

KHA Series Panel Plug-in Relay

- Compact package
- Two and four pole form C contact arrangements
- Polycarbonate or nylon dust cover
- Various mounting configurations
- Indicator lamp and push-to-reset options available
- Various contact materials available for specific load requirements



Typical applications

Industrial sewing/stitching machines, fitness, elevators, pumps, robotics, solar panels

Approvals

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

Contact Data

| | |
|--|---|
| Contact arrangement | 2 form C (2CO), 4 form C (4CO) |
| Rated voltage | 240VAC |
| Rated current | 1-5A |
| Contact material | Ag, AgCdO, Au-AgNi, Au overlay Ag, Au diffused Ag |
| Contact style | Single contact or bifurcated crossbar |
| Min. recommended contact load | |
| Ag (single contact) | 100mA, 12VDC |
| AgCdO (single contact) | 300mA, 12VDC |
| Au-AgNi (single contact) | 10mA, 12VDC |
| Au overlay Ag (bifurcated crossbar) | Dry circuit |
| Au diffused Ag (single contact) | 50mA, 12VDC |
| Initial contact resistance | |
| Ag, AdCdO | 100mΩ |
| Au-AgNi, Au overlay Ag, Au diffused Ag | 200mΩ |
| Frequency of operation | 360 ops./hour |
| Operate/release time max. | 13/6ms |

Contact ratings

| Type | Load | Cycles |
|----------------|-------------------------------|------------|
| UL 508 | | |
| Ag | 5A, 120VAC, general purpose | |
| | 2.5A, 240VAC, general purpose | |
| | 1/10HP, 120/240VAC | |
| | 180VA, 250VAC, pilot duty | |
| AgCdO | 42VA, 28VDC, pilot duty | |
| | 5A, 240VAC, general purpose | |
| | 5A, 28VDC, resistive | |
| | 1/10HP, 120/240VAC | |
| Au-AgNi | 180VA, 250VAC, pilot duty | |
| | 42VA, 28VDC, pilot duty | |
| | 2A, 120VAC, resistive | |
| | Au overlay Ag | 1A, 120VAC |
| Au diffused Ag | 1A, 30VDC | |
| | 5A, 120VAC, general purpose | |
| | 2.5A, 240VAC, general purpose | |
| | 1/10HP, 120/240VAC | |
| | 180VA, 250VAC, pilot duty | |
| | 42VA, 28VDC, pilot duty | |

Note: The relay should only carry ≤15A continuously (all poles combined).
Mechanical endurance 10x10⁶ ops.

Coil Data

| | |
|-------------------------------------|----------------------------|
| Coil voltage range | 5 to 240VDC 6 to 240VAC |
| 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 mW |
|-----------|-------------------|---------------------|---|---------------------|
| 5 | 5 | 3.75 | 32 | 800 |
| 6 | 6 | 4.5 | 40 | 900 |
| 12 | 12 | 9.0 | 160 | 900 |
| 24 | 24 | 18.0 | 650 | 850 |
| 48 | 48 | 36.0 | 2600 | 900 |
| 110 | 110 | 82.5 | 11000 | 1100 |
| | 220/240 | | Use 110V relay with series dropping 5W resistor of 11KΩ | |

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 |
|-----------|-------------------|---------------------|-----------------------|---------------------|
| 6 | 6 | 5.1 | 10.5 | 1.2 |
| 12 | 12 | 10.2 | 43 | 1.2 |
| 24 | 24 | 20.4 | 160 | 1.25 |
| 48 | 48 | 40.8 | 668 | 1.2 |
| 120 | 120 | 102.0 | 3900 | 1.35 |
| 240 | 240 | 204.0 | 12000 | 1.5 |

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

Insulation Data

| | |
|-------------------------------|----------------------|
| Initial dielectric strength | |
| between open contacts | 1000V _{rms} |
| between contact and coil | 1500V _{rms} |
| between adjacent contacts | 1500V _{rms} |
| between coil and frame | 1500V _{rms} |
| Initial insulation resistance | |
| between insulated elements | 100MΩ at 500VDC |

Other Data

| | |
|--------------------------------------|--|
| Material compliance: | EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customer-support/rohssupportcenter |
| Ambient temperature | -45°C to 70°C |
| Category of environmental protection | IEC 61810 RTI - dust protected |

KHA Series Panel Plug-in Relay (Continued)

Other Data (continued)

| | |
|----------------|--|
| Terminal type | solder/plug-in .105" (2.67mm), pcb-tht .112" (2.84mm) |
| Weight | 45g |
| Packaging/unit | tray/50 pcs., box/250pcs. |

Accessories

For details see datasheet Sockets and Accessories, KHA Relays

| Product Code | Description |
|--------------|--|
| 27E894 | DIN socket (use 20C426 clip) |
| 27E166 | Panel/track mount socket (use 20C297 clip) |
| 27E006 | Solder/grounding socket (use 20C217 clip) |
| 27E007 | PCB/grounding socket (use 20C217 clip) |

NOTE: Relays with contact current <50mA are not recommended for use in sockets.

Dimensions

KHAU and KHAX types



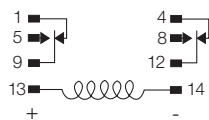
PCB terminals
KHAE and KHAF types



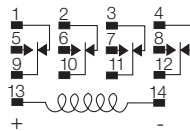
Printed circuit terminal thickness .022 (.558)

Terminal assignment

2 form C



4 form C

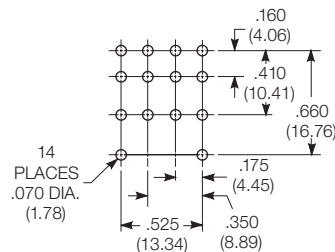


Polarity shown for LED indicator

PCB layout

Bottom view on solder pins

4 pole version



KHA Series Panel Plug-in Relay (Continued)

Product code structure

Typical product code

KHA U -17 A 1 1 B -120

Type

KHA General purpose multi-contact relay
Note: Some KHA models available in KH construction. Specify KH instead of KHA.

Version

E Printed circuit terminals, nylon dust cover, contacts rated opposite polarity (UL & CSA)
U Solder terminals, clear polycarbonate dust cover, contacts rated same polarity (UL & CSA)
F Printed circuit terminals, nylon dust cover, contacts rated same polarity (UL & CSA)
X Solder terminals, clear polycarbonate dust cover, contacts rated opposite polarity (UL & CSA)

Contact arrangement

11 2 form C (2CO) **17** 4 form C (4CO)

Coil input

A AC **D** DC

Mounting and termination

1 Socket mount, solder terminals on U versions; printed circuit terminals on E versions
T Top flange mount, solder terminals on U versions; printed circuit terminals on E versions
Note 1: Mounting options with solder terminals and stud on narrow, broad and end side on request

Contact material

1 Ag **2** AgCdO
3 Au-AgNi (Note 2) **6** Bifurcated crossbar, Au overlay Ag
8 Au diffused Ag
Note 2: contact material code 3 is not available with relay version E

Options

B Push to test button. (not available on version E relays with 4 form C contacts)
N Neon indicator. Only available with version U, 120VAC or 110VDC coils.
H Neon indicator and push to test button. Only available with version U, 120VAC or 110VDC coils
L LED indicator. Only available with version U, 6-48VAC or VDC coils.
M LED indicator and push to test button. Only available with version U, 6-46VAC or VDC coils.

Coil voltage

Coil code: please refer to coil versions table

| Product Code | Arrangement | Contact Material | Coil | Terminals | Options | Part Number |
|-----------------|----------------|---------------------------|--------|----------------|-----------------------|-------------|
| KHAU-11A11-120 | 2 form C, 2 CO | Ag | 120VAC | Solder/Plug-in | None | 1-1393122-0 |
| KHAU-11D11-24 | | | 24VDC | | | 1-1393122-5 |
| KHAE-17D12-24 | 4 form C, 4 CO | AgCdO | | PCB | | 1393122-1 |
| KHAU-17A11-12 | | Ag | 12VAC | Solder/Plug-in | | 1-1393122-9 |
| KHAU-17A11-24 | | | 24VAC | Solder | | 2-1393122-1 |
| KHAU-17A11-120 | | | 120VAC | | | 2-1393122-0 |
| KHAU-17A11N-120 | | | | | Indicator | 2-1393122-6 |
| KHAU-17A12-120 | | AgCdO | | | None | 2-1393122-8 |
| KHAU-17A13-120 | | Au-Ag-Ni | | | | 3-1393122-6 |
| KHAU-17A16-24 | | Bifurcated, Au overlay Ag | 24VAC | | | 3-1393122-8 |
| KHAU-17A16-120 | | Ag | 120VAC | | | 3-1393122-7 |
| KHAU-17A18-120 | | Au diffused Ag | | | | 3-1393122-9 |
| KHAU-17D11-6 | | Ag | 6VDC | | | 4-1393122-7 |
| KHAU-17D11-12 | | | 12VDC | | | 4-1393122-3 |
| KHAU-17D11-24 | | | 24VDC | | | 4-1393122-4 |
| KHAU-17D11-48 | | | 48VDC | | | 4-1393122-5 |
| KHAU-17D11-110 | | | 110VDC | | | 4-1393122-2 |
| KHAU-17D12-12 | | AgCdO | 12VDC | | | 5-1393122-5 |
| KHAU-17D12-24 | | | 24VDC | | | 5-1393122-7 |
| KHAU-17D12-48 | | | 48VDC | | | 5-1393122-8 |
| KHAU-17D12-110 | | | 110VDC | | | 5-1393122-4 |
| KHAU-17D16-12 | | Bifurcated, Au overlay Ag | 12VDC | | | 7-1393122-0 |
| KHAU-17D16-24 | | | 24VDC | | | 7-1393122-1 |
| KHU-17A11N-120 | | Ag | 120VAC | | Indicator, Old Const. | 2-1393123-8 |
| KHU-17D11-12 | | | 12VDC | | Old Construction | 4-1393123-0 |
| KHU-17D12-24 | | AgCdO | 24VDC | | | 4-1393123-8 |

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