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# KUL Series Latching Panel Plug-in Relay

- **Magnetic latching relay**
- **Single or dual wound DC coils or single wound AC coils**
- **1, 2, and 3 pole Form C contact arrangement**
- **Reset occurs by reversing polarity in a single coil relay or by energizing the reset winding in dual coil relays**
- **Various mounting and socket styles**




Typical applications
Alarm systems, machine tools, battery chargers, process and power controls, pressure washers, paving equipment

## Approvals

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

## Contact Data

| | | |
|---|---|---|
| Contact arrangement | 1 form C (CO), 2 form C (CO), 3 form C (CO) | |
| Rated voltage | 240VAC | |
| Rated current | 10A | |
| Contact material | Ag | AgCdO |
| Min. recommended contact load | 100mA, 12VDC | 300mA, 12VDC |
| Frequency of operation | 360 ops./hour | |
| Operate/release time max. | 25/25ms | |

**Contact ratings**

| Type | Load | Cycles |
|---|---|---|
| **UL 508** | | |
| Ag | | |
| | 5A, 240VAC | $100x10^3$ |
| | 1/6HP, 120VAC | |
| | 1/3HP, 240VAC | |
| | 0.5A, 120VDC | |
| | 2.5A, 120VAC, tungsten | |
| AgCdO | | |
| | 10A, 250VAC | $100x10^3$ |
| | 1/3HP, 120VAC | |
| | 1/2HP, 250VAC | |
| | 5A, 120VAC, tungsten | |
| | 0.5A, 125VDC | |
| | 10A, 28VDC | $100x10^3$ |
| | 10FLA, 30LRA, 125VAC | |
| | 5FLA, 15LRA, 250VAC | |
| | 125VA, pilot duty, 125/250VAC | |
| Mechanical endurance | $10x10^6$ ops. | |

## Coil Data

| | |
|---|---|
| Coil voltage range | 12 to 110VDC (single and dual coil)<br>24 to 240VAC (single coil)<br>24 to 120VAC (dual coil) |
| Coil insulation system according UL | Class B |

**Coil versions, DC coil 1)**

| Coil code | Rated voltage VDC | Operate voltage VDC | Coil resistance Ω±10% | Rated coil power W |
|---|---|---|---|---|
| Single coil | | | | |
| 12 | 12 | 9.0 | 120 | 1.2 |
| 24 | 24 | 18.0 | 472 | 1.25 |
| 48 | 48 | 36.0 | 1800 | 1.3 |
| 110 | 110 | 82.5 | 10000 | 1.25 |
| Dual coil 2) | | | | |
| 12 | 12 | 9.0 | 90 | 1.6 |
| 24 | 24 | 18.0 | 350 | 1.65 |
| 48 | 48 | 36.0 | 1400 | 1.65 |
| 110 | 110 | 82.5 | 7400 | 1.65 |

1) Latch and reset coil voltages and resistances are the same (unlike coils on request).
2) Dual coil available only with 1 or 2 form C contacts.
All figures are given for coil without preenergization, at ambient temperature +23°C.

**Coil versions, AC coil 3)**

| Coil code | Rated voltage VAC | Operate voltage VAC | Latch coil resistance Ω±15% | Reset coil resistance Ω±15% | Reset coil resistor Ω |
|---|---|---|---|---|---|
| Single coil | | | | | |
| 24 | 24 | 20.4 | 176 | – | 680 |
| 120 | 120 | 102.0 | 3700 | – | 15000 |
| 240 | 240 | 204.0 | 179000 | – | 68000 |
| Dual coil | | | | | |
| 24 | 24 | 20.4 | 100 | 250 | – |
| 120 | 120 | 102.0 | 2525 | 2200 | 5600 |

3) AC coils use diodes. Diodes and resistors included inside relay with 1 and 2 Form C contacts. For 3 Form C relay, the customer must furnish and wire diodes and resistors externally (1N4007 is recommended diode).
All figures are given for coil without preenergization, at ambient temperature +23°C.

## Insulation Data

| | |
|---|---|
| Initial dielectric strength | |
| between open contacts | $500V_{rms}$ |
| between contact and coil | $1500V_{rms}$ |
| between adjacent contacts | $1500V_{rms}$ |
| Initial insulation resistance | |
| between insulated elements | 100MΩ |



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## KUL Series Latching Panel Plug-in Relay (Continued)

### Other Data

| | |
|---|---|
| Material compliance: | EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customersupport/rohssupportcenter |
| Ambient temperature | |
| DC coil | Single coil: -45ºC to 70ºC<br>Dual coil: -45ºC to 50ºC |
| AC coil | Single coil: -45ºC to 70ºC |
| Category of environmental protection | |
| IEC 61810 | RTI - dust protected |
| Terminal type | Quick connects (QC) .187 |
| Weight | 96g |
| Packaging/unit | tray/25 pcs., box/150pcs. |

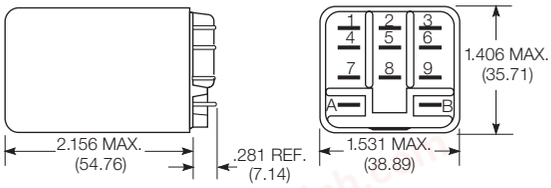
### Accessories

For details see datasheet Sockets and Accessories, KUP Relays

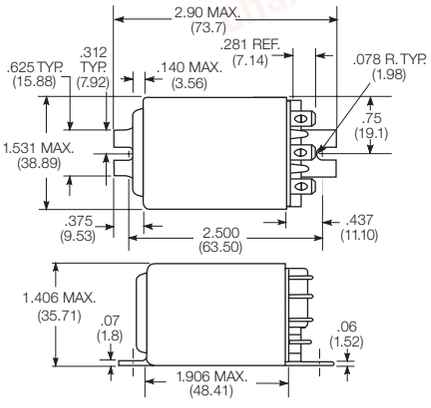
| Product Code | Description |
|---|---|
| 27E893 | DIN socket (use 20C318 clip) |
| 27E121 | Track mount socket (use 20C314 clips) |
| 27E043 | Chassis mount/solder eyelet socket (use 20C254 clip) |
| 27E046 | Chassis mount/PCB socket (use 20C254 clip) |
| 27E067 | Chassis mount/quick connect socket (use 20C254 clip) |
| 27E396 | Snap-in/quick connect socket (use 20C254 clip) |

### Dimensions

Plain case

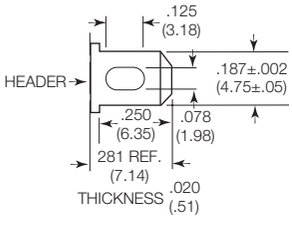



Bracket mount case




### Terminal dimensions

4.75mm (.187) quick connect






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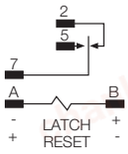
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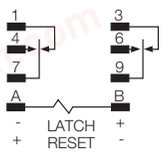
## KUL Series Latching Panel Plug-in Relay (Continued)

**Terminal assignment**
Bottom view on pins – Contact positions shown in diagrams is with the "RESET" input having been energized last.

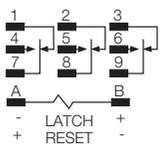
Single Coil – DC
1 Form C



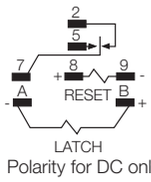

2 Form C




3 Form C

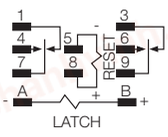



Dual Coil – AC or DC
1 Form C



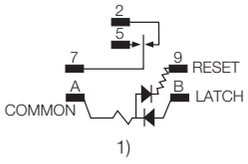

Polarity for DC only.

2 Form C

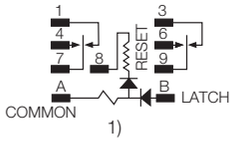



Polarity for DC only.

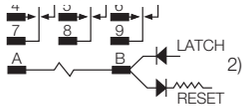
Single Coil – AC
1 Form C




2 Form C




3 Form C




1) Do not connect any low impedance loads from terminal B to A.
2) Resistor and diodes connected by customer. See Coil Data Chart for resistor value. Recommended using 1N4007 diode.

**Product code structure** — Typical product code: **KUL -11 D 1 1 D -12**

**Type**
**KUL** Enclosed magnetic latching relay

**Contact arrangement and rating**
**5** 1 form C (1 CO)
**11** 2 form C (2 CO)
**14** 3 form C (3 CO)

**Coil Input**
**A** AC
**D** DC

**Mounting and options**
**1** Socket mount (plain) case
**5** Bracket mount case

**Terminal and contact material**
**1** 4.75mm (.187in) quick connect/solder; Ag, 5A
**5** 4.75mm (.187in) quick connect/solder; AgCdO, 10A
Note: 5.21mm (.205) QC and PCB terminals available on request

**Number of coils**
**S** Single coil
**D** Dual coil

**Coil voltage**
Coil code: please refer to coil versions table

| Product Code | Arrangement | Material | Coil | Case Style | Terminals | Part Number |
|---|---|---|---|---|---|---|
| KUL-5A15S-120 | 1 Form C, 1 CO | AgCdO | 120 VAC | Plain case | Plug-in | 1393116-4 |
| KUL-11A15S-24 | 2 Form C, 2 CO | | 24 VAC | | | 2-1393115-7 |
| KUL-11A15S-120 | | | 120 VAC | | | 2-1393115-6 |
| KUL-11D15D-12 | | | 12 VDC | | | 3-1393115-1 |
| KUL-11D15D-24 | | | 24 VDC | | | 3-1393115-2 |
| KUL-11D15D-48 | | | 48 VDC | | | 3-1393115-3 |
| KUL-11D15S-12 | | | 12 VDC | | | 3-1393115-4 |
| KUL-11D15S-24 | | | 24 VDC | | | 3-1393115-5 |



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