

Miniature Industrial Limit Switches Series 83 852 / 83 853 EN 50047



Conform to the following standards :

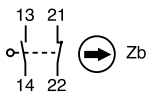
IEC 536-1, IEC 947-5-1, CSA C22.2 No. 14, EN 50047, EN 60947-5-1, EN 60204-1, NFC 20030 class I for 83 852 class II for 83 853 UL 508, VDE 0660/200.

Degree of protection : IP 66
Version : 1 pole

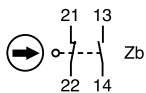
Function : Four-terminal double break contact element (form Zb) with positive opening NC contacts. The two moving contacts are electrically isolated from one another.

Principle :

Independent snap action contact
1 NO + 1 NC



Dependent action
1 NO + 1 NC



Break Before Make

Electrical characteristics

Assigned insulation voltage (U_i) : 500 V
Thermal rating (I_{th}) : 10 A
Use category : A300 - Q300
AC15 = 6A/250 V - 1.9 A / 380 V
DC 13 = 3A/24 V

Short circuit test (under IEC 947.5.1 § 8.3.4)

- Current peak 1000 A at 250 V ~ 0.5 < cos φ < 0.7
- Short circuit protection (SCPD) : fuse 10 A gF
- Electrical protection by internal earth terminal (83 852)

Connections :

Saddle washer and M 3.5 screw
Max. wire cross-section : 2 x 1.5 mm² or 1 x 2.5 mm²

Connection :

For 1/2" NPT

Approvals :

UL listed A300 - Q300 - CSA A300 - Q300

Types

| | | | | | |
|---|------------------------------------|-------------------|-------------------|-------------------|-------------------|
| Thermoplastic case with double insulation and metal actuator head | Independent snap action NC + NO | 83 853 001 | 83 853 501 | 83 853 101 | 83 853 201 |
| | Dependent action NC + NO | 83 853 011 | 83 853 511 | 83 853 111 | 83 853 211 |
| Metal bodies and actuator heads | Independent snap action NC + NO | 83 852 001 | 83 852 501 | 83 852 101 | 83 852 201 |
| | Dependent action NC + NO | 83 852 011 | 83 852 511 | 83 852 111 | 83 852 211 |

| | | | | |
|--|---|---|---|---|
| Control mechanisms - adjustable actuator heads 4 positions 90° | • | • | • | • |
| Steel plunger | • | | | |
| Plunger with steel roller | | • | | |
| Lever with plastic roller | | | • | |
| roller vertical | | | | • |
| roller lateral | | | | • |

Rotary head, momentary action to right and left ⁽¹⁾

| | | | | | |
|--|-------------------------------------|--|--|--|--|
| With lever and plastic roller | Ø 22 offset 40 | | | | |
| | Ø 19 offset 53 | | | | |
| | Ø 50 offset 47 | | | | |
| | offset 53.5 | | | | |
| With adjustable lever and plastic roller | Ø 22 offset 32.5 or 45 | | | | |
| | offset 46 | | | | |
| | Ø 50 adjustable offset 53.5 to 69.5 | | | | |

With adjustable polyamide rod actuator

Flexible metal lever

⁽¹⁾ Action either right or left according to position of head

| | | | | | |
|----------|-------------------------|--|--|--|--|
| Sequence | Independent snap action | | | | |
| | Dependent action | | | | |

| | | | | |
|--------------------------|--|--|--|--|
| Positive break operation | | | | |
|--------------------------|--|--|--|--|

Mechanical characteristics

| | | | | | |
|--|-----------------------|-----------------|-----------------|-----------------|-----------------|
| Minimum operating force | N (oz.) | 10 (35.3) | 10 (35.3) | 9 (31.7) | 9 (31.7) |
| Minimum total travel force | N (oz.) | 12 (42.3) | 12 (42.3) | 10 (35.3) | 10 (35.3) |
| Minimum positive opening force | N (oz.) | 25 (88.2) | 25 (88.2) | 20 (70.5) | 20 (70.5) |
| Minimum operating travel | mm (in.) | 5 (.2) | 5 (.2) | 5 (.2) | 5 (.2) |
| Minimum positive opening travel | mm (in.) | 6 (.24) | 6 (.24) | 6.5 (.247) | 6.5 (.247) |
| Differential travel | mm (in.) | 1.5 (.06) | 1.5 (.06) | 1.5 (.06) | 1.5 (.06) |
| Max. total travel | mm (in.) | 6 (.24) | 6 (.24) | 6 (.24) | 6 (.24) |
| Mechanical life (millions of operations) mini. | | 15 | 15 | 15 | 15 |
| Temperature limits | Use °C (°F) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) |
| | Stored °C (°F) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) |
| Degree of protection | | IP 66 | IP 66 | IP 66 | IP 66 |
| Weight | Series 83 853 g (oz.) | 90 (3.2) | 100 (3.5) | 100 (3.5) | 105 (3.7) |
| | Series 83 852 g (oz.) | 170 (6) | 180 (6.3) | 180 (6.3) | 180 (6.3) |

Other information

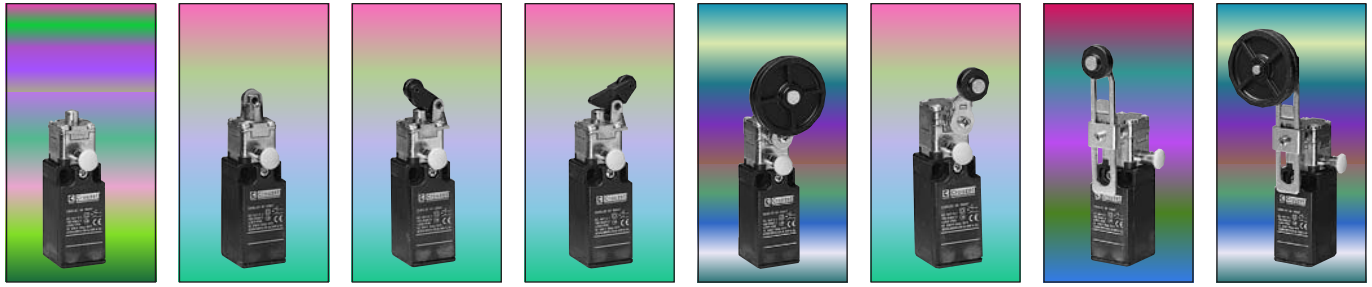
For other contact types and accessories or special modes of operation : please consult us.
For dimensions see page 3/38.

Replacement contact block

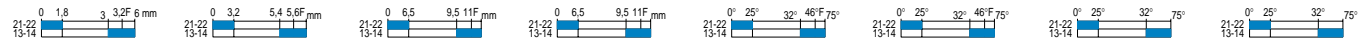
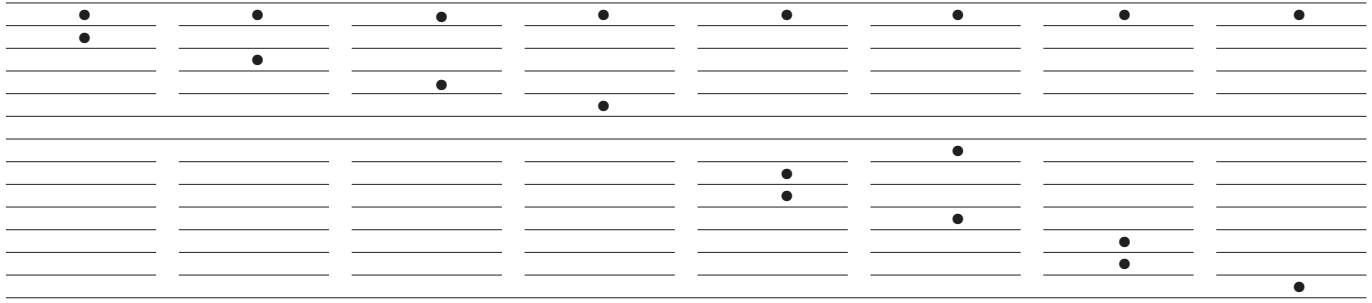
| Part number | Configurations | Function |
|-------------|----------------|------------------------|
| 83157401 | SPDT | <STD> |
| 83157402 | SPDT | Break before make |
| 83157403 | SPDT | Make before break |
| 83157404 | 2 NO | DPST - Normally open |
| 83157405 | 2 NC | DPST - Normally closed |

Products and specifications subject to change without notice.

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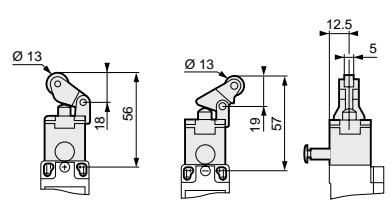


| | | | | | | | |
|------------|------------|------------|------------|------------------|------------------|------------------|------------------|
| 83 857 011 | 83 857 511 | 83 857 111 | 83 857 211 | 83 857 311 (Ø22) | 83 857 312 (Ø19) | 83 857 313 (Ø22) | 83 857 318 (Ø50) |
| 83 856 011 | 83 856 511 | 83 856 111 | 83 856 211 | 83 857 315 (Ø50) | 83 857 316 (Ø50) | 83 857 317 (Ø50) | 83 857 318 (Ø50) |
| | | | | 83 856 311 (Ø22) | 83 856 312 (Ø19) | 83 856 313 (Ø22) | 83 856 318 (Ø50) |
| | | | | 83 856 315 (Ø50) | 83 856 316 (Ø50) | 83 856 317 (Ø50) | 83 856 318 (Ø50) |

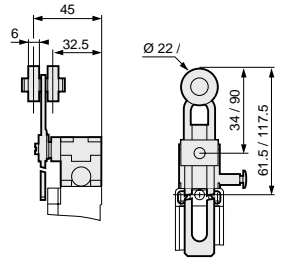


| | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|
| 10 | 9 | 9 | 9 | (28) | (28) | (28) | (28) |
| 12 | 10 | 10 | 10 | (37) | (37) | (37) | (37) |
| 2.5 | 2.5 | 20 | 20 | (75) | (75) | (75) | (75) |
| 5 | 5 | 5 | 5 | (30) | (30) | (30) | (30) |
| 3.2 | 5.6 | 11 | 11 | (46) | (46) | (46) | (46) |
| 1.5 | 1.5 | 1.5 | 1.5 | (20) | (20) | (20) | (20) |
| 6 | 6 | 6 | 6 | (75) | (75) | (75) | (75) |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| -20 +80 | -20 +80 | -20 +80 | -20 +80 | -20 +80 | -20 +80 | -20 +80 | -20 +80 |
| -40 +80 | -40 +80 | -40 +80 | -40 +80 | -40 +80 | -40 +80 | -40 +80 | -40 +80 |
| IP 66 | IP 66 | IP 66 | IP 66 | IP 66 | IP 66 | IP 66 | IP 66 |
| 145/230 | 155/240 | 150/240 | 150/240 | 190/270 | 190/270 | 210/300 | 230/320 |

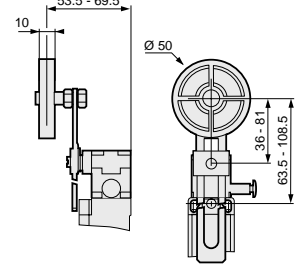
83 856 111 / 211 - 83 857 111 / 211



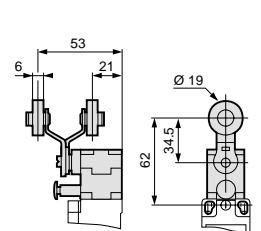
83 856 313 - 83 857 313



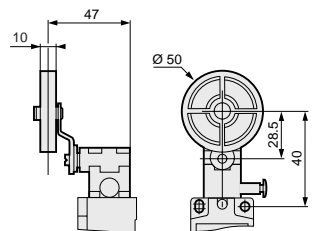
83 856 318 - 83 857 318



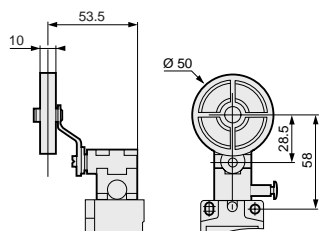
83 856 312 - 83 857 312



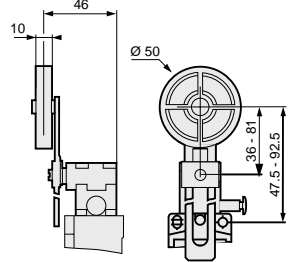
83 856 315 - 83 857 315



83 856 316 - 83 857 316



83 856 317 - 83 857 317



Products and specifications subject to change without notice.

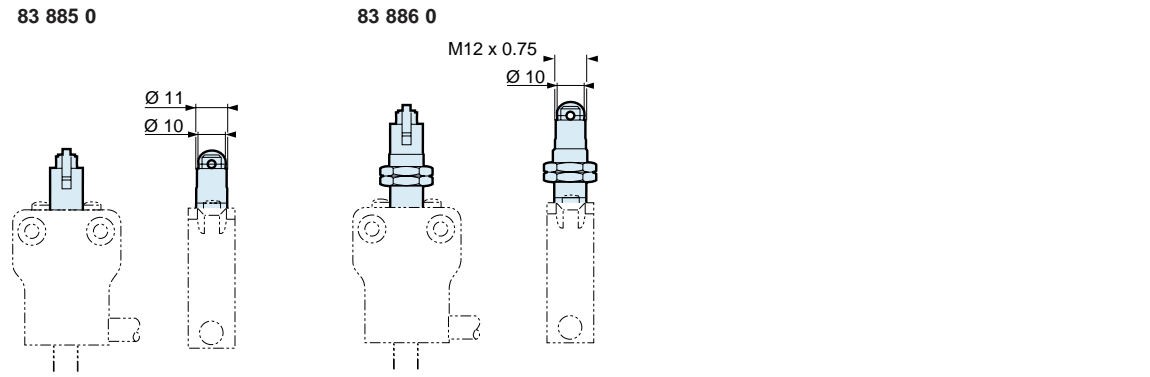
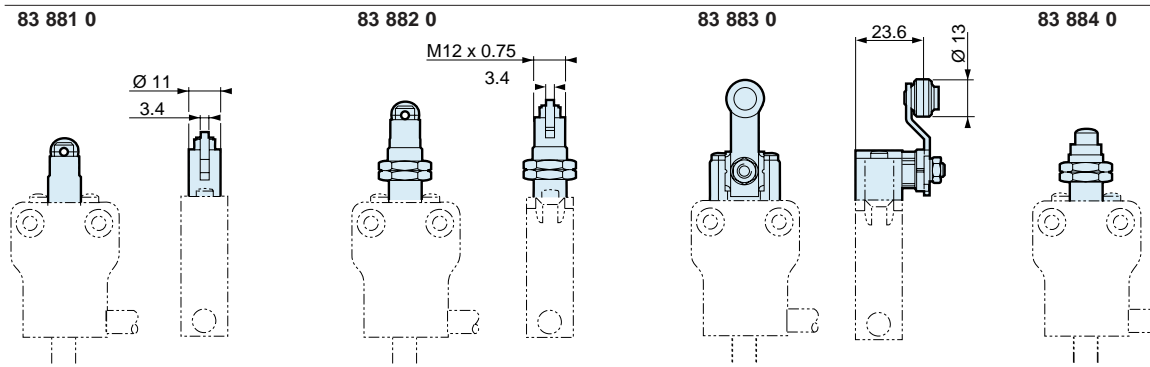
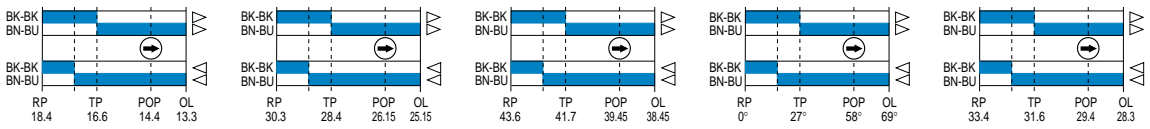
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| | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|----------|
| 83 880 0 | 83 881 0 | 83 882 0 | 83 883 0 | 83 884 0 | 1 |
| 83 880 102 | 83 881 102 | 83 882 102 | 83 883 102 | 83 884 102 | 2 |
| 83 880 103 | 83 881 103 | 83 882 103 | 83 883 103 | 83 884 103 | |
| | | | | | |
| | | | | | |

| | | | | |
|------------|------------|------------|-------------------|------------|
| 36 (10) | 36 (10) | 36 (10) | 22 in.oz. (15cmN) | 36 (10) |
| 108 (30) | 108 (30) | 108 (30) | 52 in.oz. (35cmN) | 108 (30) |
| 100 (28) | 100 (28) | 100 (28) | 22 in.oz. (15cmN) | 100 (28) |
| 10 | 10 | 10 | 10 | 10 |
| 10.3 (290) | 10.4 (295) | 11.1 (315) | 10.3 (290) | 10.9 (310) |



mm

| | |
|--------------------------------|--|
| To order, specify: | |
| Standard products | 2 Part number Example: Limit switch 83 881 102 |
| Standard products, non stocked | 1 Type Examples: Limit switch 83 881 003 ; cable length = 3 m - Limit switch 83 881 006 ; cable length = 6 m |

Products and specifications subject to change without notice.

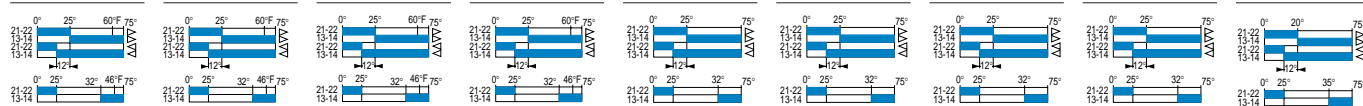
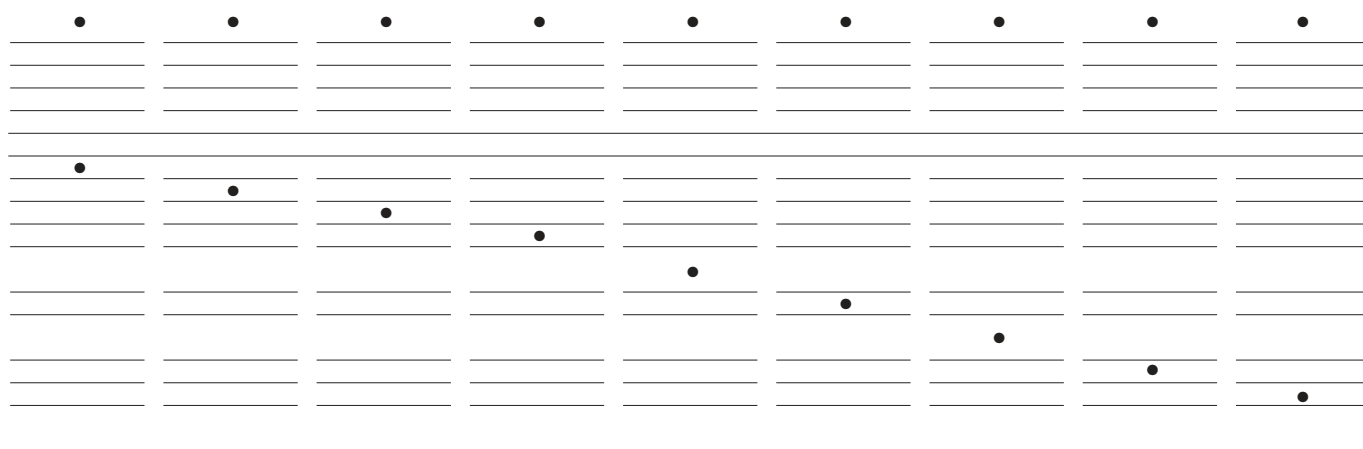
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| | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 83 853 301 | 83 853 302 | 83 853 305 | 83 853 306 | 83 853 303 | 83 853 307 | 83 853 308 | 83 853 304 | 83 853 601 |
| 83 853 311 | 83 853 312 | 83 853 315 | 83 853 316 | 83 853 313 | 83 853 317 | 83 853 318 | 83 853 314 | 83 853 611 |
| 83 852 301 | 83 852 302 | 83 852 305 | 83 852 306 | 83 852 303 | 83 852 307 | 83 852 308 | 83 852 304 | 83 852 601 |
| 83 852 311 | 83 852 312 | 83 852 315 | 83 852 316 | 83 852 313 | 83 852 317 | 83 852 318 | 83 852 314 | 83 852 611 |



| | | | | | | | | |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 28cmN (40inoz) | 28cmN (40inoz) | 28cmN (40inoz) | 28cmN (40inoz) | 28cmN (40inoz) | 28cmN (40inoz) | 28cmN (40inoz) | 28cmN (40inoz) | 3 (10) |
| 37cmN (52inoz) | 37cmN (52inoz) | 37cmN (52inoz) | 37cmN (52inoz) | 37cmN (52inoz) | 37cmN (52inoz) | 37cmN (52inoz) | 37cmN (52inoz) | 4.5 (16) |
| 75cmN (106inoz) | 75cmN (106inoz) | 75cmN (106inoz) | 75cmN (106inoz) | 75cmN (106inoz) | 75cmN (106inoz) | 75cmN (106inoz) | 75cmN (106inoz) | |
| 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° |
| 60° | 60° | 60° | 60° | 60° | 60° | 60° | 60° | |
| 20° | 20° | 20° | 20° | 20° | 20° | 20° | 20° | 20° |
| 75° | 75° | 75° | 75° | 75° | 75° | 75° | 75° | 75° |
| 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) |
| -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) |
| IP 66 | IP 66 | IP 66 | IP 66 | IP 66 | IP 66 | IP 66 | IP 66 | IP 66 |
| 130 (4.6) | 130 (4.6) | 130 (4.6) | 130 (4.6) | 130 (4.6) | 153 (5.4) | 153 (5.4) | 153 (5.4) | 130 (4.6) |
| 205 (7.23) | 205 (7.23) | 205 (7.23) | 205 (7.23) | 205 (7.23) | 225 (7.93) | 225 (7.93) | 225 (7.93) | 200 (7.1) |

To order, specify :

Standard products
 Standard products, non stocked

1 Part number
 Example : Limit switch 83 853 001

Products and specifications subject to change without notice.

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Industrial Limit Switches Series 83 862 EN 50041

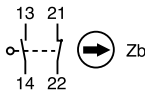


Conform to the following standards :
 EN 50041, IEC 947-5-1, VDE 0660/200
 UL 508, CSA C22.2 No.14
 IEC 536-1, EN 60204-1, NFC 20030
 class I

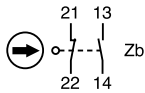
Degree of protection : IP 66

Function : Four-terminal double break contact element (form Zb) with positive opening NC contacts.
 The two moving contacts are electrically isolated from one another.

Principle :
 Independent snap action contact
 1 NO + 1 NC



Dependent action
 1 NO + 1 NC



Break before make

Electrical characteristics :

Assigned insulation voltage (Ui) : 500 V
 Thermal rating (Ith) : 10 A
 Use category : A300 - Q300
 AC15 = 6A/250 V - 1.9 A / 380 V
 DC 13 = 3A/24 V

Short circuit test (under IEC 947.5.1 § 8.3.4)
 - Current peak 1000 A
 at 250 V - 0.5 < cos φ < 0.7
 - Short circuit protection (SCPD) : fuse 10 A gF
 - Electrical protection by internal earth terminal

Connections :
 Saddle washer and M 3.5 screw
 Max. wire cross-section : 2 x 1.5 mm² or 2.5 mm²

Connection :
 1/2" NPT

Approvals :
 UL listed A300 - Q300 - CSA A300 - Q300

Types

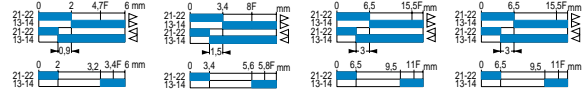
| | 83 862 011 | 83 862 511 | 83 862 111 | 83 862 211 |
|--|------------|------------|------------|------------|
| Dependent action NC + NO | 83 862 011 | 83 862 511 | 83 862 111 | 83 862 211 |
| Independent snap action NC + NO | 83 862 001 | 83 862 501 | 83 862 101 | 83 862 201 |
| Control mechanisms - adjustable actuator heads 4 positions 90° | • | • | • | • |
| Steel plunger | • | | | |
| Plunger with steel roller | | • | | |
| Lever with vertical plastic roller | | | • | |
| Lever with lateral plastic roller | | | | • |

Rotary head, momentary action to clockwise and/or anti-clockwise (1)

| | 83 862 011 | 83 862 511 | 83 862 111 | 83 862 211 |
|---|------------|------------|------------|------------|
| Ø 22 offset 43.5 | | | | |
| With lever and plastic roller | | | | |
| Ø 19 offset 56 | | | | |
| offset 50.5 | | | | |
| Ø 50 offset 57 | | | | |
| With adjustable lever and plastic roller | | | | |
| Ø 22 offset 36 or 48 | | | | |
| Ø 50 offset 49 adjustable offset 57 to 73 | | | | |
| With adjustable polyamide rod actuator | | | | |
| Flexible metal lever | | | | |
| Independent snap action | | | | |

Sequence

Dependent action



Positive break operation



Mechanical characteristics

| | | | | | |
|--|----------|-----------------|-----------------|-----------------|-----------------|
| Minimum operating force | N (oz.) | 10 (35.5) | 10 (35.5) | 9 (31.7) | 9 (31.7) |
| Minimum total travel force | N (oz.) | 12 (42.3) | 12 (42.3) | 10 (35.3) | 10 (35.3) |
| Minimum positive opening travel | N (oz.) | 25 (88.2) | 25 (88.2) | 20 (70.5) | 20 (70.5) |
| Minimum operating travel | mm (in.) | 5 (.2) | 5 (.2) | 5 (.2) | 5 (.2) |
| Minimum positive opening travel | mm (in.) | 6 (.24) | 6 (.24) | 6.5 (.26) | 6.5 (.26) |
| Differential travel | mm (in.) | 1.5 (.06) | 1.5 (.06) | 1.5 (.06) | 1.5 (.06) |
| Max. total travel | mm (in.) | 6 (.24) | 6 (.24) | 6 (.24) | 6 (.24) |
| Mechanical life (millions of operations) mini. | | 15 | 15 | 15 | 15 |
| Temperature Use | °C (°F) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) | -25+80(-13+176) |
| limits Stored | °C (°F) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) | -40+80(-40+176) |
| Degree of protection | | IP 66 | IP 66 | IP 66 | IP 66 |
| Weight | g (oz.) | 305 (10.76) | 315 (11.11) | 320 (11.28) | 325 (11.46) |

(1) Action either right or left according to position of head

Accessories

| | | |
|--|-----------|------------|
| Cover with status indicator (supplied loose) | 24.30 V ~ | 79 250 290 |
| | 220 V ~ | 79 250 291 |

Replacement contact block

| Part number | Configuration | Function |
|-------------|---------------|------------------------|
| 83157401 | SPDT | <STD> |
| 83157402 | SPDT | Break before make |
| 83157403 | SPDT | Make before break |
| 83157404 | 2 NO | DPST - Normally open |
| 83157405 | 2 NC | DPST - Normally closed |

Other information

For other contact types and accessories or special modes of operation : please consult us.
 For dimensions see page 3/39.

Products and specifications subject to change without notice.

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