

# Key Switches

## Types US89, US90 and US91 with surround

Publication Number PB173/0619

### Application

Dewhurst key switches are designed to complement our range of pushbuttons and indicators and are available in a wide range of options such as plastic or stainless steel finishes, illumination and flat keys or round (high security) keys. They are suitably rated to cater for typical applications in lift installations requiring key switch control such as fans, lighting and transfer of car operation controls.

### Operation

All Key Switches, except spring return, are supplied for the key to remain set at 90° positions. Key removable and trapped positions are indicated overleaf.

### Construction

A lock barrel, with either a standard flat key or high security round key, or fireman triangular lock to meet EN81-72 (§5.8.1) is fixed into the switch body assembly which has stainless steel, brass or red or black plastic front finishes. The switch body is then securely fixed to a faceplate. The switch body carrying the contact blocks is designed so that any loads are not borne by the contacts.

### Technical

Weight: 103gms (max)  
 Moulded in: High grade polycarbonate  
 Environmental protection: IP54 (frontal presentation)  
 Metal front: Brushed stainless steel (standard), mirrored stainless steel, brass & mirrored brass (optional)  
 Approved to: UL, CSA, LUL  
 Conforms to: BSEN60947-3, IEC 60947-3, VDE 0660 Part 107

### Rating

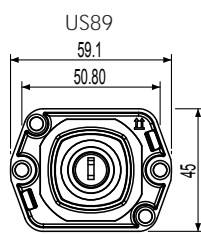
5A@240V a.c.15, 6.0A@110V d.c., 20A@24V d.c.

Maximum wire gauge per terminal is 2 x 2.5mm<sup>2</sup>.

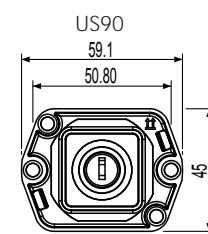
The Key Switches can be supplied loose, or incorporated into stations with 1.5mm, 2.5mm stainless steel or 3mm brass faceplates with a vertical pitch of 50mm and horizontal pitch of 60mm. Spacers are provided to enable flush mounting.

### Marking

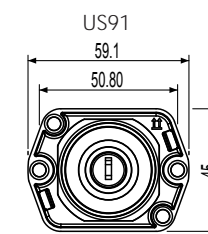
Functions and designations can be marked on the faceplate.



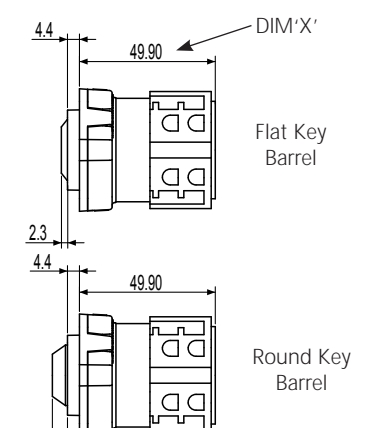
US89  
59.1  
50.80  
45



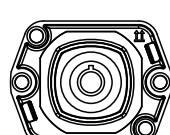
US90  
59.1  
50.80  
45



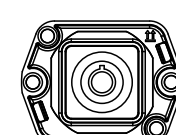
US91  
59.1  
50.80  
45



4.4, 49.90, DIM 'X', Flat Key Barrel, 2.3, 4.4, 49.90, Round Key Barrel, 5.6



Fireman's (FR)  
Available in all shapes (US89/90/91)



LED halo illumination (red) (flat key only)

**LED:**

Voltage: 24V d.c. ±20%

Current: 20mA

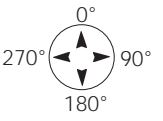
Wire colours: +V (red), -V (black)

Cable length: 100mm

| DIM 'X' | CONTACT ARRANGEMENT             |
|---------|---------------------------------|
| 41.60   | A, D, G, H, K, L, P, Q, U, R    |
| 49.90   | B, C, E, F, I, J, M, N, S, T, W |
| 59.20   | X                               |
| 68.50   | V                               |

|                   | Movement    | Flat key type & release | Round key type & release | Contact options            |
|-------------------|-------------|-------------------------|--------------------------|----------------------------|
| Standard Movement | 0°-90°      | F1 F2                   | R1 R2                    | A or B or C only           |
|                   | 270°-0°     | F1 F2                   | R1 R5                    | D or E or F only           |
|                   | 270°-0°-90° | F1 F2                   | R1 R2 R3 R5              | G or H or I or J or T only |
|                   | 360°        | F1 F2                   | R6 R4                    | K or L or M or N only      |
| Spring Movement   | 0°-45°      | F1                      | R1                       | P or Q or R only           |
|                   | 315°-0°-45° | F1                      | R1                       | S or U or W or X only      |

Key positions:



### ORDERING

To order, combine the finish and the mechanical. For example, if you require a US91 deep keyswitch in brush stainless steel to go 0-90° with a flat key and contact A, the code is KUS91D BS F1 A.

To order equivalents of commonly used Dewhurst keyswitches you need to use the following codes for the last three digits.

| Flat Key |     | Round Key |     |
|----------|-----|-----------|-----|
| KA-R     | F2M | KA-R      | R4M |
| KA-T     | F1M | KA-T      | R6M |
| KB-R     | F2A | KB-R      | R2A |
| KB-T     | F1A | KB-T      | R1A |
| KS       | F1Q | KS        | R1Q |

Please remember to include in the code the first seven digits to indicate style, finish and illumination.

BS = Brushed Stainless Steel, MS = Mirror Stainless Steel, BB = Brushed Brass, MB = Mirrored Brass

| Options | Style/shape  |             |            | Finish          |          | Mechanical                                    |                                     | Halo Illumination |
|---------|--------------|-------------|------------|-----------------|----------|---|-------------------------------------|-------------------|
|         | Obround US89 | Square US90 | Round US91 | Stainless Steel | Brass    | Key type & release option                     | Contact Arrangement                 | H24 = Halo        |
| Code    | KUS89D       | KUS90D      | KUS91D     | BS<br>MS        | BB<br>MB | Select one of F1/F2 or R1-R6<br>FR = FIREMANS | Select one of A-Y using table below |                   |

| A       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | -    | -    |
| 3 - 4   | O            | C   | -    | -    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

MOVEMENT 90°

| G       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | -    | O    |
| 3 - 4   | O            | C   | -    | C    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

MOVEMENT 180°

| M       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | C    | C    |
| 3 - 4   | C            | C   | O    | C    |
| 5 - 6   | C            | O   | O    | O    |
| 7 - 8   | O            | O   | C    | O    |

MOVEMENT 360°

| T       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | C            | O   | -    | O    |
| 3 - 4   | O            | C   | -    | O    |
| 5 - 6   | O            | O   | -    | C    |
| -       | -            | -   | -    | -    |

MOVEMENT 180°

| B       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | -    | -    |
| 3 - 4   | O            | C   | -    | -    |
| 5 - 6   | O            | C   | -    | -    |
| 7 - 8   | O            | C   | -    | -    |

MOVEMENT 90°

| H       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | -    | O    |
| 3 - 4   | C            | O   | -    | O    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

MOVEMENT 180°

| N       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | C    | C    |
| 3 - 4   | C            | C   | O    | C    |
| 5 - 6   | O            | C   | C    | C    |
| 7 - 8   | C            | C   | O    | C    |

MOVEMENT 360°

| U       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 45° | 270° | 315° |
| 1 - 2   | O            | C   | -    | C    |
| 3 - 4   | C            | O   | -    | O    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

SPRING RETURN TO 0°

| C       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | -    | -    |
| 3 - 4   | C            | O   | -    | -    |
| 5 - 6   | O            | C   | -    | -    |
| 7 - 8   | C            | O   | -    | -    |

MOVEMENT 90°

| I       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | -    | O    |
| 3 - 4   | C            | O   | -    | C    |
| 5 - 6   | O            | O   | -    | C    |
| 7 - 8   | C            | C   | -    | O    |

MOVEMENT 180°

| P       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 45° | 180° | 270° |
| 1 - 2   | O            | C   | -    | -    |
| 3 - 4   | O            | C   | -    | -    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

SPRING RETURN TO 0°

| V       | KEY POSITION |     |     |      |      |      |      |      |
|---------|--------------|-----|-----|------|------|------|------|------|
| CONTACT | 0°           | 45° | 90° | 135° | 180° | 225° | 270° | 315° |
| 1 - 2   | C            | O   | O   | O    | O    | O    | O    | O    |
| 3 - 4   | O            | O   | O   | O    | C    | O    | O    | O    |
| 5 - 6   | O            | C   | O   | O    | O    | O    | O    | C    |
| 7 - 8   | O            | O   | O   | O    | O    | C    | O    | O    |
| 9 - 10  | O            | O   | C   | O    | O    | O    | O    | O    |
| 11 - 12 | O            | O   | O   | O    | O    | O    | C    | O    |
| 13 - 14 | O            | O   | O   | C    | O    | O    | O    | O    |
| 15 - 16 | O            | O   | O   | O    | O    | O    | O    | C    |

MOVEMENT 360°

| D       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | -   | -    | C    |
| 3 - 4   | O            | -   | -    | C    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

MOVEMENT 90°

| J       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | -    | O    |
| 3 - 4   | O            | C   | -    | O    |
| 5 - 6   | O            | O   | -    | C    |
| 7 - 8   | O            | O   | -    | C    |

MOVEMENT 180°

| Q       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 45° | 180° | 270° |
| 1 - 2   | O            | C   | -    | -    |
| 3 - 4   | C            | O   | -    | -    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

SPRING RETURN TO 0°

| W       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | C            | O   | O    | O    |
| 3 - 4   | O            | O   | C    | O    |
| 5 - 6   | O            | C   | O    | O    |
| 7 - 8   | O            | O   | O    | C    |

MOVEMENT 360°

| E       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | -   | -    | C    |
| 3 - 4   | O            | -   | -    | C    |
| 5 - 6   | O            | -   | -    | C    |
| 7 - 8   | O            | -   | -    | C    |

MOVEMENT 90°

| K       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | O    | C    |
| 3 - 4   | C            | O   | C    | O    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

MOVEMENT 360°

| R       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 45° | 180° | 270° |
| 1 - 2   | C            | O   | -    | -    |
| 3 - 4   | C            | O   | -    | -    |
| 5 - 6   | -            | -   | -    | -    |
| 7 - 8   | -            | -   | -    | -    |

SPRING RETURN TO 0°

| X       | KEY POSITION |     |      |   |
|---------|--------------|-----|------|---|
| CONTACT | 0°           | 45° | 315° | - |
| 1 - 2   | O            | C   | O    | - |
| 3 - 4   | O            | C   | O    | - |
| 5 - 6   | O            | C   | O    | - |
| 7 - 8   | O            | O   | C    | - |
| 9 - 10  | O            | O   | C    | - |
| 11 - 12 | O            | O   | C    | - |

SPRING RETURN TO 0°

| F       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | -   | -    | C    |
| 3 - 4   | C            | -   | -    | O    |
| 5 - 6   | O            | -   | -    | C    |
| 7 - 8   | C            | -   | -    | O    |

MOVEMENT 90°

| L       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | C            | O   | O    | C    |
| 3 - 4   | O            | O   | O    | C    |
| -       | -            | -   | -    | -    |
| -       | -            | -   | -    | -    |

MOVEMENT 360°

| S       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 45° | 270° | 315° |
| 1 - 2   | O            | C   | -    | O    |
| 3 - 4   | O            | C   | -    | O    |
| 5 - 6   | O            | O   | -    | C    |
| 7 - 8   | O            | O   | -    | C    |

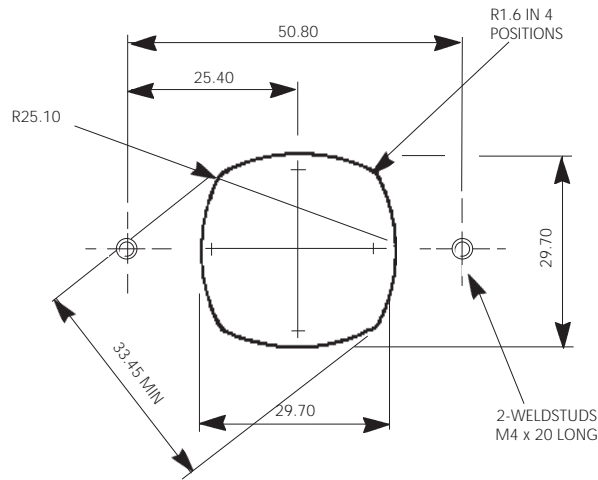
SPRING RETURN TO 0°

| Y       | KEY POSITION |     |      |      |
|---------|--------------|-----|------|------|
| CONTACT | 0°           | 90° | 180° | 270° |
| 1 - 2   | O            | C   | O    | -    |
| 3 - 4   | C            | O   | C    | -    |
| 5 - 6   | O            | O   | C    | -    |
| 7 - 8   | C            | C   | O    | -    |

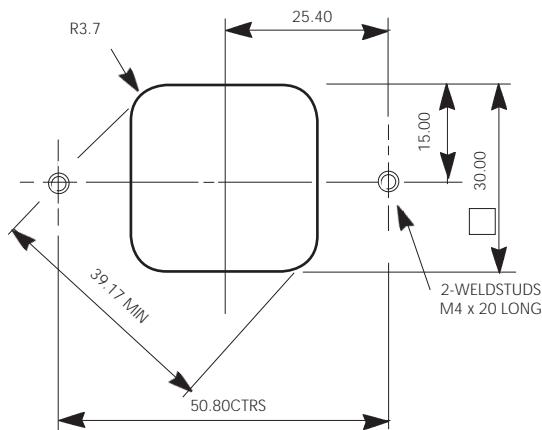
MOVEMENT 180°

Key  
CONTACT = Contact block terminal numbers  
O = Open  
C = Closed

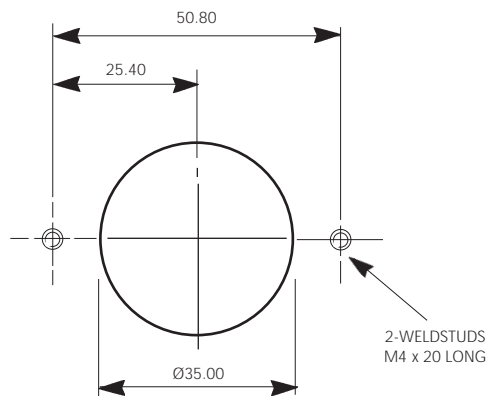
### US89 CUTOUT & STUD POSITIONS



### US90 CUTOUT & STUD POSITIONS



### US91 CUTOUT & STUD POSITIONS



**Note:** The current design keyswitches also have diagonal fixings to allow upgrading/replacement without the need to re-stud faceplates.