



- Illuminated or non-illuminated
- Tactile feedback
- Wide variety of configurations
- Flat round actuator for optional marking
- Sealed to IP67

ENVIRONMENTAL SPECIFICATIONS

- Front panel sealing : IP67 according to IEC 60529
IP69K according to DIN 40050-9 (non-illuminated) with cap U5125
- Shock resistance : 100 g according to IEC 512-4, test 6c
- Vibration resistance : 10-500Hz - 10 g according to IEC 512-4, test 6d
- Salt spray : IEC 512-6, test 11f
- Robustness (non-illuminated) : IK06 according to EN 50102 (1 joule)
- Operating temperature : -40°C to +85°C

ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load (gold plated silver contacts):
5A 28VDC, 70.000 cycles
0,2A 48VDC, 500.000 cycles
0,5A 48VAC, 500.000 cycles
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 1.500 Vrms
- Contact bounce : 10 ms

LED COMPONENT SPECIFICATIONS

| LED colour | Forward current | Typ. forward voltage | Max. forward voltage |
|-----------------|-----------------|----------------------|----------------------|
| Super red (LOS) | 20mA | 2,1V | 2,3V |
| Yellow (LOY) | 20mA | 2,1V | 2,3V |
| Green (LOG) | 20mA | 2,1V | 2,3V |
| Blue (LOB) | 20mA | 3,2V | 3,8V |
| White (LOW) | 20mA | 3,35V | 4,25V |

A resistor must be series-connected by the user.
Resistor value = $\frac{\text{supply voltage} - \text{LED forward voltage}}{\text{LED forward current}}$

GENERAL SPECIFICATIONS

- Panel thickness : 1,5 mm (.059) min.
4 mm (.157 max.)
- Total travel :
Funct. 3 : 1,7 mm (.067) +/- 0,3 mm
Funct. 5 : 1,3 mm (.051) +/- 0,3 mm
- Typical operating force : 6N +/- 2N
- Low level/mech. life : 1.000.000 cycles
- Torque : 1,5 Nm max. applied to nut
- Soldering : 320°C max. for 3 sec.

MATERIALS

- Case : thermoplastic UL94-V0
- Actuator : polyamide 6/6
- Bushing/bezel : zinc die-cast (zamac), black painted
- Contacts : silver, gold plated (std) brass, gold plated (for option 104)
- Multi-wire lead AWG20, section 0,6 mm²
- LED wire : AWG26, section 0,12 mm²
- Lens : polycarbonate
- Terminal seal : epoxy

AGENCY APPROVAL



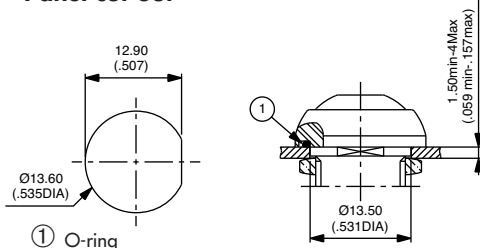
2A 125VAC/250VAC
File E83438

Availability : consult factory for details of approved models.

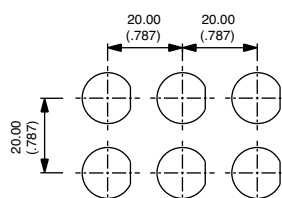
Marking : to order switches marked UL, complete ordering format.

MOUNTING

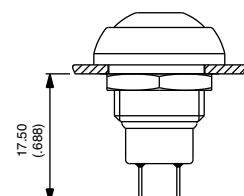
Panel cut-out



Matrix mounting



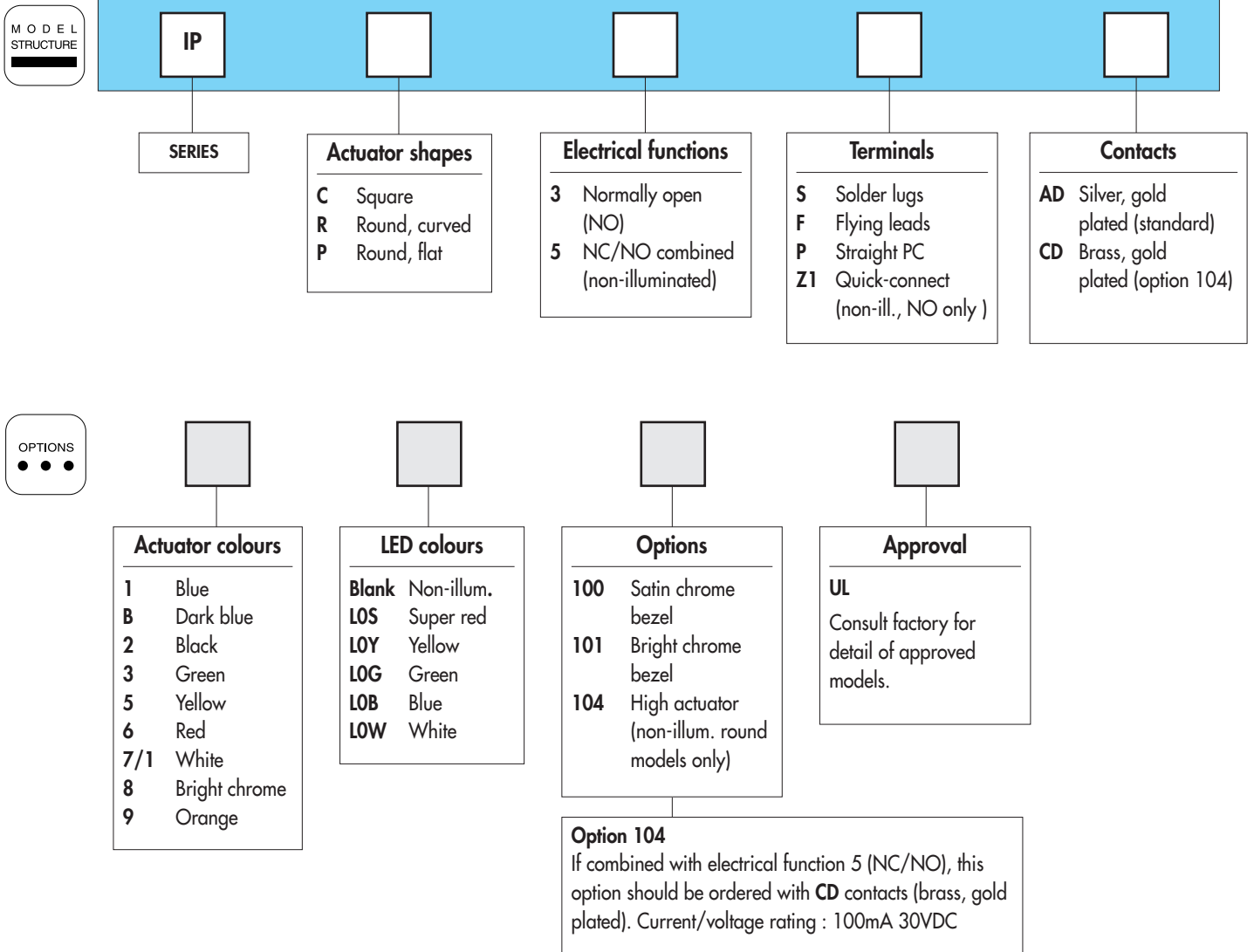
Back of panel space requirement



IP series

Pushbutton switches for harsh environments - bushing Ø 12 mm - momentary

Overview



ABOUT THIS SERIES

On the following pages, you will find successively :
model structure of switches and options in the same order as in above chart

Dimensions : first dimensions are in mm while inches are shown as bracketed numbers.



NOTICE : please note that not all combinations of above numbers are available. Refer to the following pages for further information.



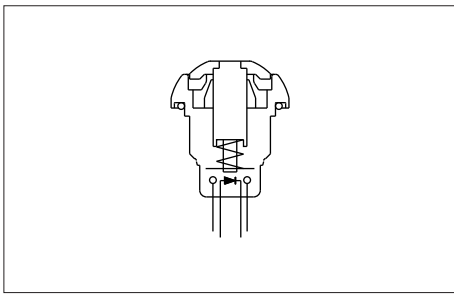
A sealing boot is available to protect the switches against frost and sand. It is presented after the IA series and in section H.



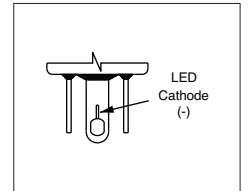
Mounting accessories : Standard hardware supplied : 1 hex nut 14 mm (.551) across flats and 1 O-ring. Hex nut part number U166.



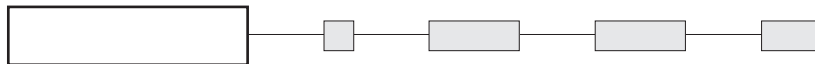
Packaging unit : 25 pieces



- High brightness illumination
- Five LED colours
- Tin plated LED terminals



MODEL STRUCTURE



B1

Solder lug terminals



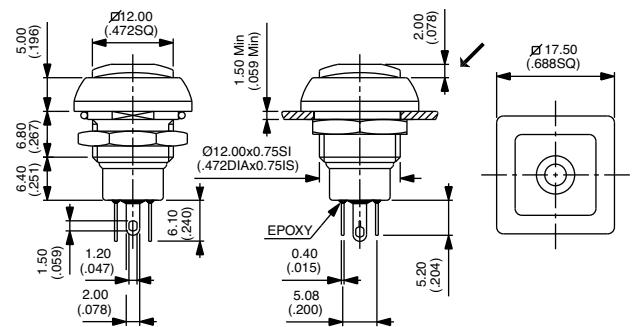
IPC3SAD



Normally Open

Also available with straight PC terminals : **IPC3PAD**
LED colour is indicated by the bottom of the switch.

→ Flat



Sealed flying lead terminals

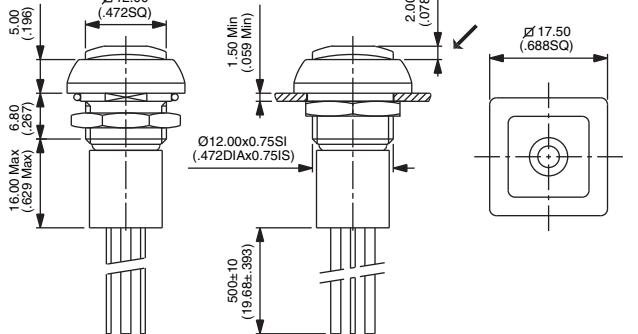


IPC3FAD



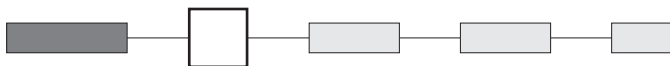
Normally Open

→ Flat



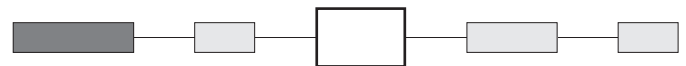
Wire colours : black : NO contact, red : LED anode(+), blue : LED cathode(-)

ACTUATOR COLOURS



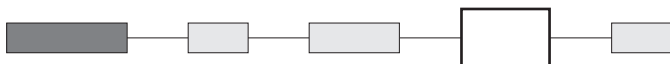
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow
6 : red - 7/1 : white - 8 : bright chrome - 9 : orange

LED COLOURS



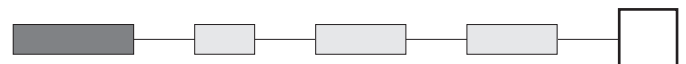
LOS : super red - LOY : yellow - LOG : green - LOB : blue
LOW : white

OPTIONS



100 : Satin chrome bezel
101 : Bright chrome bezel

APPROVAL



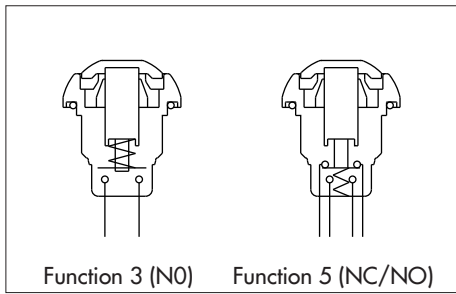
UL

Consult factory for details of approved models. To order switches marked UL, complete above box with "UL".

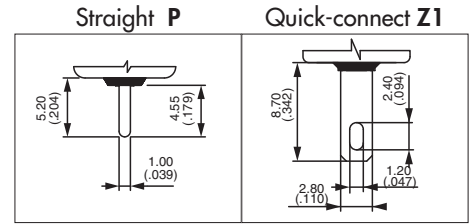
IP series

Pushbutton switches for harsh environments - bushing \varnothing 12 mm - momentary

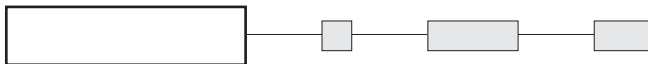
Square - non-illuminated



- Double function (NC/NO combined) with a short behind-panel depth



MODEL STRUCTURE



B1

Solder lug terminals



IPC3SAD



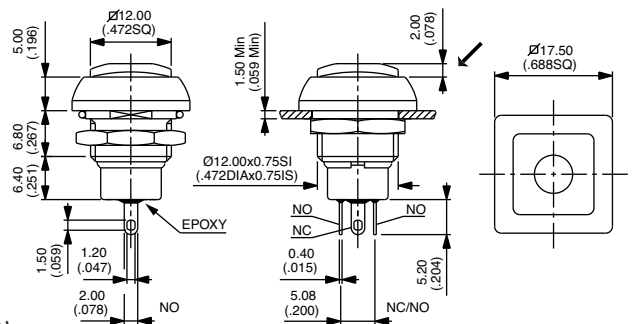
Normally Open

IPC5SAD



NC/NO combined

→ Flat



Also available with straight PC terminals : **IPC3PAD** (NO) or **IPC5PAD** (NC/NO) and quick-connect terminals : **IPC3Z1AD** (NO only)

Sealed flying lead terminals



IPC3FAD



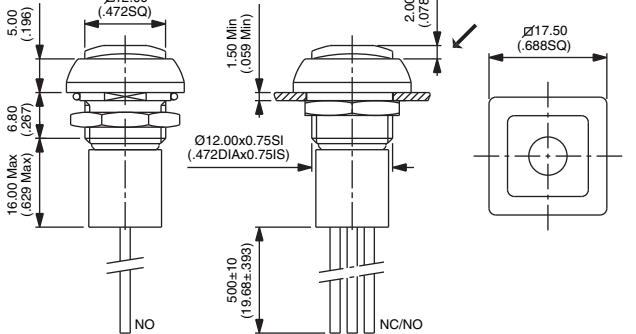
Normally Open

IPC5FAD



NC/NO combined

→ Flat



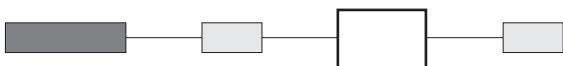
Wire colours (NC/NO) : black : NO, blue : NC

ACTUATOR COLOURS



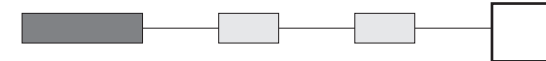
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7/1 : white - 8 : bright chrome - 9 : orange

OPTIONS



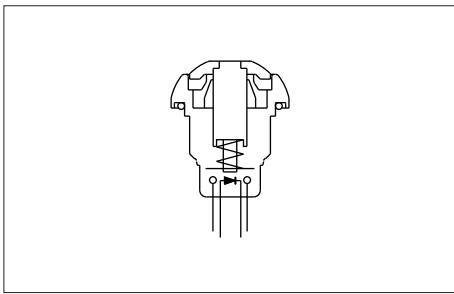
100 : Satin chrome bezel
101 : Bright chrome bezel

APPROVAL

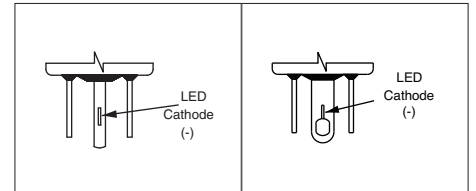


UL

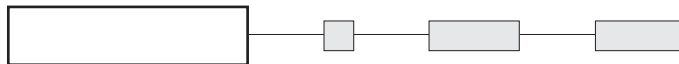
Consult factory for details of approved models. To order switches marked UL, complete above box with "UL".



- High brightness illumination
- Five LED colours
- Tin plated LED terminals



MODEL STRUCTURE



Solder lug terminals

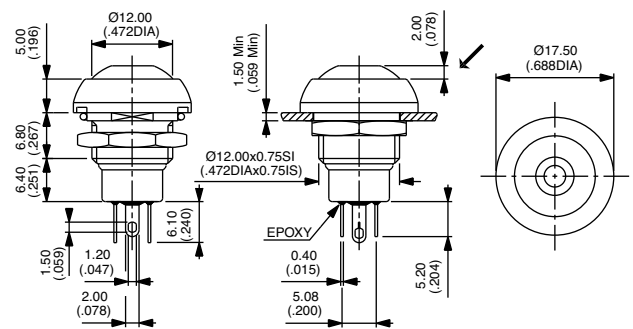


IPR3SAD



Normally Open

→ Flat



Also available with straight PC terminals : IPR3PAD
LED colour is indicated by the bottom of the switch.

Sealed flying lead terminals

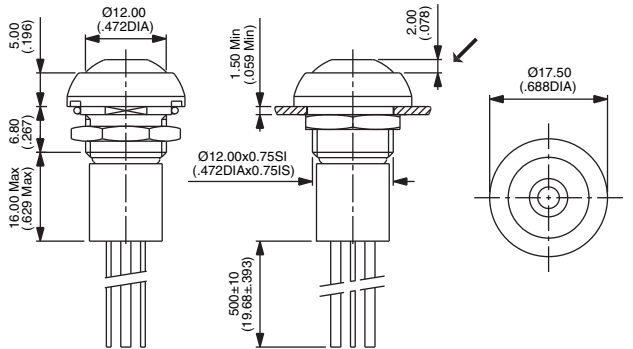


IPR3FAD



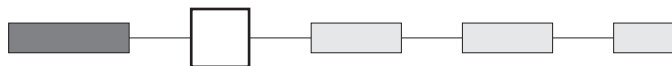
Normally Open

→ Flat



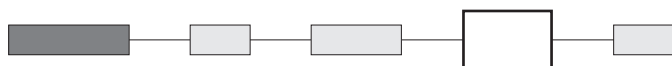
Wire colours : black : NO contact, red : LED anode(+), blue : LED cathode(-)

ACTUATOR COLOURS



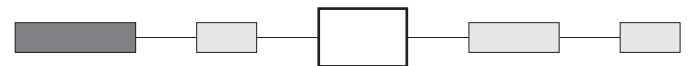
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow
6 : red - 7/1 : white - 8 : bright chrome - 9 : orange

OPTIONS



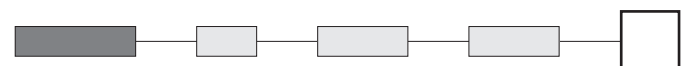
100 : Satin chrome bezel
101 : Bright chrome bezel

LED COLOURS



LOS : super red - LOY : yellow - LOG : green - LOB : blue
LOW : white

APPROVAL



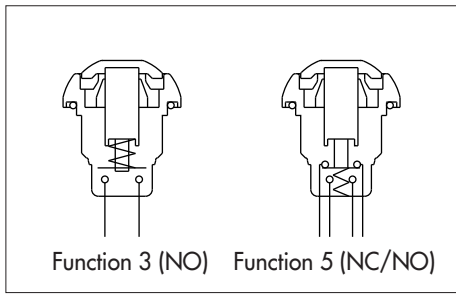
UL

Consult factory for details of approved models. To order switches marked UL, complete above box with "UL".

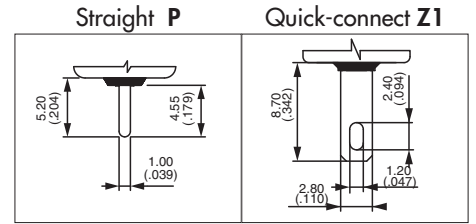
IP series

Pushbutton switches for harsh environments - bushing \varnothing 12 mm - momentary

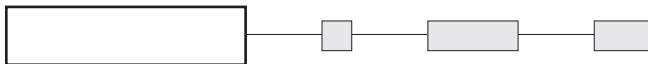
Round - non-illuminated



- Double function (NC/NO combined) with a short behind-panel depth



MODEL STRUCTURE

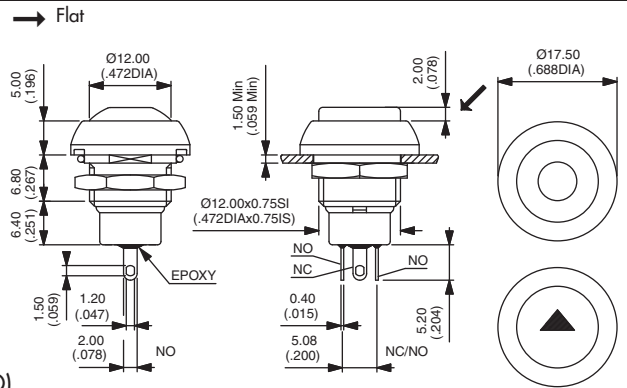


Actuator marking available on IPP models (symbol 10 mm max.). On request.

Solder lug terminals



- Curved actuator, NO
IPR3SAD
- Curved actuator, NC/NO
IPR5SAD
- Flat actuator, NO
IPP3SAD
- Flat actuator, NC/NO
IPP5SAD

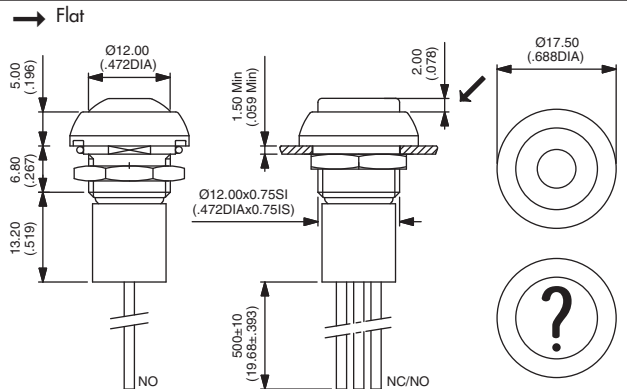


Also available with straight PC terminals : **IP•3PAD** (NO) or **IP•5PAD** (NC/NO) and quick-connect terminals : **IP•3Z1AD** (NO only)

Sealed flying lead terminals



- Curved actuator, NO
IPR3FAD
- Curved actuator, NC/NO
IPR5FAD
- Flat actuator, NO
IPP3FAD
- Flat actuator, NC/NO
IPP5FAD



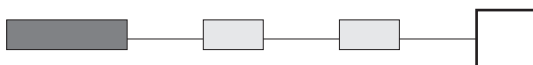
Wire colours (NC/NO) : black : NO, blue : NC

ACTUATOR COLOURS



1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow
6 : red - 7/1 : white - 8 : bright chrome - 9 : orange

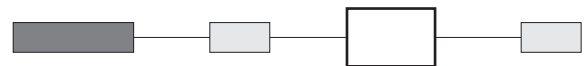
APPROVAL



UL

Consult factory for details of approved models. To order switches marked UL, complete above box with "UL".

OPTIONS



100 : Satin chrome bezel
101 : Bright chrome bezel
104 : High actuator - If combined with function 5 (NC/NO), order with CD contacts (instead of AD contacts).

