

## MINIATURE

# D4 Series

### Features

- 8 current ratings
- Choice of actuators
- Various terminal types
- 3 contact arrangements
- Choice of standard or light operating force
- Long-life coil spring mechanism
- Agency approved extended life versions
- ENEC/VDE approval standard on European versions
- Stackable case and cover available upon request

### European Approved Versions

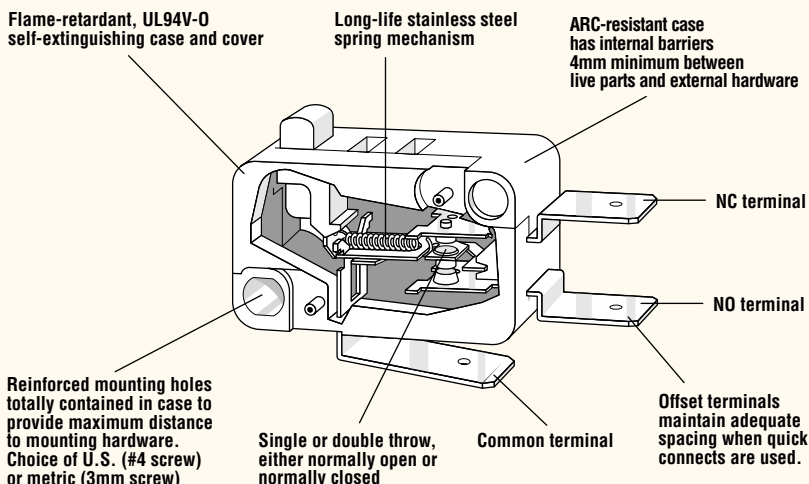
D4 series switches with metric mounting holes automatically carry ENEC approval. D4 series switches with U.S. mounting holes have optional VDE approval. Contact factory for part number. Switches with straight terminals may require insulated connectors for international approval.

### Electrical Ratings

| Switch Series | EN61058 Rating                                   | UL1054 Rating                     | Electrical Life at Rated Load        |                                      |
|---------------|--------------------------------------------------|-----------------------------------|--------------------------------------|--------------------------------------|
|               |                                                  |                                   | According to EN<br>(Min. Operations) | According to UL<br>(Min. Operations) |
| D40           | N/A                                              | 1.0A, 125VAC                      | NA                                   | 6,000*                               |
| D41           | 0.1(0.05)A, 250V~                                | 0.1A, 125/250VAC                  | 50,000                               | 6,000*                               |
| D42           | 3(1)A, 250V~                                     | 3A, 125/250VAC; 1/10HP, 250VAC    | 50,000                               | 6,000*                               |
| D43           | 6(2)A, 250V~                                     | 5A, 1/4HP, 125/250VAC             | 50,000                               | 6,000*                               |
| D44           | 10(3)A, 250V~                                    | 10A, 1/2HP, 125/250VAC            | 50,000                               | 6,000*                               |
| D45           | 16(4)A, 250V~<br>10(3)A, 400V~ (Std. force only) | 15A, 1/2HP, 125/250VAC            | 50,000                               | 6,000*                               |
| D48           | 21(8)A, 250V~                                    | 21A, 1HP, 125VAC; 2HP, 250VAC     | 10,000                               | 6,000                                |
| D49           | N/A                                              | 10A, 1/2HP, 125/250VAC; 6A, 30VDC | NA                                   | 6,000*                               |

Operating life for 125°C and 150°C available upon request.

\*Indicates 100K life available. Consult factory.



### Specifications

#### Electrical

Temperature Rating: -40° to +85°C, 125°C or 150°C

Flammability Rating: UL94V-0

#### Materials

Case: Thermoplastic Polyester (PBT), European Versions (PET)

Actuating Button: Thermoplastic Acetal (POM), 85°C  
Thermoplastic Polyester (PET), 125°C or 150°C

Auxiliary Actuator: Aluminum, Stainless Steel or Cold-Rolled Steel (Nickel-Plated)

Common Terminal: Silver-Plated Brass

NO/NC Terminals: Brass (D40, D41, D42, D43, D44, D49)  
Brass (D45, European versions)  
Copper (D45, US Versions)  
Silver-Plated Copper (D48, US versions)  
Copper (D48, European versions)

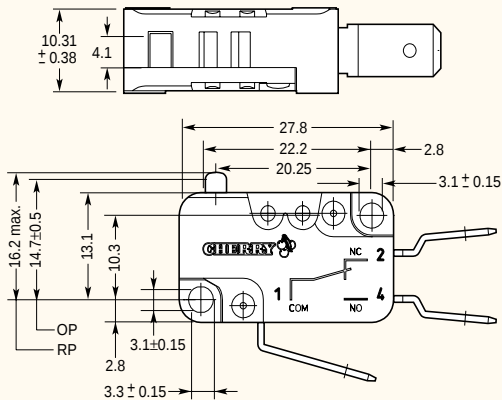
Moving Blade: Brass (D40, D41, D42, D43)  
Beryllium Copper (D44, D45, D48)

Contacts: Gold Crosspoint (D40, D41)  
Silver Alloy (D42, D43, D44, D45, D48, D49)

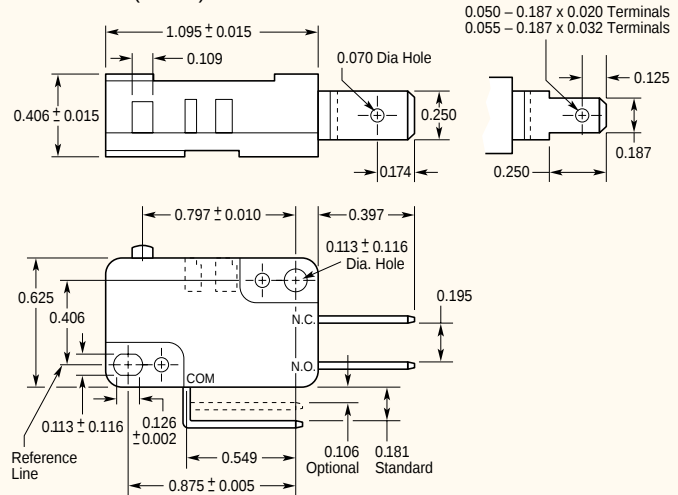


## Dimensions

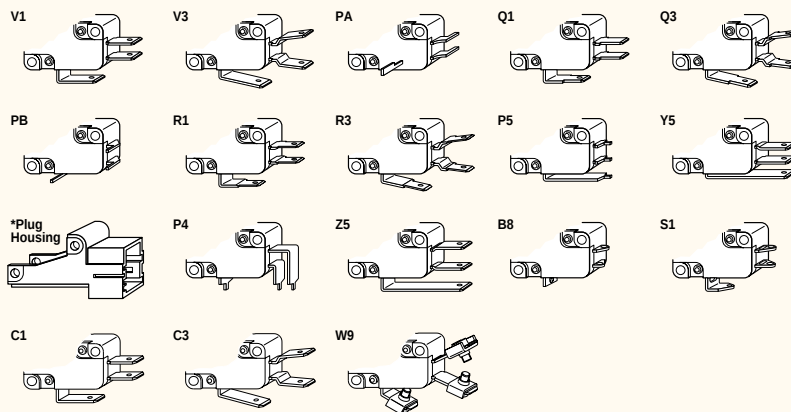
### European Version (mm)



### U.S. Version (inches)

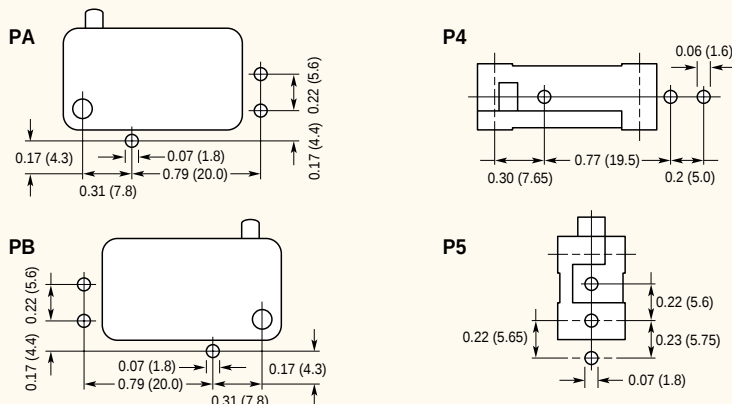


## Terminals



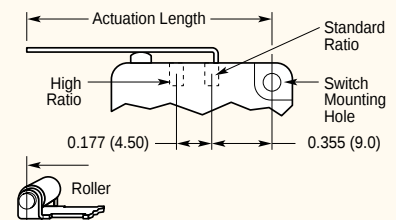
\*Connector Part #623-0518 (mates with Y5 only).

## Drilling Patterns for PCB Terminals



## Actuators

Many special forms and lengths of actuators are available. Standard type integral hinged lever and roller actuators are available in choice of 2 mounting positions. Actuation lengths are dimensioned from centerline of switch mounting hole as shown.



## EN (VDE) Identifiers

Switches with a "standard" operating force are identified by a 'Y' next to the standard model description, e.g. D43Y.

Switches with a "light" operating force are identified by an 'X' next to the standard model description, e.g. D43X.

## Mounting — US Version

Recommended mounting screw size: #4-40 Round head. Recommended torque on screw: 3 inch lbs. max.

## Mounting — European Version

Recommended mounting screw size: M3. Recommended torque on screw: 70N cm max.

## Actuator Specifications — US Versions

| Actuator Type | Switch Type                                                                       | Maximum Operating Force (Gms.) |                    |                    |                    |                    |                    |  | Maximum Pre-Travel inches (mm) |              | Operating Point inches (mm) |                           | Minimum Over Travel inches (mm) |              | Max. Movement Differential inches (mm) |              | Actuation Length inches (mm) |
|---------------|-----------------------------------------------------------------------------------|--------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--|--------------------------------|--------------|-----------------------------|---------------------------|---------------------------------|--------------|----------------------------------------|--------------|------------------------------|
|               |                                                                                   | D40, D41, D42<br>Std / Light   | D43<br>Std / Light | D44<br>Std / Light | D45<br>Std / Light | D48<br>Std / Light | D49<br>Std / Light |  | D40-D45, D49                   | D48          | D40-D45, D49                | D48                       | D40-D45, D49                    | D48          | D40-D45, D49                           | D48          |                              |
| AA            |  | 75 / 15                        | 170 / 45           | 285 / 75           | 400 / 100          | — / 120            | 285 / 75           |  | 0.047 (1.19)                   | 0.070 (1.78) | 0.558/0.598 (14.17/15.19)   | 0.537/0.557 (13.64/14.15) | 0.050 (1.27)                    | 0.040 (1.02) | 0.010 (0.25)                           | 0.010 (0.25) | —                            |
| LA            |  | 75 / 15                        | 170 / 45           | 285 / 75           | 400 / 100          | — / 183            | 285 / 75           |  | 0.062 (1.57)                   | 0.063 (1.60) | 0.580/0.620 (14.73/15.75)   | 0.578/0.618 (14.70/15.70) | 0.050 (1.27)                    | 0.031 (0.80) | 0.016 (0.41)                           | 0.011 (0.30) | 0.865 (21.97)                |
| LD*†          |  | 35 / 8                         | 86 / 23            | 144 / 37           | 200 / 51           | — / 77             | 144 / 37           |  | 0.125 (3.18)                   | 0.150 (3.80) | 0.555/0.645 (14.10/16.38)   | 0.563/0.657 (14.0/16.4)   | 0.085 (2.16)                    | 0.071 (1.80) | 0.030 (0.76)                           | 0.031 (0.80) | 1.40 (35.56)                 |
| MD*††         |  | 20 / 5                         | 51 / 14            | 86 / 23            | 120 / 30           | — / 46             | 86 / 30            |  | 0.222 (5.59)                   | 0.252 (6.40) | 0.525/0.675 (13.34/17.15)   | 0.535/0.661 (13.6/16.8)   | 0.130 (3.30)                    | 0.126 (3.20) | 0.050 (1.27)                           | 0.051 (1.30) | 1.580 (40.13)                |
| JL*†††        |  | 17 / 3.5                       | 38 / 10            | 63 / 17            | 90 / 22            | — / 36             | 63 / 17            |  | 0.300 (7.62)                   | 0.347 (8.80) | 0.500/0.700 (12.70/17.78)   | 0.472/0.724 (12.0/18.4)   | 0.187 (4.75)                    | 0.169 (4.30) | 0.065 (1.65)                           | 0.067 (1.70) | 2.757 (70.03)                |
| RA            |  | 75 / 15                        | 170 / 45           | 285 / 75           | 400 / 100          | — / —              | 285 / 75           |  | 0.047 (1.19)                   | —            | 0.776/0.836 (19.71/21.33)   | —                         | 0.040 (1.02)                    | —            | 0.010 (0.25)                           | —            | 0.810 (20.57)                |
| RD            |  | 35 / 8                         | 86 / 22            | 144 / 37           | 200 / 50           | — / —              | 144 / 37           |  | 0.125 (3.18)                   | —            | 0.761/0.851 (19.33/21.62)   | —                         | 0.085 (2.16)                    | —            | 0.030 (0.76)                           | —            | 1.240 (34.04)                |
| TD            |  | 25 / 5                         | 51 / 14            | 86 / 22            | 120 / 30           | — / —              | 86 / 22            |  | 0.200 (5.08)                   | —            | 0.731/0.881 (18.57/22.38)   | —                         | 0.120 (3.05)                    | —            | 0.040 (1.02)                           | —            | 1.512 (38.51)                |
| GD            |  | 35 / 8                         | 86 / 33            | 144 / 47           | 200 / 50           | — / —              | 144 / 37           |  | 0.125 (3.18)                   | —            | 1.000/1.090 (25.40/27.69)   | —                         | 0.085 (2.16)                    | —            | 0.030 (0.76)                           | —            | 1.340 (34.04)                |

\*Auxiliary levers on light force D40, D41 and D42 will be made out of Aluminum.

†YD suffix for D40, D41 and D42. ††XD suffix for D40, D41 and D42. †††YL suffix for D40, D41 and D42.

## Ordering Information — US Versions

| D4            |                                                    |                                     | 3                                |    |    | V3 |             |             | L    |                |               | D             |               |  |
|---------------|----------------------------------------------------|-------------------------------------|----------------------------------|----|----|----|-------------|-------------|------|----------------|---------------|---------------|---------------|--|
| Series/Prefix |                                                    |                                     |                                  |    |    |    |             |             |      |                |               | Code          |               |  |
| Code          | EN61058                                            | UL1054                              | Mounting Holes                   | NO | NC | DT | Oper. Force | Temp. Index | Code | Actuator Type  | A             | D             | L             |  |
| 0             | N/A                                                | 1.0A, 125VAC                        | US Mounting Holes (VDE Optional) | A  | B  | C  | Std.        | 85°C        | AA   | Button         | —             | —             | —             |  |
| 1             | 0.1(0.5)A, 250V                                    | 0.1A, 125/250VAC                    |                                  | D  | J  | K  | L           | Light       | L    | Lever SR       | 0.865 (21.97) | 1.400 (35.56) | 2.757 (70.02) |  |
| 2             | 3(1)A, 250V                                        | 3A, 125/250VAC<br>1/10HP, 250VAC    |                                  | D  | E  | F  | Std.        | 150°C*      | M    | Lever HR       | 1.042 (26.47) | 1.580 (40.13) | 2.934 (74.52) |  |
| 3             | 6(2)A, 250V                                        | 5A, 1/4HP, 125/250VAC               |                                  | W  | X  | Y  | Light       |             | Y    | Alum. Lever SR | —             | 1.400 (35.56) | 2.757 (70.03) |  |
| 4             | 10(3)A, 250V                                       | 10A, 1/2HP, 125/250VAC              |                                  |    |    |    |             |             | X    | Alum. Lever HR | —             | 1.580 (40.13) | 2.932 (74.47) |  |
| 5             | 16(4)A, 250V<br>10(3)A, 400V~<br>(Std. force only) | 15A, 1/2HP, 125/250VAC              |                                  |    |    |    |             |             | J    | SS Lever SR    | —             | —             | 2.757 (70.03) |  |
| 8             | 21(8)A, 250V                                       | 21A, 1HP, 125VAC<br>2HP, 250VAC     |                                  |    |    |    |             |             | K    | SS Lever HR    | —             | —             | 2.932 (74.47) |  |
| 9             | N/A                                                | 10A, 1/2HP, 125/250VAC<br>6A, 30VDC |                                  |    |    |    |             |             | R    | Roller SR      | 0.810 (20.57) | 1.340 (34.04) | —             |  |

\*D45 and D48 with VDE only available with metric holes. See European ordering information.

| Code | Terminal Type                           | inches (mm) |
|------|-----------------------------------------|-------------|
| Q1   | 0.187 x 0.032 (4.8 x 0.8) QC Straight*  |             |
| Q3   | 0.187 x 0.032 (4.8 x 0.8) QC Dog Leg*   |             |
| R1   | 0.187 x 0.020 (4.8 x 0.8) QC, Straight* |             |
| V1   | 0.250 x 0.032 (6.3 x 0.8) QC, Straight  |             |
| V3   | 0.250 x 0.032 (6.3 x 0.8) QC, Dog Leg   |             |

|  |  | Code          |               | Actuation Length inches (mm) |  |
|--|--|---------------|---------------|------------------------------|--|
|  |  | A             | D             | L                            |  |
|  |  | —             | —             | —                            |  |
|  |  | 0.865 (21.97) | 1.400 (35.56) | 2.757 (70.02)                |  |
|  |  | 1.042 (26.47) | 1.580 (40.13) | 2.934 (74.52)                |  |
|  |  | —             | 1.400 (35.56) | 2.757 (70.03)                |  |
|  |  | —             | 1.580 (40.13) | 2.932 (74.47)                |  |
|  |  | —             | —             | 2.757 (70.03)                |  |
|  |  | —             | —             | 2.932 (74.47)                |  |
|  |  | 0.810 (20.57) | 1.340 (34.04) | —                            |  |
|  |  | 0.987 (25.07) | 1.516 (38.51) | —                            |  |
|  |  | 0.810 (20.57) | 1.340 (34.04) | —                            |  |
|  |  | 0.987 (25.07) | 1.516 (38.51) | —                            |  |

SR = Standard Ratio, Back Hole • HR = High Ratio, Front Hole  
Additional actuators available upon request.

VDE optional for D41–D44 with U.S. mounting holes.

\*Not available for D48.

SR = Standard Ratio, Back Hole • HR = High Ratio, Front Hole  
Additional actuators available upon request.



## Actuator Specifications — European Versions

| Actuator Type | Switch Type | Maximum Operating Force (Gms.) |                  |                  |                  |                  |     | Maximum Pre-Travel inches (mm) |              | Operating Point inches (mm) | Minimum Over Travel inches (mm) |             | Max. Movement Differential inches (mm) |             | Max. Rest Position inches (mm) |              | Actuation Length inches (mm) |
|---------------|-------------|--------------------------------|------------------|------------------|------------------|------------------|-----|--------------------------------|--------------|-----------------------------|---------------------------------|-------------|----------------------------------------|-------------|--------------------------------|--------------|------------------------------|
|               |             | D40, Std / Light               | D42, Std / Light | D43, Std / Light | D44, Std / Light | D45, Std / Light | D48 | D41-D45                        | D48          |                             | D41-D45                         | D48         | D41-D45                                | D48         | D41-D45                        | D48          |                              |
| AA            |             | 75 / 15                        | 170 / 45         | 285 / 75         | 400 / 100        | 150              |     | 0.047 (1.2)                    | 0.063 (1.6)  | 0.543/0.598 (13.8/15.2)     | 0.051 (1.3)                     | 0.047 (1.2) | 0.012 (0.3)                            | 0.012 (0.3) | 0.638 (16.2)                   | 0.638 (16.2) | —                            |
| MA/KA         |             | 50 / 10                        | 110 / 28         | 180 / 50         | 256 / 65         | 100              |     | 0.087 (2.2)                    | 0.118 (3.0)  | 0.567/0.630 (14.4/16.0)     | 0.063 (1.6)                     | 0.055 (1.4) | 0.024 (0.6)                            | 0.024 (0.6) | 0.740 (18.8)                   | 0.740 (18.8) | 1.01 (25.7)                  |
| LA/JA*        |             | 85 / 17                        | 190 / 50         | 320 / 85         | 440 / 115        | 180              |     | 0.047 (1.2)                    | 0.063 (1.6)  | 0.579/0.618 (14.7/15.7)     | 0.035 (0.9)                     | 0.031 (0.8) | 0.012 (0.3)                            | 0.012 (0.3) | 0.661 (16.8)                   | 0.661 (16.8) | 0.835 (21.2)                 |
| JD/LD*        |             | 40 / 8                         | 86 / 22          | 144 / 40         | 200 / 50         | 75               |     | 0.126 (3.2)                    | 0.150 (3.8)  | 0.551/0.646 (14.0/16.4)     | 0.091 (2.3)                     | 0.071 (1.8) | 0.031 (0.8)                            | 0.031 (0.8) | 0.780 (19.8)                   | 0.780 (19.8) | 1.40 (35.6)                  |
| KD/MD*        |             | 25 / 5                         | 50 / 14          | 86 / 25          | 120 / 30         | 45               |     | 0.200 (5.1)                    | 0.252 (6.4)  | 0.535/0.661 (13.6/16.8)     | 0.142 (3.6)                     | 0.126 (3.2) | 0.051 (1.3)                            | 0.051 (1.3) | 0.874 (22.2)                   | 0.874 (22.2) | 1.58 (40.1)                  |
| LL/JL*        |             | 17 / 3.5                       | 40 / 10          | 60 / 17          | 90 / 22          | 35               |     | 0.299 (7.6)                    | 0.346 (8.8)  | 0.465/0.724 (11.8/18.4)     | 0.185 (4.7)                     | 0.169 (4.3) | 0.067 (1.7)                            | 0.067 (1.7) | 0.992 (25.2)                   | 0.992 (25.2) | 2.75 (69.9)                  |
| ML/KL*        |             | 10 / 2                         | 25 / 6           | 40 / 10          | 56 / 13          | 20               |     | 0.500 (12.7)                   | 0.575 (14.6) | 0.433/0.764 (11.0/19.4)     | 0.031 (7.9)                     | 0.283 (7.2) | 0.098 (2.5)                            | 0.098 (2.5) | 1.210 (30.8)                   | 1.210 (30.8) | 2.93 (74.4)                  |
| RA            |             | 90 / 15                        | 190 / 45         | 330 / 75         | 440 / 100        | 180              |     | 0.047 (1.2)                    | 0.067 (1.7)  | 0.776/0.839 (19.7/21.3)     | 0.039 (1.0)                     | 0.031 (0.8) | 0.016 (0.4)                            | 0.012 (0.3) | 0.858 (21.8)                   | 0.866 (22.0) | 0.811 (20.6)                 |
| RD            |             | 40 / 8                         | 86 / 22          | 144 / 40         | 200 / 50         | 75               |     | 0.126 (3.2)                    | 0.150 (3.8)  | 0.764/0.850 (19.4/21.6)     | 0.087 (2.2)                     | 0.071 (1.8) | 0.031 (0.8)                            | 0.031 (0.8) | 0.976 (24.8)                   | 0.976 (24.8) | 1.34 (34.1)                  |
| TD            |             | 25 / 14                        | 55 / 14          | 86 / 22          | 120 / 30         | 50               |     | 0.200 (5.1)                    | 0.244 (6.2)  | 0.744/0.870 (18.9/22.1)     | 0.142 (3.6)                     | 0.118 (3.0) | 0.051 (1.3)                            | 0.047 (1.2) | 1.080 (27.4)                   | 1.078 (27.4) | 1.52 (38.6)                  |
| TA            |             | 55 / 10                        | 110 / 30         | 200 / 55         | 260 / 70         | 110              |     | 0.087 (2.2)                    | 0.118 (3.0)  | 0.764/0.850 (19.4/21.6)     | 0.063 (1.6)                     | 0.051 (1.3) | 0.024 (0.6)                            | 0.024 (0.6) | 0.937 (23.8)                   | 0.945 (24.0) | 0.988 (25.1)                 |
| UA            |             | 55 / 11                        | 120 / 32         | 215 / 55         | 280 / 70         | 110              |     | 0.087 (2.2)                    | 0.118 (3.0)  | 0.768/0.846 (19.5/21.5)     | 0.063 (1.6)                     | 0.051 (1.3) | 0.020 (0.5)                            | 0.020 (0.5) | 0.937 (23.8)                   | 0.945 (24.0) | 0.988 (25.1)                 |
| SA            |             | 85 / 17                        | 190 / 50         | 330 / 85         | 440 / 115        | 200              |     | 0.051 (1.3)                    | 0.067 (1.7)  | 0.780/0.835 (19.8/21.2)     | 0.039 (1.0)                     | 0.031 (0.8) | 0.012 (0.3)                            | 0.012 (0.3) | 0.858 (21.8)                   | 0.866 (22.0) | 0.811 (20.6)                 |

\*On light force D41 and D42, auxiliary actuators MD, ML, LD and LL are made out of Aluminum.

## Ordering Information — European Versions

| D4            |                                                    |                                     | 3 |  |  |
|---------------|----------------------------------------------------|-------------------------------------|---|--|--|
| Series/Prefix |                                                    |                                     |   |  |  |
| Code          | EN61058                                            | UL1054                              |   |  |  |
| 1             | 0.1(0.5)A, 250V                                    | 0.1A, 125/250VAC                    |   |  |  |
| 2             | 3(1)A, 250V                                        | 3A, 125/250VAC<br>1/10HP, 250VAC    |   |  |  |
| 3             | 6(2)A, 250V                                        | 5A, 1/4HP, 125/250VAC               |   |  |  |
| 4             | 10(3)A, 250V                                       | 10A, 1/2HP, 125/250VAC              |   |  |  |
| 5             | 16(4)A, 250V<br>10(3)A, 400V~<br>(Std. force only) | 15A, 1/2HP, 125/250VAC              |   |  |  |
| 8             | 21(8)A, 250V                                       | 21A, 1HP, 125VAC<br>2HP, 250VAC     |   |  |  |
| 9             | N/A                                                | 10A, 1/2HP, 125/250VAC<br>6A, 30VDC |   |  |  |

EN standard on all D4 European designs.

| Mounting Holes                               | 3  |    |    | Oper. Force | Temp. Index |
|----------------------------------------------|----|----|----|-------------|-------------|
|                                              | NO | NC | DT |             |             |
|                                              | 1  | 2  | 3  |             |             |
|                                              | 7  | 8  | 9  |             |             |
|                                              | G  | H  | M  |             |             |
| European Metric Mounting Holes (EN Standard) | N  | P  | R  | Light       | 125°C       |
|                                              | S  | T  | U  |             |             |
|                                              |    |    |    | Light       | 150°C       |

| Code | Terminal Type                                       | inches (mm) |
|------|-----------------------------------------------------|-------------|
| A1   | Welding                                             |             |
| B8   | Short Solder*                                       |             |
| C1   | 0.110 x 0.032 (2.8 x 0.8) QC, Bifurcated Straight** |             |
| C3   | 0.110 x 0.032 (2.8 x 0.8) QC, Bifurcated Dog Leg**  |             |
| P4   | 0.047 x 0.020 (1.2 x 0.5) PCB, Underside*           |             |
| P5   | 0.047 x 0.020 (1.2 x 0.5) PCB, Rear*                |             |
| PA   | 0.047 x 0.032 (1.2 x 0.8) PCB, Housing Side*        |             |
| PB   | 0.047 x 0.032 (1.2 x 0.8) PCB, Cover Side*          |             |
| Q1   | 0.187 x 0.032 (4.8 x 0.8) QC Straight*              |             |
| Q3   | 0.187 x 0.032 (4.8 x 0.8) QC Dog Leg*               |             |
| R1   | 0.187 x 0.020 (4.8 x 0.8) QC, Straight**            |             |
| R3   | 0.187 x 0.020 (4.8 x 0.5) QC, Dog Leg**             |             |
| S1   | Solder with Temp. Stop                              |             |
| V1   | 0.250 x 0.032 (6.3 x 0.8) QC, Straight              |             |
| V3   | 0.250 x 0.032 (6.3 x 0.8) QC, Dog Leg               |             |
| W9   | Screw*                                              |             |
| Y5   | 0.250 x 0.032 (6.3 x 0.8) QC, 5mm Grid              |             |
| Z5   | 0.250 x 0.032 (6.3 x 0.8) QC, 7mm Grid              |             |

\* Not available for D48 European versions.  
\*\* Not available for D45 or D48 versions.

| Code | Actuator Type  | D            |             |             |
|------|----------------|--------------|-------------|-------------|
|      |                | Code A       | Code D      | Code L      |
| AA   | Button         | —            | —           | —           |
| J    | SS Lever SR    | 0.835 (21.2) | 1.4 (35.6)  | 2.75 (69.9) |
| K    | SSLever HR     | 1.01 (25.7)  | —           | 2.93 (74.4) |
| L    | Lever SR       | 0.835 (21.2) | 1.4 (35.6)  | 2.75 (69.9) |
| M    | Lever HR       | 1.01 (25.7)  | —           | 2.93 (74.4) |
| R    | Roller SR      | 0.811 (20.6) | 1.34 (34.1) | —           |
| S    | Sim. Roller SR | 0.811 (20.6) | —           | —           |
| T    | Roller HR      | 0.988 (25.1) | 1.52 (38.6) | —           |
| U    | Sim. Roller HR | 0.988 (25.1) | —           | —           |

SR = Standard Ratio, Back Hole • HR = High Ratio, Front Hole  
Additional actuators available upon request.