

## KUP-5A15-120 Product Details




**KUP-5A15-120**

TE Internal Number: 5-1393118-9



### Industrial Relays (General Purpose)

 Converted to EU RoHS but not ELV Compliant  
(Statement of Compliance)

#### Product Highlights:

- KUP Series
- Contact - Current Class = 5A to 10A Class, Less Than 16A
- Contact - Rated Current = 10 A
- Terminal Type = Quick Connect, Solder
- Contact - Arrangement = 1 Form C (CO)

### Documentation & Additional Information

#### Product Drawings:

- None Available

#### Catalog Pages/Data Sheets:

- [KU KUP Enclosed Relay](#) (PDF, English)

#### Product Specifications:

- None Available

#### Application Specifications:

- None Available

#### Instruction Sheets:

- None Available

#### CAD Files: (CAD Format & Compression Information)

- [2D Drawing](#) (DXF, Version D)
- [3D Model](#) (IGES, Version D)
- [3D Model](#) (STEP, Version D)

#### Additional Information:

- [Product Line Information](#)

#### Additional Product Images:

- [Schematic](#)
- [Wiring Diagram](#)
- [Front View](#)

#### Related Products:

- [Tooling](#)

### Product Features (Please use the Product Drawing for all design activity)

#### Product Type Features:

- [Series](#) = KUP
- Terminal Type = Quick Connect, Solder

#### Electrical Characteristics:

- Contact - Current Class = 5A to 10A Class, Less Than 16A
- [Contact - Rated Current \(A\)](#) = 10
- Contact - Limiting Continuous Current (A) = 10
- Contact - Limiting Making Current (A) = 10
- Contact - Limiting Breaking Current (A) = 10
- Insulation - Initial Dielectric Between Coil/Contact Class = 1500V to 2500VA Class
- Insulation - Initial Dielectric Between Open Contacts (V rms) = 1200
- Insulation - Initial Dielectric Between Contacts and Coil (V rms) = 2200
- Contact - Rated Voltage (VAC) = 240
- Contact - Limiting Short-Time Current (A) = 10
- Contact - Switching Recommended Load, Min. = 300mA at 12V
- Coil - Rated Voltage (VAC) = 120
- [Coil - Resistance \(Ω\)](#) = 2250
- [Coil - Rated Power, AC \(VA\)](#) = 2.00
- Coil - Rated Power Class = 2.0VA to 3.0VA Class
- Insulation - Initial Insulation Resistance (MΩ) = 100000

#### Dimensions:

- Mechanical - Length Class = 35mm to 40mm Class
- Length (mm [in]) = 38.90 [1.550]
- Mechanical - Width Class = 30mm to 40mm Class
- Width (mm [in]) = 35.70 [1.405]
- Mechanical - Height Class = 40mm to 50mm Class
- Height (mm [in]) = 50.00 [1.970]

#### Body Features:

- Mount Type = Socket
- Weight (g [oz]) = 85.00 [2.988]

#### Contact Features:

- Contact Material = AgCdO
- Contact - Number of Poles = 1

#### Configuration Features:

- [Contact - Arrangement](#) = 1 Form C (CO)
- [Coil - Magnetic System](#) = Monostable, AC
- Coil - Special Features = UL Coil Insulation Class B

#### Industry Standards:

- [RoHS/ELV Compliance](#) = RoHS/Not ELV Compliant
- [Lead Free Solder Processes](#) = Not relevant for lead free process
- RoHS/ELV Compliance History = Converted to comply with RoHS not ELV directives
- Approved/Registered Standards = UL, CSA

#### Environmental:

- Environmental - Category of Protection = RTI
- Environmental - Ambient Temperature, Max. (°C [°F]) = 55 [131]
- Environmental - Ambient Temperature Class = 50°C to 70°C Class

#### Packaging Features:

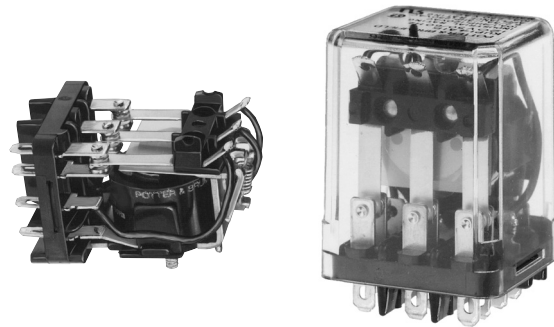
- Packaging Method = Tray

#### Other:

- Brand = Potter & Brumfield
- Accessories/Socket Type = Chassis mount Socket, DIN-rail Socket, PCB Socket, Snap-in Socket, Track mount Socket

**KUP Series Panel Plug-in Relay**

- AC coils: 5-240VAC, 50/60 Hz.; DC coils 6-110VDC
- Contact arrangements of 1 form X, 1-3 form A and 1-4 form C
- Wide selection of termination and mounting styles
- PC terminals available
- Push-to-test button and indicator lamp options
- Sockets available for panel, DIN rail or PCB mounting
- Class B coil insulation



**Typical applications**

Vending, commercial sewing, tool/die equipment, robotics, timers, welding, HVAC, medical, power generators

**Approvals**

UL E22575; CSA LR15734

Technical data of approved types on request

**Contact Data**

Contact arrangement	1 Form X (NO-DM); 1-3 Form A (NO); 1-4 Form C (CO)		
Rated voltage	240VAC		
Rated current	10A		
Contact material	Ag	AgCdO	AgSnOInO
Min. recommended contact load	100mA, 12VDC	300mA, 12VDC	300mA, 12VDC
Frequency of operation	360 ops./hr	360 ops./hr	360 ops./hr
Operate/releases time max.	15/10ms		
Bounce time max.	17ms		

**Contact ratings**

Type	Load	Cycles
<b>UL 508</b>		
Ag, 1, 2 and 3 pole		
	5A, 240VAC	
	5A, 28VDC	
	1/6HP, 120VAC	
	2.5A, 120VAC, tungsten	
	1/3HP, 240VAC	
	0.5A, 120VDC	
	5FLA, 15LRA, 250VAC	
Ag, 4 pole		
	5A, 240VAC	
	2.5A, 120VAC, tungsten	
	0.5A, 120VDC	
	1/6HP, 120VAC	
	1/3HP, 240VAC	
AgCdO, 1, 2 and 3 pole		
	10A, 240VAC	
	10A, 32VDC	
	5FLA, 15LRA, 250VAC	
	1/3HP, 120VAC	
	5A, 120VAC, tungsten	
	1/2HP, 250VAC	
	0.5A, 125VDC	
	10FLA, 40LRA, 125VAC	
	3A, 600VAC	
	1/2HP, 480VAC	
	1/2HP, 600VAC	
	1HP, 480 VAC, 3 phase	
AgCdO, 4 pole		
	10A, 240VAC	
	5A, 120VAC, tungsten	
	0.5A, 120VDC	
	10A, 28VDC, resistive	
	10FLA, 30LRA, 125VAC	
	5FLA, 15LRA, 250 VAC	30x10 <sup>3</sup>
	125VA, 250 VAC	

AgCdO, 4 pole (continued)

1/3HP, 120VAC

1/2HP, 250VAC

Total load not to exceed 30 A, 28 VDC, 120 VAC and 20 A, 250 VAC

AgSnOInO

10A, 277VAC, pf = 0.8

100x10<sup>3</sup>

Mechanical endurance 10x10<sup>6</sup> ops.

**Coil Data**

Coil voltage range	5 to 110VDC 6 to 240VAC			
Coil insulation system according UL	Class B			
<b>Coil versions, DC coil</b>				
Coil code	Rated voltage VDC	Operate voltage VDC	Coil resistance Ω±10%	Rated power W
1, 2 and 3 pole				
5	5	3.75	21	1.2
6	6	4.5	32.1	1.125
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
4 pole				
5	5	3.75	14	1.8
6	6	4.5	20	1.8
12	12	9.0	80	1.8
24	24	18.0	320	1.8
48	48	36.0	1250	1.85
110	110	82.5	6720	1.8

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 power VA
1 and 2 pole				
6	6	5.1	6	2.0
12	12	10.2	24	2.0
24	24	20.4	85	2.0
120	120	102.0	2250	2.1
240	240	204.0	9110	2.1
3 and 4 pole				
6	6	5.1	4.2	2.8
12	12	10.2	18	2.8
24	24	20.4	72	2.8
120	120	102.0	1700	2.9
240	240	204.0	7200	2.9

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

**KUP Series Panel Plug-in Relay** (Continued)

**Insulation Data**

Initial dielectric strength	
between open contacts	1200V <sub>rms</sub>
between contact and coil	2200V <sub>rms</sub>
between adjacent contacts	2200V <sub>rms</sub>
Initial insulation resistance	
between insulated elements	100MΩ, 500VDC

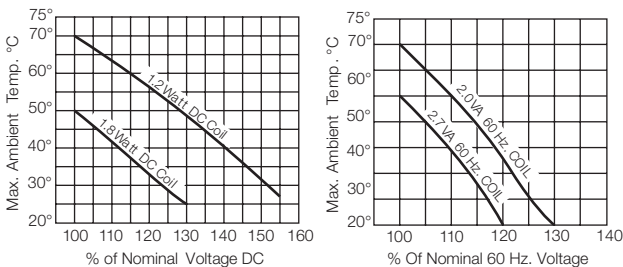
**Other Data**

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at [www.te.com/customersupport/rohssupportcenter](http://www.te.com/customersupport/rohssupportcenter).

Ambient temperature

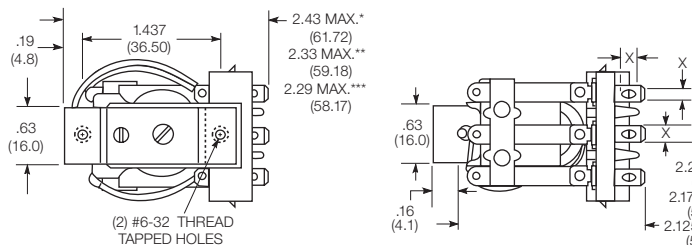
DC coil	Enclosed relays, 4 pole: -45°C to 50°C
	Enclosed relays, 1-3 pole: -45°C to 70°C
	Open relays: 15°C higher maximum
AC coil	Enclosed relays, 3 and 4 pole: -45°C to +45°C
	Enclosed relays, 1 and 2 pole: -45°C to +55°C
	Open relays: 15°C higher maximum

Maximum allowable ambient temperature vs voltage (KUP enclosed)

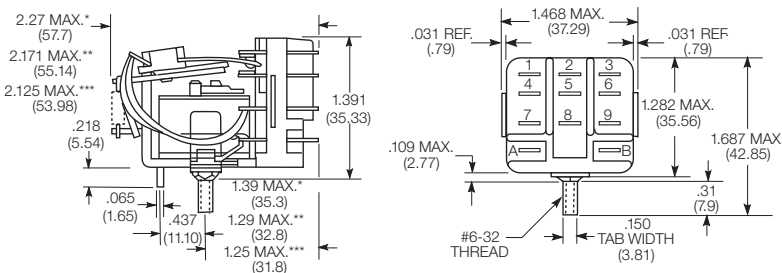


**Dimensions**

KU bracket type



KU stud type



**Seated Heights For KU (open) Relays**

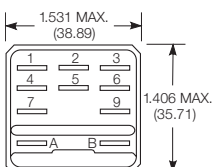
- 1.391" (35.33mm) for #6-32 stud with .218" (5.54mm) locating tab.
- 1.52" (38.6mm) for bracket with 2-#6 32 tapped holes.
- 1.282" (32.56mm) for #6-32 tapped core with .125" (3.18mm) or .218" (5.54mm) locating tab.
- 2.046" (51.97mm) for relay with printed circuit terminals.

STUD TYPE also available with .125" (3.18mm) tab, as well as without stud and locating tab. Models without stud have core tapped #6-32 THREAD, .25" (6.4mm) minimum depth.

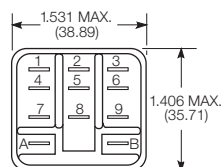
- \*Dimensions with .250" (6.35mm) terminals.
- \*\* Dimensions with .110" (2.79mm) or .205" (5.21mm) terminals.
- \*\*\* Dimensions with .187" (4.75mm) terminals.

**Relay front diagrams**

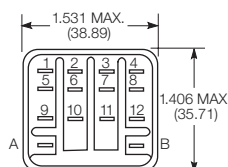
Models with 6.35mm (.250) QC terminals



1-3 pole models with all other terminals



4 pole models



**Other Data** (continued)

Category of environmental protection	
IEC 61810	RT0 - open relay; RTI - dust protected
Terminal type	
	Quick connects (QC), .187, .205 or .250; PCB-THT
Terminal retention, push force	
QC .205	17 lbs for 3s
QC .187, QC .250, PCB	25 lbs for 3s
Weight	
	85g
Packaging/unit	
	tray/25 pcs., box/150pcs.

**Accessories**

For details see datasheet      Sockets and Accessories, KUP Relays

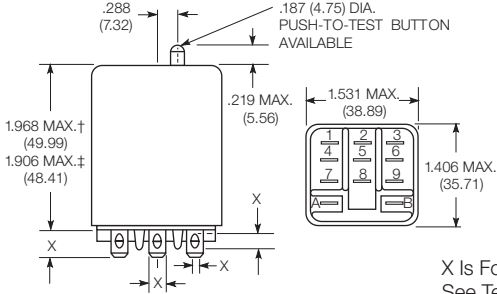
Product Code      Description

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)

**KUP Series Panel Plug-in Relay (Continued)**

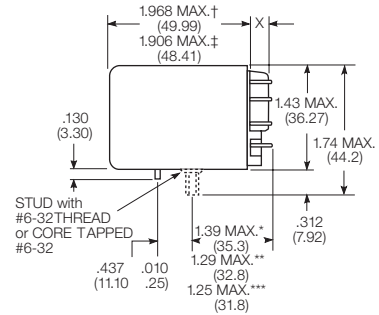
**Dimensions (continued)**

KUP plain case

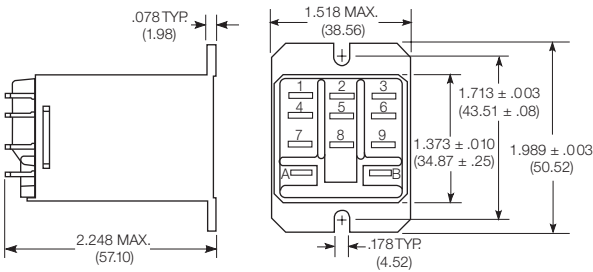


X Is For Terminal Dimensions.  
See Terminal Drawings.

KUP core / stud mount case



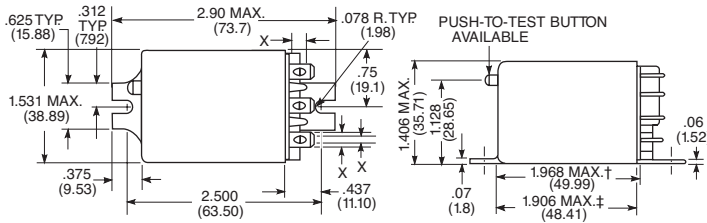
KUP top flange case



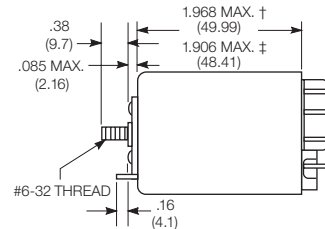
† Dimensions with .250" (6.35mm) terminals.  
‡ Dimensions with .187" (4.75mm and .205" 5.21mm) terminals.

\*Dimensions with .250" (6.35mm) terminals.  
\*\* Dimensions with .110" (2.79mm) or .205" (5.21mm) terminals.  
\*\*\* Dimensions with .187" (4.75mm) terminals.

KUP bracket mount case

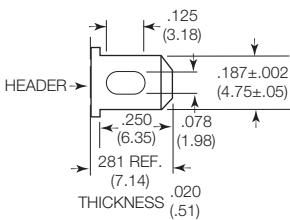


KUP stud on end case

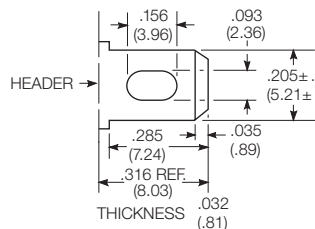


**Terminal dimensions**

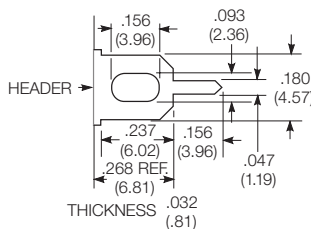
4.75mm (.187) quick connect



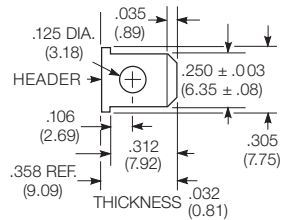
5.21mm (.205) quick connect



1.19mm (.047) printed circuit

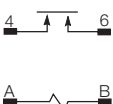


6.35mm (.250) quick connect

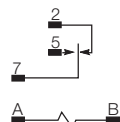


**Terminal assignment**

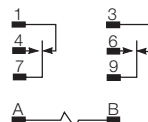
1 Form X



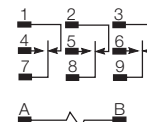
1 Form C  
1 Form A (delete 2)



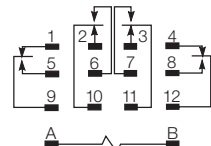
2 Form C  
2 Form A (delete 1 & 3)



3 Form C  
3 Form A (delete 1, 2 & 3)



4 Form C

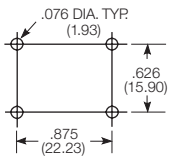


**KUP Series Panel Plug-in Relay** (Continued)

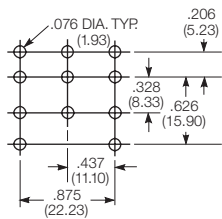
**PCB layout**

Bottom view on solder pins

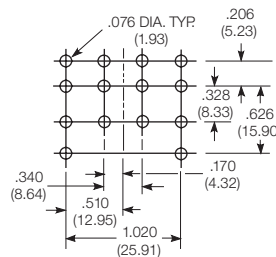
1 form X version



3 pole version  
(Omit unnecessary holes for form A and 2 pole types)



4 pole version



**Product code structure**

Typical product code **KUP -14 A 1 5 -120**

Type	<b>KU</b> Open style relay	<b>KUP</b> Enclosed relay
Contact arrangement	<b>1</b> 1 form A (1 NO) <b>7</b> 2 form A (2 NO) <b>14</b> 3 form C (3 CO)	<b>3</b> 1 form X (1 NO-DM) <b>11</b> 2 form C (2 CO) <b>17</b> 4 form C (4 CO) <b>5</b> 1 form C (1 CO) <b>12</b> 3 form A (3 NO)
Coil Input	<b>A</b> AC, 50/60Hz	<b>D</b> DC

**Mounting and options**

**KU**

- 1** #6-32 mounting stud, 5.54mm (.218in) locating tab
- 3** #6-32 tapped core, 3.18mm (.125in) locating tab
- 4** #6-32 tapped core, 5.54mm (.218in) locating tab
- 5** #6-32 tapped core, no locating tab

**KUP**

- 1** Socket mount (plain) case
- 2** Socket mount (plain) case with push-to-test button 1)
- 3** Socket mount (plain) case with indicator lamp 2)
- 4** Socket mount (plain) case with indicator lamp and push-to-test button 1) 2)
- 5** Bracket mount case
- A** Plain case with #6-32 stud and locating tab
- E** Plain case with #6-32 tapped core and locating tab
- T** Top flange case 1)

1) Not available with four pole models (Contact arrangement 17).

2) Indicator lamps are available on models with the following coils: 6-24VAC and VDC, 110VDC and 120-240VAC. Only models with 120-240VAC coils are UL recognized.

**Terminal and contact material**

**1 and 2 pole models**

- |  |   |
|--|---|
| <b>1</b> 4.75mm (.187in) quick connect/solder; Ag, 5A        | <b>3</b> 1.19mm (.047in) PCB; Ag, 5A                      |
| <b>5</b> 4.75mm (.187in) quick connect/solder; AgCdO, 10A    | <b>7</b> 1.19mm (.047in) PCB; AgCdO, 10A                  |
| <b>J</b> 6.35mm (.250in) quick connect/solder; Ag, 5A        | <b>K</b> 6.35mm (.250in) quick connect/solder; AgCdO, 10A |
| <b>P</b> 4.75mm (.187in) quick connect/solder; AgSnOInO, 10A | <b>S</b> 1.19mm (.047in) PCB, AgSnOInO; 10A               |
| <b>W</b> 6.35mm (.250in) quick connect/solder; AgSnOInO, 10A |   |

**3 pole models**

- |  |   |
|--|---|
| <b>1</b> 4.75mm (.187in) quick connect/solder; Ag, 5A        | <b>3</b> 1.19mm (.047in) PCB; Ag, 5A        |
| <b>5</b> 4.75mm (.187in) quick connect/solder; AgCdO, 10A    | <b>7</b> 1.19mm (.047in) PCB; AgCdO, 10A    |
| <b>P</b> 4.75mm (.187in) quick connect/solder; AgSnOInO, 10A | <b>S</b> 1.19mm (.047in) PCB, AgSnOInO; 10A |

**4 pole models**

- |   |  |
|---|--|
| <b>1</b> 4.75mm (.187in) quick connect/solder; Ag, 5A 3)        | <b>3</b> 1.19mm (.047in) PCB; Ag, 5A                         |
| <b>4</b> 2.79mm (.110in) quick connect/solder; Ag, 5A           | <b>5</b> 4.75mm (.187in) quick connect/solder; AgCdO, 10A 3) |
| <b>7</b> 1.19mm (.047in) PCB; AgCdO, 10A                        | <b>9</b> 2.79mm (.110in) quick connect/solder; AgCdO, 10A    |
| <b>P</b> 4.75mm (.187in) quick connect/solder; AgSnOInO, 10A 3) | <b>S</b> 1.19mm (.047in) PCB, AgSnOInO; 10A                  |
| <b>U</b> 2.79mm (.110in) quick connect/solder; AgSnOInO, 10A 2) |  |

3) 4 pole KUP with 4.75mm (.187in) terminals will not plug into sockets. Must use 2.79mm (.110) terminals for socket mounting.

**Au flashed contact option**

- Leave Blank** No Au flashing on contacts
- F** Optional Au flashing on contacts

**Coil voltage**

Coil code: please refer to coil versions table

**KUP Series Panel Plug-in Relay** (Continued)

Product Code	Arrangement	Material	Coil	Terminals	Mounting	Part Number		
KUP-5A15-24	1 form C, 1 CO	AgCdO	24VAC	4.75mm (.187in) QC	Socket mount, plain case	6-1393118-0		
KUP-5A15-120			120VAC				5-1393119-9	
KUP-5A15-240			240VAC			6-1393118-1		
KUP-5A55-120			120VAC		Bracket mount case	6-1393118-3		
KUP-5D15-12			12VDC				6-1393118-6	
KUP-5D15-24			24VDC		Socket mount, plain case	6-1393118-7		
KUP-5D55-12			12VDC				7-1393118-0	
KUP-5D55-24			24VDC		Bracket mount case	7-1393118-1		
KUP-11A11-120	2 form C, 2 CO	Ag	120VAC				1-1393117-7	
KUP-11A15-12		AgCdO	12VDC		4.75mm (.187in) QC	Socket mount, plain case	1-1393117-8	
KUP-11A15-24			24VAC					2-1393117-1
KUP-11A15-120			120VAC				1-1393117-9	
KUP-11A15-240			240VAC				2-1393117-2	
KUP-11A35-120			120VAC			Socket mount case w/ indicator lamp	2-1393117-5	
KUP-11A55-24			24VAC				3-1393117-0	
KUP-11A55-120			120VAC	Bracket mount case		2-1393117-9		
KUP-11AT5-120							1-1393117-4	
KUP-11D11-24		Ag	24VDC	Socket mount, plain case		4-1393117-2		
KUP-11D15-5		AgCdO	5VDC				4-1393117-8	
KUP-11D15-12			12VDC	4.75mm (.187in) QC		Socket mount case w/ indicator lamp	4-1393117-4	
KUP-11D15-24			24VDC					4-1393117-5
KUP-11D15-36			36VDC				4-1393117-6	
KUP-11D15-110			110VDC				4-1393117-3	
KUP-11D35-24			24VDC		Socket mount case w/ indicator lamp	5-1393117-3		
KUP-11D55-6			6VDC				6-1393117-0	
KUP-11D55-12			12VDC		Bracket mount case	5-1393117-6		
KUP-11D55-24			24VDC				5-1393117-8	
KUP-11D55-48			48VDC		Bracket mount case	5-1393117-9		
KUP-11D55-110			110VDC				5-1393117-5	
KUP-14A11-120	3 form C, 3 CO	Ag	120VAC		4.75mm (.187in) QC	Socket mount, plain case	7-1393117-3	
KUP-14A15-12		AgCdO	12VAC					7-1393117-7
KUP-14A15-24			24VAC				7-1393117-9	
KUP-14A15-120			120VAC				7-1393117-8	
KUP-14A15-240			240VAC			8-1393117-0		
KUP-14A25-120			120VAC	Socket mount w/ test button		8-1393117-3		
KUP-14A35-120							8-1393117-7	
KUP-14A35-240			240VAC	Socket mount w/ indicator lamp		8-1393117-9		
KUP-14A35F-120		AgCdO w/ Au flash	120VAC				9-1393117-0	
KUP-14A45-120		AgCdO		Socket mount w/ test button, indicator lamp		9-1393117-4		
KUP-14A55-24			24VAC				1393118-2	
KUP-14A55-120			120VAC	Bracket mount case		9-1393117-9		
KUP-14A55-240			240VAC				1393118-3	
KUP-14D11-24		Ag	24VDC	4.75mm (.187in) QC		Socket mount, plain case	1-1393118-0	
KUP-14D15-6		AgCdO	6VDC					1-1393118-8
KUP-14D15-12			12VDC				1-1393118-3	
KUP-14D15-24			24VDC				1-1393118-4	
KUP-14D15-48			48VDC				1-1393118-7	
KUP-14D15-110			110VDC				1-1393118-2	
KUP-14D25-24			24VDC			Socket mount w/ test button	2-1393118-3	
KUP-14D35-24								2-1393118-7
KUP-14D35-110			110VDC			Socket mount w/ indicator lamp	2-1393118-6	
KUP-14D35F-110		AgCdO w/ Au flash						2-1393118-9
KUP-14D45-110		AgCdO				Socket mount w/ test button, indicator lamp	3-1393118-1	
KUP-14D55-12			12VDC					3-1393118-7
KUP-14D55-24			24VDC			Bracket mount case	3-1393118-8	
KUP-17A19-120	4 form C, 4 CO		120VAC				2.79mm (.110in) QC	Socket mount, plain case
KUP-17A55-24			24VAC			4-1393118-6		
KUP-17D19-24			24VDC	Socket mount, plain case		5-1393118-0		
KUP-17D55-24			24VDC					5-1393118-3