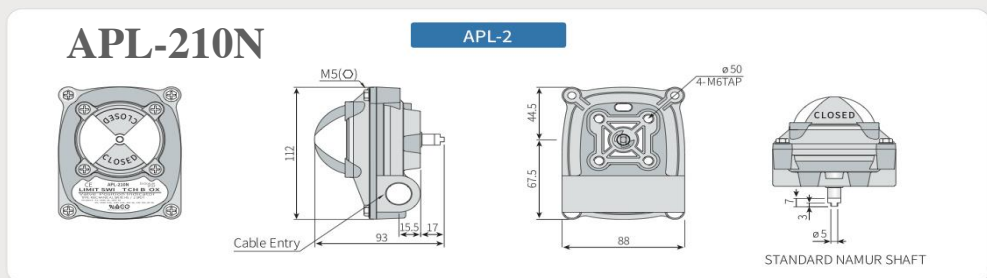
## Switches

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

## Proximity Sensors

	<b>P&amp;F. NJ2V3-N (intrinsically safe)</b> Inductive proximity sensor Voltage range: 8 V dc Sensing range: 2 mm		<b>Autonics. PS17-5DNU</b> Inductive proximity sensor Voltage range: 10-30 V dc Sensing range: 5 mm (except APL-2 & 9)
	<b>P&amp;F. NBB2-V3-Z4/Z5</b> Inductive proximity sensor Voltage range: 5-60 V dc Sensing range: 3 mm	<b>Other sensors</b> NBB2-V3-E2/E3(PNP): 10-30 V dc NBB2-V3-E0(NPN): 10-30 V dc	<b>APL-4 proximity sensors</b> 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

## Dimensional Drawing



## Brackets

<b>Shape</b>			
<b>Model</b>	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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**APL - 2 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, Embbeul 28-ro,  
Sheung-si,  
Gyeonggi-do,  
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 1s & 1s**  
**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 (1001)\***  
**SIL 3 capable with HFT=1 (1002)\***

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 : 03/03/2025  
Renewal date : 03/03/2025  
This certificate may only be reproduced in its entirety, without any change.



Certificate No.: Sira FSP 20007 / 00  
Form 7016 Issue 4  
Page 1 of 5



Sira Certification Service  
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Web: [www.csagroupuk.org](http://www.csagroupuk.org)




## Certificate of Compliance

Certificate: 2673306      Master Contract: 249581  
Project: 70148144      Date Issued: 2017-09-26

Issued to: **HKC Co., Ltd**  
Seonggok-Dong 155  
Byeolmang-ro, Daewon-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.*



CSA  
US

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		APL3xxN series, Type 4X	
xx =	Electrical	xx =	Electrical
10, 13	250Vac max, 5.6A max	10 - 16	250Vac max, 5.6A max
20	8.2Vdc, 0.100mA	20	8.2Vdc, 0.100mA
23	5.60Vdc, 4.100mA	23	5.60Vdc, 4.100mA
30	200Vdc max, 1.5A max	30	200Vdc max, 1.5A max

Note: Not intended for direct connection with motors).

**APPLICABLE REQUIREMENTS**

C22.2 No 139-13 ANSU/UL 429 (2 <sup>nd</sup> Ed)	Electrically Operated Valves
C22.2 No 94.1-15/UL 50 (13 <sup>th</sup> Ed)	Electrically Operated Valves
C22.2 No 94.2-15/UL 50E (2 <sup>nd</sup> Ed)	Enclosures for Electrical Equipment, Non-environmental Considerations
	Enclosures for Electrical Equipment, Environmental Considerations

D301 507 Rev. 2016-02-18 Page 1



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