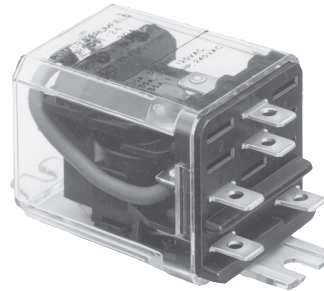


**KUHP Series Panel Relay**

- AC coils 6 to 277VAC 50/60Hz, DC 6 to 110VDC
- Contact arrangement up to 2 form C (CO)
- .250" combination push-on/solder terminals or PC terminals
- Side flange and top flange mounting
- Designed to meet VDE space requirements: Class B coil insulation



Typical applications  
Commercial HVAC, smart-grid communications controllers, baggage handling, pumps.



**Approvals**

UL E22575; CSA LR15734  
Technical data of approved types on request.

| Contact Data                  | 1 pole  | 2 pole  |
|-------------------------------|---|---|
| Contact arrangement           | 1 form C (CO)<br>1 form A (NO)<br>1 form B (NC) | 2 form C (CO)<br>2 form A (NO)<br>2 form B (NC) |
| Rated voltage                 | 240VAC  | 240VAC  |
| Rated current                 | 30A   | 20A   |
| Contact material              | AgCdO   | AgCdO, AgSnInO                                  |
| Min. recommended contact load | 300mA, 12VDC                                    | 300mA, 12VDC                                    |
| Initial contact resistance    | 200mΩ   | 200mΩ   |
| Frequency of operation        | 360 ops./hour                                   | 360 ops./hour                                   |
| Operate/release time max.     | 20/20ms   | 20/20ms   |
| Bounce time max.              | 20ms  | 20ms  |

**Contacts ratings**

| Type                 | Load                 | Cycles                   |
|----------------------|----------------------|--------------------------|
| 1 pole, AgCdO        | 30A, 240VAC          | 100x10 <sup>3</sup> ops. |
|                      | 1HP, 120VAC          | 100x10 <sup>3</sup> ops. |
|                      | 1 1/2HP, 240VAC      | 100x10 <sup>3</sup> ops. |
|                      | 30 FLA, 96 LRA       | 100x10 <sup>3</sup> ops. |
|                      | 30A, 28 VDC          | 50x10 <sup>3</sup> ops.  |
|                      | 10A, 480VAC          | 6x10 <sup>3</sup> ops.   |
|                      | 1/2HP, 480VAC        | 25x10 <sup>3</sup> ops.  |
|                      | 1HP, 480VAC, 3 phase | 6x10 <sup>3</sup> ops.   |
|                      | 1/2HP, 600VAC        | 25x10 <sup>3</sup> ops.  |
|                      | 2 pole, AgCdO        | 20A, 240VAC              |
| 3/4HP, 120VAC        |                      | 100x10 <sup>3</sup> ops. |
| 1 1/2HP, 240VAC      |                      | 100x10 <sup>3</sup> ops. |
| 20 FLA, 83 LRA       |                      | 100x10 <sup>3</sup> ops. |
| 20A, 28 VDC          |                      | 50x10 <sup>3</sup> ops.  |
| 10A, 480VAC          |                      | 6x10 <sup>3</sup> ops.   |
| 1/2HP, 480VAC        |                      | 25x10 <sup>3</sup> ops.  |
| 1HP, 480VAC, 3 phase |                      | 6x10 <sup>3</sup> ops.   |
| 2 pole AgSnInO       | 1/2HP, 600VAC        | 25x10 <sup>3</sup> ops.  |
|                      | 20 A, 240 VAC        | 25x10 <sup>3</sup> ops.  |
| Mechanical endurance |                      | 10x10 <sup>6</sup> ops.  |

**Coil Data**

|                                     |                            |
|-------------------------------------|----------------------------|
| Coil voltage range                  | 6 to 110VDC<br>6 to 277VAC |
| Coil insulation system according UL | Class B                    |

**Coil versions, DC coil**

| Coil code | Rated voltage VDC | Operate voltage VDC | ReleaseCoil resistance Ω±10% | Rated coil power W |
|-----------|-------------------|---------------------|------------------------------|--------------------|
| 006       | 6                 | 4.5                 | 32.1                         | 1.13               |
| 012       | 12                | 9.0                 | 120                          | 1.20               |
| 024       | 24                | 18.0                | 472                          | 1.23               |
| 048       | 48                | 36.0                | 1800                         | 1.30               |
| 110       | 110               | 82.5                | 10000                        | 1.22               |

All figures are given for coil without preenergization, at ambient temperature +23°C.

**Coil versions, AC coil**

| Coil code | Rated voltage VAC | Operate voltage VAC | Coil resistance Ω±15% | Rated coil power VA |
|-----------|-------------------|---------------------|-----------------------|---------------------|
| 006       | 6                 | 5.1                 | 4.2                   | 2.8                 |
| 012       | 12                | 10.2                | 18                    | 2.8                 |
| 024       | 24                | 20.4                | 72                    | 2.8                 |
| 120       | 120               | 102.0               | 1700                  | 2.9                 |
| 240       | 240               | 204.0               | 7200                  | 2.9                 |
| 277       | 277               | 235.5               | 10250                 | 2.5                 |

All figures are given for coil without preenergization, at ambient temperature +23°C, 60 Hz.

**Insulation Data**

|                               |  |                      |
|-------------------------------|--|----------------------|
| Initial dielectric strength   |  |                      |
| between open contacts         |  | 1200V <sub>rms</sub> |
| between contact and coil      |  | 3750V <sub>rms</sub> |
| between adjacent contacts     |  | 3750V <sub>rms</sub> |
| between coil and frame        |  | 2000V <sub>rms</sub> |
| Initial insulation resistance |  |                      |
| between insulated elements    |  | 100MΩ at 500VDC      |

**Other Data**

|                                      |  |  |
|--------------------------------------|--|--|
| Ambient temperature                  |  |  |
| DC coil                              |  | -45°C to 70°C                                |
| AC coil                              |  | -45°C to 45°C                                |
| Category of environmental protection |  |  |
| IEC 61810                            |  | RTI - dust protected and<br>RTO - open style |
| Terminal type                        |  | QC.250, PCB .047                             |
| Terminal retention, push force       |  |  |
| QC .205                              |  | 17lbs for 3s                                 |
| QC .110, QC .187, QC .250, all PCB   |  | 25lbs for 3s                                 |
| Weight                               |  | 92g  |
| Packaging/unit                       |  | tray/25 pcs., box/150pcs.                    |

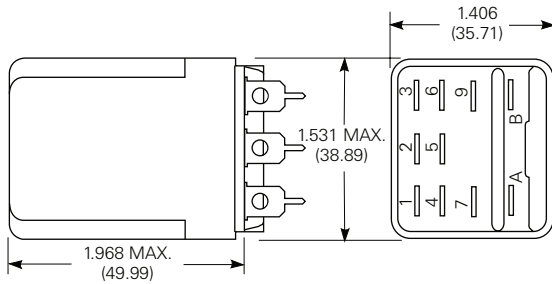
**Accessories**

NOTE: no sockets are available for this relay

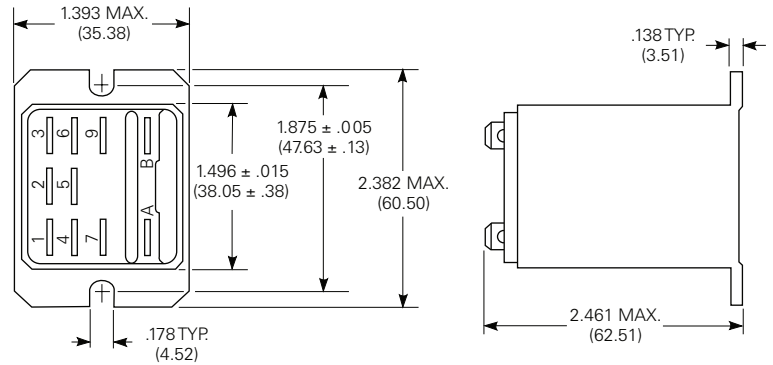
**KUHP Series Panel Relay (Continued)**

**Dimensions**

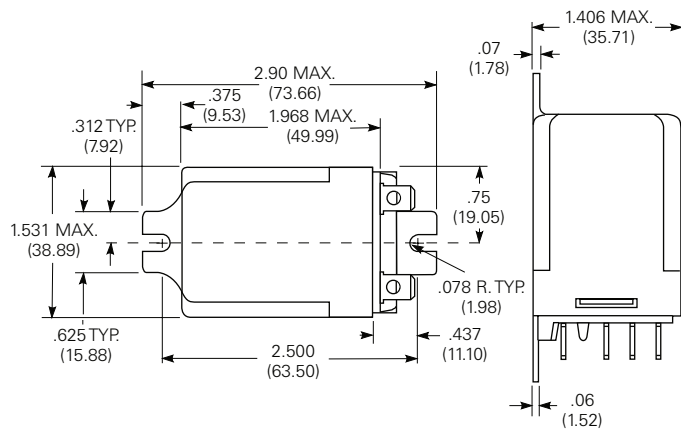
Plain case



Top flange enclosure

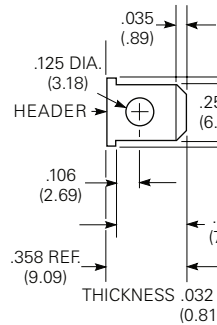


Bracket mount case

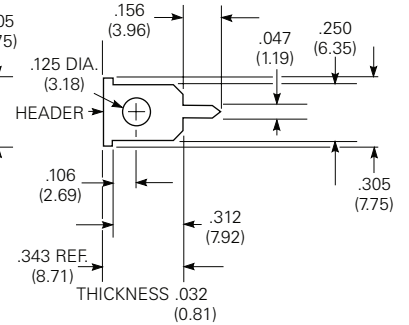


**Terminal dimensions**

6.35mm (.250") Quick Connect/Solder



Printed circuit

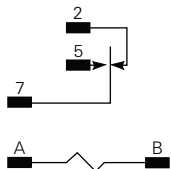


**Terminal assignment**

1 form C

1 form A (delete 2)

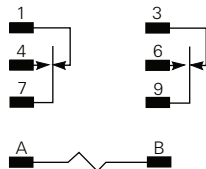
1 form B (delete 5)



2 form C

2 form A (delete 1 and 3)

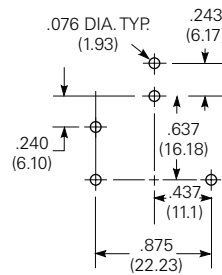
2 form B (delete 4 and 6)



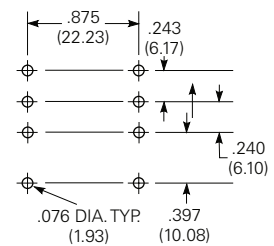
**PCB layout**

Bottom view on solder pins

1 pole version



2 pole version



**KUHP Series Panel Relay** (Continued)

|  |  |   |  |             |                    |          |          |          |             |
|--|--|---|--|-------------|--------------------|----------|----------|----------|-------------|
| <b>Product code structure</b>                                      |  | Typical product code  |  | <b>KUHP</b> | <b>11</b>          | <b>A</b> | <b>5</b> | <b>1</b> | <b>-120</b> |
| <b>Type</b>  |  |   |  |             |                    |          |          |          |             |
| <b>KUHP</b> Enclosed Panel Plug-in Relay, 20/30A                   |  |   |  |             |                    |          |          |          |             |
| <b>KUH</b> Open Panel Plug-in Relay 20/30A                         |  |   |  |             |                    |          |          |          |             |
| <b>Contact arrangement and rating</b>                              |  |   |  |             |                    |          |          |          |             |
| <b>1</b> 1 form A (NO); 30A  |  | <b>7</b> 2 form A (NO); 20A                                   |  |             |                    |          |          |          |             |
| <b>2</b> 1 form B (NC); 30A  |  | <b>8</b> 2 form B (NC); 20A                                   |  |             |                    |          |          |          |             |
| <b>5</b> 1 form C (CO); 30A  |  | <b>11</b> 2 form C (CO); 20A                                  |  |             |                    |          |          |          |             |
| <b>Coil Input</b>  |  |   |  |             |                    |          |          |          |             |
| <b>A</b> AC, 50/60Hz   |  | <b>D</b> DC   |  |             |                    |          |          |          |             |
| <b>Mountings</b>   |  |   |  |             |                    |          |          |          |             |
| <b>KUHP options</b>  |  |   |  |             | <b>KUH options</b> |          |          |          |             |
| <b>1</b> Plain case  |  | <b>1</b> #6-32 stud, 0.218" locating tab                      |  |             |                    |          |          |          |             |
| <b>5</b> Bracket mount case  |  | <b>4</b> #6-32 tapped core, 0.218" locating tab               |  |             |                    |          |          |          |             |
| <b>T</b> Top flange mount case                                     |  |   |  |             |                    |          |          |          |             |
| <b>Terminals and contact materials</b>                             |  |   |  |             |                    |          |          |          |             |
| <b>1</b> .250" (6.35mm) quick connect/solder; silver-cadmium oxide |  | <b>7</b> .047" (1.19mm) printed circuit; silver-cadmium oxide |  |             |                    |          |          |          |             |
| <b>P</b> .250" quick connect/solder; silver tin oxide indium oxide |  | <b>S</b> .047" printed circuit; silver tin oxide indium oxide |  |             |                    |          |          |          |             |
| <b>Coil voltage</b>  |  |   |  |             |                    |          |          |          |             |
| Coil code: please refer to coil versions table                     |  |   |  |             |                    |          |          |          |             |

| Product Code   | Arrangement    | Mounting   | Coil   | Terminals           | Part Number |
|----------------|----------------|------------|--------|---------------------|-------------|
| KUHP-5DT1-12   | 1 form C, 1 CO | top flange | 12VDC  | .250" quick connect | 8-1393114-7 |
| KUHP-5DT1-24   |                |            | 24VDC  |                     | 8-1393114-8 |
| KUHP-5D51-24   |                | bracket    |        |                     | 9-1393114-1 |
| KUHP-5D51-12   |                |            |        |                     | 12VDC       |
| KUHP-5A51-24   |                |            | 24VAC  |                     | 8-1393114-5 |
| KUHP-5A51-120  |                |            | 120VAC |                     | 8-1393114-4 |
| KUHP-5AT1-120  |                | top flange |        |                     | 8-1393114-1 |
| KUHP-11A51-24  |                | bracket    | 24VAC  |                     | 7-1393114-0 |
| KUHP-11A51-240 | 2 form C, 2 CO |            | 240VAC |                     | 7-1393114-1 |
| KUHP-11AT1-120 |                | top flange | 120VAC |                     | 6-1393114-5 |
| KUHP-11DT1-24  |                |            | 24VDC  |                     | 7-1393114-3 |
| KUHP-11D51-12  |                | bracket    | 12VDC  |                     | 7-1393114-7 |
| KUHP-11D51-24  |                |            | 24VDC  |                     | 7-1393114-8 |
| KUHP-11DT1-12  |                | top flange | 12VDC  |                     | 7-1393114-2 |

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