

# 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

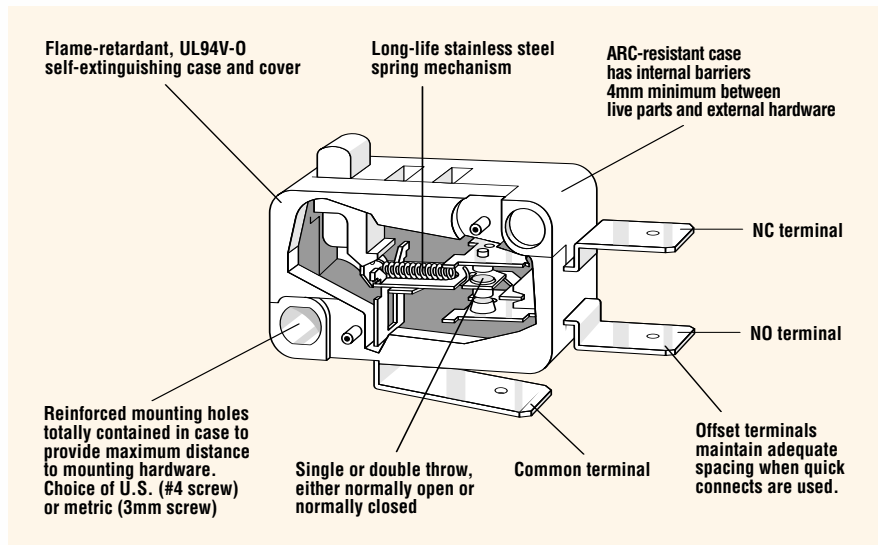
Standard D4 series switches with metric mounting holes automatically carry ENEC approval. D4 series switches with U.S. mounting holes have optional VDE approval. Contact factory for part number. Switches with straight terminals may require insulated connectors for international approval.

## 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                       |

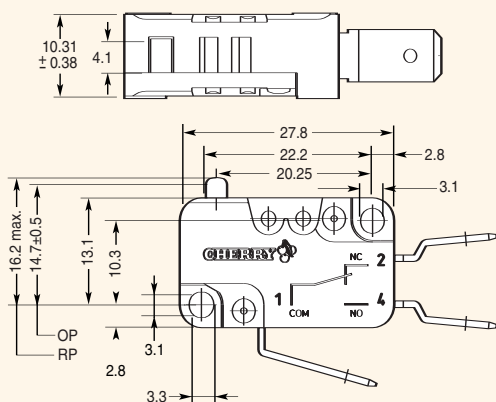
### Materials

|                     |                                                                                                                                                                                   |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Case:               | Thermoplastic Polyester (PBT), European Versions (PET)                                                                                                                            |
| Actuating Button:   | Thermoplastic Acetal (POM), 85°C<br>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)<br>Brass (D45, European versions)<br>Copper (D45, US Versions)<br>Silver-Plated Copper (D48, US versions)<br>Copper (D48, European versions) |
| Moving Blade:       | Brass (D40, D41, D42, D43)<br>Beryllium Copper (D44, D45, D48)                                                                                                                    |
| Contacts:           | Gold Crosspoint (D40, D41)<br>Silver Alloy (D42, D43, D44, D45, D48, D49)                                                                                                         |

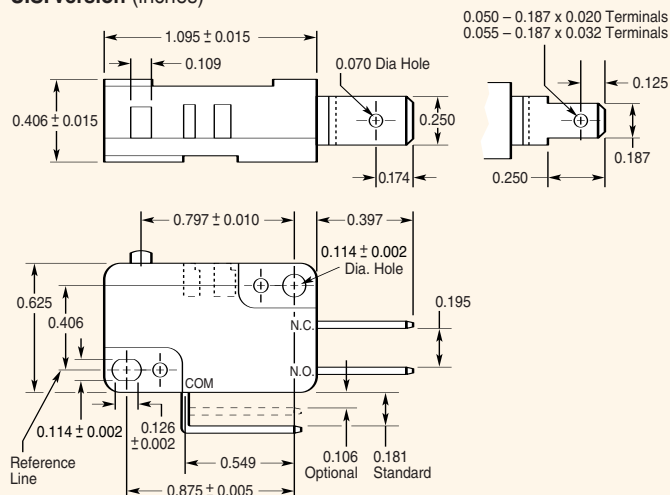


## Dimensions

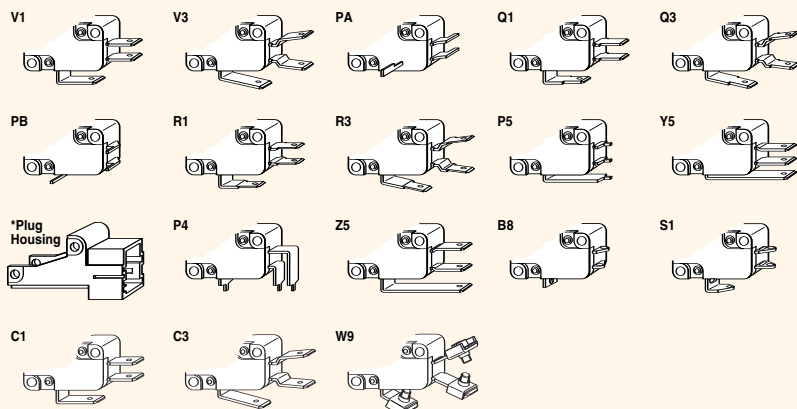
### European Version (mm)



### U.S. Version (inches)

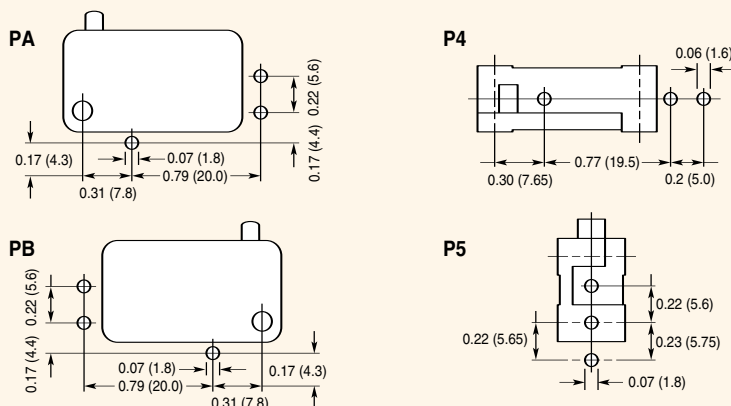


## Terminals



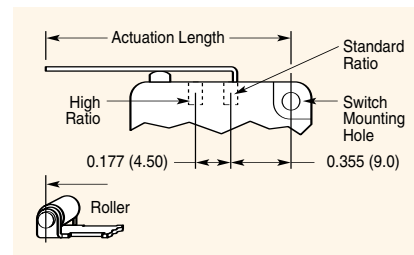
\*Connector Part #623-0518 (mates with Y5 only).

## 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 |                                |                 |                              |                              |                                 |                 |                                        |                 |                              |
| AA            |  | 75 / 15                        | 170 / 45           | 285 / 75           | 400 / 100          | — / 120            | 285 / 75           | 0.047<br>(1.19)                | 0.070<br>(1.78) | 0.558/0.598<br>(14.17/15.19) | 0.537/0.577<br>(13.64/14.66) | 0.050<br>(1.27)                 | 0.035<br>(0.89) | 0.010<br>(0.25)                        | 0.010<br>(0.25) | —                            |
| LA            |  | 75 / 15                        | 170 / 45           | 285 / 75           | 400 / 100          | — / 183            | 285 / 75           | 0.062<br>(1.57)                | 0.063<br>(1.60) | 0.580/0.620<br>(14.73/15.75) | 0.578/0.618<br>(14.70/15.70) | 0.050<br>(1.27)                 | 0.031<br>(0.80) | 0.016<br>(0.41)                        | 0.011<br>(0.30) | 0.865<br>(21.97)             |
| LD*†          |  | 35 / 8                         | 86 / 23            | 144 / 37           | 200 / 51           | — / 77             | 144 / 37           | 0.125<br>(3.18)                | 0.150<br>(3.80) | 0.555/0.645<br>(14.10/16.38) | 0.563/0.657<br>(14.0/16.4)   | 0.085<br>(2.16)                 | 0.071<br>(1.80) | 0.030<br>(0.76)                        | 0.031<br>(0.80) | 1.40<br>(35.56)              |
| MD*††         |  | 20 / 5                         | 51 / 14            | 86 / 23            | 120 / 30           | — / 46             | 86 / 30            | 0.222<br>(5.59)                | 0.252<br>(6.40) | 0.525/0.675<br>(13.34/17.15) | 0.535/0.661<br>(13.6/16.8)   | 0.130<br>(3.30)                 | 0.126<br>(3.20) | 0.050<br>(1.27)                        | 0.051<br>(1.30) | 1.580<br>(40.13)             |
| JL*†††        |  | 17 / 3.5                       | 38 / 10            | 63 / 17            | 90 / 22            | — / 36             | 63 / 17            | 0.300<br>(7.62)                | 0.347<br>(8.80) | 0.500/0.700<br>(12.70/17.78) | 0.472/0.724<br>(12.0/18.4)   | 0.187<br>(4.75)                 | 0.169<br>(4.30) | 0.065<br>(1.65)                        | 0.067<br>(1.70) | 2.757<br>(70.03)             |
| RA            |  | 75 / 15                        | 170 / 45           | 285 / 75           | 400 / 100          | — / —              | 285 / 75           | 0.047<br>(1.19)                | —               | 0.776/0.836<br>(19.71/21.33) | —                            | 0.040<br>(1.02)                 | —               | 0.010<br>(0.25)                        | —               | 0.810<br>(20.57)             |
| RD            |  | 35 / 8                         | 86 / 22            | 144 / 37           | 200 / 50           | — / —              | 144 / 37           | 0.125<br>(3.18)                | —               | 0.761/0.851<br>(19.33/21.62) | —                            | 0.085<br>(2.16)                 | —               | 0.030<br>(0.76)                        | —               | 1.240<br>(34.04)             |
| TD            |  | 25 / 5                         | 51 / 14            | 86 / 22            | 120 / 30           | — / —              | 86 / 22            | 0.200<br>(5.08)                | —               | 0.731/0.881<br>(18.57/22.38) | —                            | 0.120<br>(3.05)                 | —               | 0.040<br>(1.02)                        | —               | 1.512<br>(38.51)             |
| GD            |  | 35 / 8                         | 86 / 33            | 144 / 47           | 200 / 50           | — / —              | 144 / 37           | 0.125<br>(3.18)                | —               | 1.000/1.090<br>(25.40/27.69) | —                            | 0.085<br>(2.16)                 | —               | 0.030<br>(0.76)                        | —               | 1.340<br>(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          | EN61058         | UL1054                           | Mounting Holes                   | NO                                      | NC | DT | Oper. Force | Temp. Index | Code | Actuator Type   | Code          | Actuation Length inches (mm) |               |  |
| 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                 |                                  | 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 1/10HP, 250VAC    |                                  | 4                                       | 5  | 6  | Light       | 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            |                                  |                                         |    |    |             |             | 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             | N/A             | 15A, 1/2HP, 125/250VAC           |                                  |                                         |    |    |             |             | J    | SS Lever SR     | —             | —                            | 2.757 (70.03) |  |
| 8             | N/A             | 21A, 1HP, 125VAC 2HP, 250VAC     |                                  |                                         |    |    |             |             | K    | SS Lever HR     | —             | —                            | 2.932 (74.47) |  |
| 9             | N/A             | 10A, 1/2HP, 125/250VAC 6A, 30VDC |                                  |                                         |    |    |             |             | R    | Roller SR       | 0.810 (20.57) | 1.340 (34.04)                | —             |  |
|               |                 |                                  | Code                             | Terminal Type inches (mm)               |    |    |             |             | T    | Roller HR       | 0.987 (25.07) | 1.516 (38.51)                | —             |  |
|               |                 |                                  | Q1                               | 0.187 x 0.032 (4.8 x 0.8) QC Straight*  |    |    |             |             | G    | 1-Way Roller SR | 0.810 (20.57) | 1.340 (34.04)                | —             |  |
|               |                 |                                  | Q3                               | 0.187 x 0.032 (4.8 x 0.8) QC Dog Leg*   |    |    |             |             | N    | 1-Way Roller HR | 0.987 (25.07) | 1.516 (38.51)                | —             |  |
|               |                 |                                  | R1                               | 0.187 x 0.020 (4.8 x 0.5) 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   |    |    |             |             |      |                 |               |                              |               |  |

VDE optional for D42–D44 with U.S. mounting holes. All D41 switches have VDE approval.

\*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) |
|---------------|-------------------------------------------------------------------------------------|--------------------------------|-----------------|-----------------|-----|--------------------------------|--------------|-----------------------------|---------------------------------|-------------|----------------------------------------|-------------|--------------------------------|--------------|------------------------------|
|               |                                                                                     | D41-D43 Std / Light            | D44 Std / Light | D45 Std / Light | D48 | D41-D45                        | D48          |                             | D41-D45                         | D48         | D41-D45                                | D48         | D41-D45                        | D48          |                              |
| AA            |    | 170 / 45                       | 285 / 75        | 400 / 100       | 150 | 0.047 (1.2)                    | 0.063 (1.6)  | 0.559/0.599 (14.2/15.2)     | 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         |    | 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*        |    | 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*        |    | 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*        |    | 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*        |    | 40 / 10                        | 60 / 17         | 90 / 22         | 35  | 0.299 (7.6)                    | 0.346 (8.8)  | 0.47/0.72 (12.0/18.4)       | 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*        |    | 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            |    | 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            |    | 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            |    | 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            |    | 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)                            | 0.02 (0.5)  | 0.937 (23.8)                   | 0.945 (24.0) | 0.988 (25.1)                 |
| UA            |   | 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            |  | 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                                   |  | V3 |  | L |  | D                            |  |
|---------------|----------------------------------------------------|-------------------------------------|--|----|--|---|--|------------------------------|--|
| Series/Prefix |                                                    |                                     |  |    |  |   |  | Code                         |  |
| Code          | EN61058                                            | UL1054                              |  |    |  |   |  | Actuation Length inches (mm) |  |
| 1             | 0.1(0.5)A, 250V                                    | 0.1A, 125/250VAC                    |  |    |  |   |  |                              |  |
| 2             | 3(1)A, 250V                                        | 3A, 125/250VAC                      |  |    |  |   |  |                              |  |
| 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 |  |    |  |   |  |                              |  |

| Mounting Holes                               |   | NO |   | NC    |       | DT |  | Oper. Force |  | Temp. Index |  |
|----------------------------------------------|---|----|---|-------|-------|----|--|-------------|--|-------------|--|
| European Metric Mounting Holes (EN Standard) | 1 | 2  | 3 | Std.  | 85°C  |    |  |             |  |             |  |
|                                              | 7 | 8  | 9 | Light | 125°C |    |  |             |  |             |  |
|                                              | G | H  | M | Light | 125°C |    |  |             |  |             |  |
|                                              | N | P  | R | Light | 150°C |    |  |             |  |             |  |
|                                              |   | S  | T | U     | Light |    |  |             |  |             |  |

| 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 0.5) 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              |             |

| Code | Actuator Type  | Code         |             |             | Actuation Length inches (mm) |  |  |
|------|----------------|--------------|-------------|-------------|------------------------------|--|--|
|      |                | A            |             |             | D                            |  |  |
| AA   | Button         | —            |             |             | —                            |  |  |
| J    | SS Lever SR    | 0.835 (21.2) | 1.4 (35.6)  | 2.75 (69.9) |                              |  |  |
| K    | SS Lever 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.

EN standard on all D4 European designs.

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