

# Metal enclosures

## Position switches Metal M49

**NEW**



### Product characteristics

- Flat and compact design
- Pre-installed connecting cable (1m length) for quick and easy installation
- Top-mounting versions available
- Cable or M12-connector outlet on the side or at the bottom
- High protection class IP67
- Suitable for safety applications according to DIN EN 60947-5-1 (positive break)

### Good to know ...

Due to the space-saving enclosures and the high protection class IP67 the position switches of the M49 series are perfect for an installation where a flat design and a high protection class of IP67 is required. The switches are often used for the monitoring of covers and inspection doors, for position monitoring applications and similar applications. The high protection class allows outdoor applications.

### Options

- Different cable lengths are available on request

## Technical design

- Slow- and snap action
- **Versions:** 1 NC/1 NO, 2 NC, 2 NO, 2 NC/2 NO

## Technical data

| Electrical data                                |            |  |
|--|------------|--|
| Design insulation voltage                      | $U_i$ max. | 400 V AC   |
| Conventional thermoelectric current            | $I_{the}$  | 10 A   |
| Rated operating voltage                        | $U_e$ max. | 240 V  |
| Utilisation category                           |            | AC-15; 24 V / 10 A; 240 V / 3 A                  |
| Protection class                               |            | II, protective insulation                        |
| Mechanical data                                |            |  |
| Ambient temperature                            |            | -25 °C to +70 °C (connecting cable firmly wired) |
| Mechanical lifetime                            |            | 10 x 10 <sup>6</sup> switching cycles            |
| Switching frequency                            |            | ≤ 60/min.  |
| Type of connection                             |            | Cable 4 x 0.75 mm <sup>2</sup>                   |
| Protection class                               |            | IP67 conforming to IEC/EN 60529                  |
| Standards                                      |            |  |
| VDE 0660 T100, DIN EN 60947-1, IEC 60947-1     |            |  |
| VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1 |            |  |

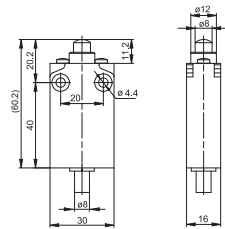
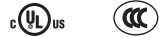
## Application examples

- Position monitoring of moving parts
- Object detection in conveying technology
- End position control of components
- Position monitoring on rolling doors
- Monitoring of sliding doors



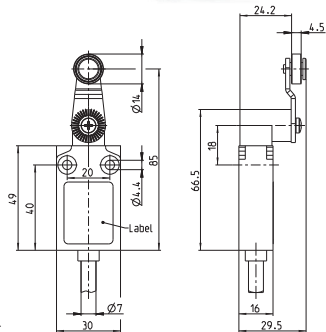
# POSITION SWITCHES METAL M49

## M49-... IW



|                     | 1 NC / 1 NO<br>Snap-action            | 1 NC / 1 NO<br>Slow-action           | 2 NC<br>Slow-action                  | 2 NO<br>Slow-action                 | 2 NC / 2 NO<br>Slow-action       |
|---------------------|---------------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|----------------------------------|
| Switching diagram   |                                       |                                      |                                      |                                     |                                  |
| Cable outlet right  | <b>602300001</b><br>M49-SU1Z IW       | <b>602300003</b><br>M49-U1Z IW       | <b>602300005</b><br>M49-A2Z IW       | <b>602300007</b><br>M49-E2 IW       | <b>602300009</b><br>M49-U2Z IW   |
| Cable outlet below  | <b>602300002</b><br>M49-SU1Z IW Z     | <b>602300004</b><br>M49-U1Z IW Z     | <b>602300006</b><br>M49-A2Z IW Z     | <b>602300008</b><br>M49-E2 IW Z     | <b>602300010</b><br>M49-U2Z IW Z |
| M12 connector right | <b>602300011</b><br>M49-SU1Z IW M12   | <b>602300013</b><br>M49-U1Z IW M12   | <b>602300015</b><br>M49-A2Z IW M12   | <b>602300017</b><br>M49-E2 IW M12   |                                  |
| M12 connector below | <b>602300012</b><br>M49-SU1Z IW Z M12 | <b>602300014</b><br>M49-U1Z IW Z M12 | <b>602300016</b><br>M49-A2Z IW Z M12 | <b>602300018</b><br>M49-E2 IW Z M12 |                                  |

## M49-... AH

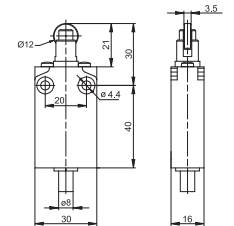


|                     | 1 NC / 1 NO<br>Snap-action            | 1 NC / 1 NO<br>Slow-action           | 2 NC<br>Slow-action                 | 2 NO<br>Slow-action                 | 2 NC / 2 NO<br>Slow-action       |
|---------------------|---------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|----------------------------------|
| Switching diagram   |                                       |                                      |                                     |                                     |                                  |
| Cable outlet right  | <b>602300073</b><br>M49-SU1Z AH       | <b>602300075</b><br>M49-U1Z AH       | <b>602300077</b><br>M49-A2Z AH      | <b>602300079</b><br>M49-E2 AH       | <b>602300081</b><br>M49-U2Z AH   |
| Cable outlet below  | <b>602300074</b><br>M49-SU1Z AH Z     | <b>602300076</b><br>M49-U1Z AH Z     | <b>602300078</b><br>M49-A2Z AH Z    | <b>602300080</b><br>M49-E2 AH Z     | <b>602300082</b><br>M49-U2Z AH Z |
| M12 connector right | <b>602300083</b><br>M49-SU1Z AH M12   | <b>602300085</b><br>M49-U1Z AH M12   | <b>602300087</b><br>M49-AZ AH M12   | <b>602300089</b><br>M49-E2 AH M12   |                                  |
| M12 connector below | <b>602300084</b><br>M49-SU1Z AH Z M12 | <b>602300086</b><br>M49-U1Z AH Z M12 | <b>602300088</b><br>M49-AZ AH Z M12 | <b>602300090</b><br>M49-E2 AH Z M12 |                                  |



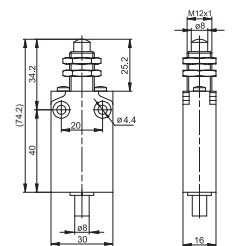
### M49-... RIW

|                     | 1 NC / 1 NO<br>Snap-action              | 1 NC / 1 NO<br>Slow-action             | 2 NC<br>Slow-action                    | 2 NO<br>Slow-action                   | 2 NC / 2 NO<br>Slow-action         |
|---------------------|---|--|--|---------------------------------------|------------------------------------|
| Switching diagram   |   |  |  |                                       |                                    |
| Cable outlet right  | <b>6023000019</b><br>M49-SU1Z RIW       | <b>6023000021</b><br>M49-U1Z RIW       | <b>6023000023</b><br>M49-A2Z RIW       | <b>6023000025</b><br>M49-E2 RIW       | <b>6023000027</b><br>M49-U2Z RIW   |
| Cable outlet below  | <b>6023000020</b><br>M49-SU1Z RIW Z     | <b>6023000022</b><br>M49-U1Z RIW Z     | <b>6023000024</b><br>M49-A2Z RIW Z     | <b>6023000026</b><br>M49-E2 RIW Z     | <b>6023000028</b><br>M49-U2Z RIW Z |
| M12 connector right | <b>6023000029</b><br>M49-SU1Z RIW M12   | <b>6023000031</b><br>M49-U1Z RIW M12   | <b>6023000033</b><br>M49-A2Z RIW M12   | <b>6023000035</b><br>M49-E2 RIW M12   |                                    |
| M12 connector below | <b>6023000030</b><br>M49-SU1Z RIW Z M12 | <b>6023000032</b><br>M49-U1Z RIW Z M12 | <b>6023000034</b><br>M49-A2Z RIW Z M12 | <b>6023000036</b><br>M49-E2 RIW Z M12 |                                    |

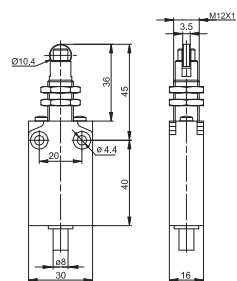


### M49-... IWF

|                     | 1 NC / 1 NO<br>Snap-action              | 1 NC / 1 NO<br>Slow-action             | 2 NC<br>Slow-action                    | 2 NO<br>Slow-action                   | 2 NC / 2 NO<br>Slow-action         |
|---------------------|---|--|--|---------------------------------------|------------------------------------|
| Switching diagram   |   |  |  |                                       |                                    |
| Cable outlet right  | <b>6023000037</b><br>M49-SU1Z IWF       | <b>6023000039</b><br>M49-U1Z IWF       | <b>6023000041</b><br>M49-A2Z IWF       | <b>6023000043</b><br>M49-E2 IWF       | <b>6023000045</b><br>M49-U2Z IWF   |
| Cable outlet below  | <b>6023000038</b><br>M49-SU1Z IWF Z     | <b>6023000040</b><br>M49-U1Z IWF Z     | <b>6023000042</b><br>M49-A2Z IWF Z     | <b>6023000044</b><br>M49-E2 IWF Z     | <b>6023000046</b><br>M49-U2Z IWF Z |
| M12 connector right | <b>6023000047</b><br>M49-SU1Z IWF M12   | <b>6023000049</b><br>M49-U1Z IWF M12   | <b>6023000051</b><br>M49-A2Z IWF M12   | <b>6023000053</b><br>M49-E2 IWF M12   |                                    |
| M12 connector below | <b>6023000048</b><br>M49-SU1Z IWF Z M12 | <b>6023000050</b><br>M49-U1Z IWF Z M12 | <b>6023000052</b><br>M49-A2Z IWF Z M12 | <b>6023000054</b><br>M49-E2 IWF Z M12 |                                    |



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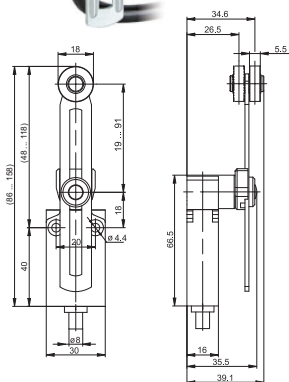


## M49-... RIWF



|                     | 1 NC / 1 NO<br>Snap-action               | 1 NC / 1 NO<br>Slow-action              | 2 NC<br>Slow-action                     | 2 NO<br>Slow-action                    | 2 NC / 2 NO<br>Slow-action          |
|---------------------|--|---|---|--|-------------------------------------|
| Switching diagram   |  |   |   |  |                                     |
| Cable outlet right  | <b>6023000055</b><br>M49-SU1Z RIWF       | <b>6023000057</b><br>M49-U1Z RIWF       | <b>6023000059</b><br>M49-A2Z RIWF       | <b>6023000061</b><br>M49-E2 RIWF       | <b>6023000063</b><br>M49-U2Z RIWF   |
| Cable outlet below  | <b>6023000056</b><br>M49-SU1Z RIWF Z     | <b>6023000058</b><br>M49-U1Z RIWF Z     | <b>6023000060</b><br>M49-A2Z RIWF Z     | <b>6023000062</b><br>M49-E2 RIWF Z     | <b>6023000064</b><br>M49-U2Z RIWF Z |
| M12 connector right | <b>6023000065</b><br>M49-SU1Z RIWF M12   | <b>6023000067</b><br>M49-U1Z RIWF M12   | <b>6023000069</b><br>M49-A2Z RIWF M12   | <b>6023000071</b><br>M49-E2 RIWF M12   |                                     |
| M12 connector below | <b>6023000066</b><br>M49-SU1Z RIWF Z M12 | <b>6023000068</b><br>M49-U1Z RIWF Z M12 | <b>6023000070</b><br>M49-A2Z RIWF Z M12 | <b>6023000072</b><br>M49-E2 RIWF Z M12 |                                     |

## M49-... AV

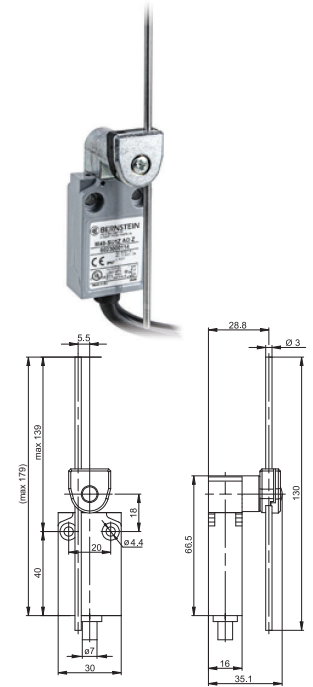


|                     | 1 NC / 1 NO<br>Snap-action            | 1 NC / 1 NO<br>Slow-action           | 2 NC<br>Slow-action                  | 2 NO<br>Slow-action                  | 2 NC / 2 NO<br>Slow-action       |
|---------------------|---------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|----------------------------------|
| Switching diagram   |                                       |                                      |                                      |                                      |                                  |
| Cable outlet right  | <b>6023000091</b><br>M49-SU1 AV       | <b>6023000093</b><br>M49-U1 AV       | <b>6023000095</b><br>M49-A2 AV       | <b>6023000097</b><br>M49-E2 AV       | <b>6023000099</b><br>M49-U2 AV   |
| Cable outlet below  | <b>6023000092</b><br>M49-SU1 AV Z     | <b>6023000094</b><br>M49-U1 AV Z     | <b>6023000096</b><br>M49-A2 AV Z     | <b>6023000098</b><br>M49-E2 AV Z     | <b>6023000100</b><br>M49-U2 AV Z |
| M12 connector right | <b>6023000101</b><br>M49-SU1 AV M12   | <b>6023000103</b><br>M49-U1 AV M12   | <b>6023000105</b><br>M49-A2 AV M12   | <b>6023000107</b><br>M49-E2 AV M12   |                                  |
| M12 connector below | <b>6023000102</b><br>M49-SU1 AV Z M12 | <b>6023000104</b><br>M49-U1 AV Z M12 | <b>6023000106</b><br>M49-A2 AV Z M12 | <b>6023000108</b><br>M49-E2 AV Z M12 |                                  |



### M49-... AD

|                     | 1 NC / 1 NO<br>Snap-action            | 1 NC / 1 NO<br>Slow-action           | 2 NC<br>Slow-action                  | 2 NO<br>Slow-action                  | 2 NC / 2 NO<br>Slow-action       |
|---------------------|---------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|----------------------------------|
| Switching diagram   |                                       |                                      |                                      |                                      |                                  |
| Cable outlet right  | <b>6023000113</b><br>M49-SU1 AD       | <b>6023000115</b><br>M49-U1 AD       | <b>6023000117</b><br>M49-A2 AD       | <b>6023000119</b><br>M49-E2 AD       | <b>6023000121</b><br>M49-U2 AD   |
| Cable outlet below  | <b>6023000114</b><br>M49-SU1 AD Z     | <b>6023000116</b><br>M49-U1 AD Z     | <b>6023000118</b><br>M49-A2 AD Z     | <b>6023000120</b><br>M49-E2 AD Z     | <b>6023000122</b><br>M49-U2 AD Z |
| M12 connector right | <b>6023000123</b><br>M49-SU1 AD M12   | <b>6023000125</b><br>M49-U1 AD M12   | <b>6023000127</b><br>M49-A2 AD M12   | <b>6023000129</b><br>M49-E2 AD M12   |                                  |
| M12 connector below | <b>6023000124</b><br>M49-SU1 AD Z M12 | <b>6023000126</b><br>M49-U1 AD Z M12 | <b>6023000128</b><br>M49-A2 AD Z M12 | <b>6023000130</b><br>M49-E2 AD Z M12 |                                  |



### M49-... FF

|                     | 1 NC / 1 NO<br>Snap-action            |
|---------------------|---------------------------------------|
| Switching diagram   |                                       |
| Cable outlet right  | <b>6023000109</b><br>M49-SU1 FF       |
| Cable outlet below  | <b>6023000110</b><br>M49-SU1 FF Z     |
| M12 connector right | <b>6023000111</b><br>M49-SU1 FF M12   |
| M12 connector below | <b>6023000112</b><br>M49-SU1 FF Z M12 |

