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### Important Note

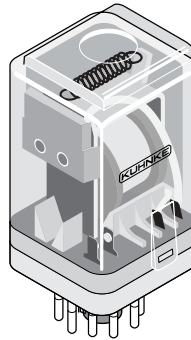
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## Relay Universal MF2 for Current Monitoring

- Standard type 
- Large contact gap, switching voltage therefore 400 VAC
- Monitoring of DC and AC currents



### Order Code

<b>Order code</b>	<b>M</b>	<b>F</b>	<b>2</b>	<b>-</b>	<b>0</b>	<b>40</b>
Type of relay	M					
Model						
F Plug-in type with socket		F				
Contact arrangement						
2 C/O			2			
Coil current type						
0 Direct current					0	
1 Alternating current 50 Hz (60 Hz on request)					1	
Coil number (see order specs)						
40						40

### Order Specifications

for current relay MF2 for the monitoring of DC filament bulbs and other DC loads

P \ U	6 VDC	12 VDC	24 VDC	60 VDC	110 VDC	115 VDC	220 VDC
10 W	MF2-052	MF2-046	MF2-040	-	-	-	-
25 W	MF2-056	MF2-052	MF2-046	MF2-040	MF2-034	MF2-030	-
40 W	-	MF2-056	MF2-052	MF2-040	MF2-034	MF2-037	MF2-030
60 W	-	-	MF2-052	MF2-046	MF2-040	MF2-040	MF2-034
65 W	-	-	MF2-052	MF2-046	MF2-040	MF2-040	MF2-034
80 W	-	-	MF2-056	MF2-046	MF2-046	MF2-044	MF2-037
100 W	-	-	MF2-056	MF2-052	MF2-046	MF2-046	MF2-040
150 W	-	-	-	MF2-052	MF2-046	MF2-046	MF2-040
200 W	-	-	-	MF2-056	MF2-052	MF2-052	MF2-046

for current relay MF2 for the monitoring of AC filament bulbs and other AC loads

P \ U	6 VAC 50 Hz	12 VAC 50 Hz	24 VAC 50 Hz	60 VAC 50 Hz	110 VAC 50 Hz	115 VAC 50 Hz	230 VAC 50 Hz
10 W	MF2-151	MF2-146	MF2-143	-	-	-	-
25 W	-	MF2-157	MF2-151	MF2-143	MF2-137	MF2-137	MF2-130
40 W	-	MF2-157	MF2-151	MF2-144	MF2-137	MF2-137	MF2-134
60 W	-	-	MF2-157	MF2-151	MF2-144	MF2-144	MF2-137
65 W	-	-	MF2-157	MF2-151	MF2-144	MF2-144	MF2-137
80 W	-	-	MF2-157	MF2-151	MF2-144	MF2-144	MF2-137
100 W	-	-	-	MF2-151	MF2-146	MF2-146	MF2-143
150 W	-	-	-	MF2-157	MF2-151	MF2-151	MF2-144
200 W	-	-	-	MF2-157	MF2-152	MF2-151	MF2-146

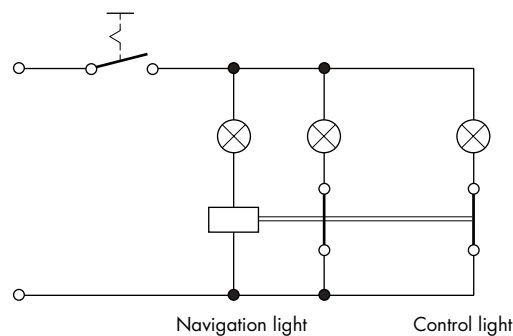


## Contact Data

	MF2 for current monitoring
Contact arrangement	2 C/O
Type of contact	Single contact
Contact material	Hard silver
Nominal contact current	6 A
Inrush current	≤ 20 A
Nominal contact voltage	400 VAC
Max. switching capacity (resistive)	3000 VA
Min. switching capacity	50 mA / 20 VDC

## Dimensions, Connection Diagram(s)

See relay universal MF



Application  
 Example: Navigation lights  
 Use as monitoring relay  
 in accordance with connection diagram

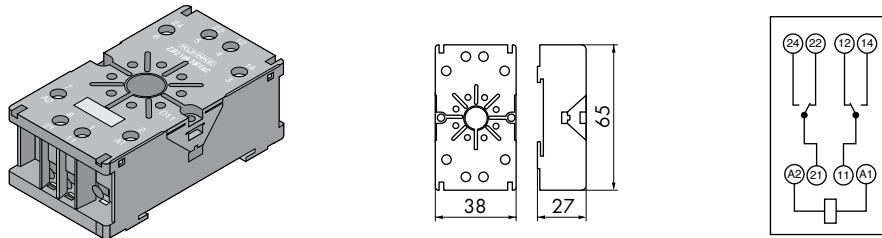
## General Data

	MF2 for current monitoring
Pull-in-time	approx. 15 ms
Drop-out time	approx. 10 ms
Bounce time	approx. 10 ms
Mechanical service life	> 20 x 10 <sup>6</sup> switching cycles DC > 10 x 10 <sup>6</sup> switching cycles AC
Test voltage	
Coil - contact	2500 VAC
(C/O) - (C/O)	2500 VAC
Contact - contact	1000 VAC
Insulation group VDE 0110b/2.79	C250, B380
Ambient temperature	-25 °C to +40 °C
Vibration resistance (30 - 100 Hz)	> 4 g
Weight	approx. 120 g
Operating range	0.9 - 1.1 I <sub>N</sub>
Residual direct current ripple	< 25 %

## Order Specifications for Accessories MF

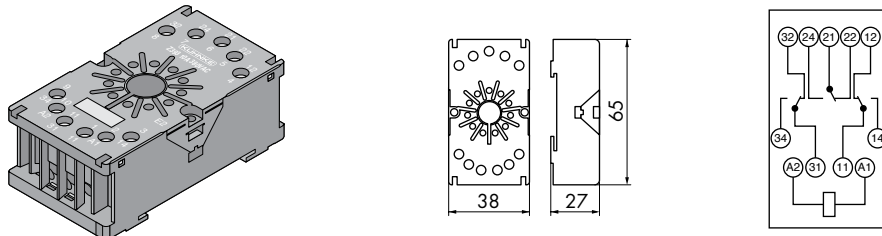
	MF2	MF3
Socket for		
Screw connection with quick-action fastening /retaining clip	Z392 / Z434 Z395	Z345 / Z434 Z393 / Z434 Z396

## Socket Z392



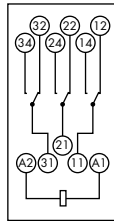
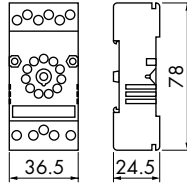
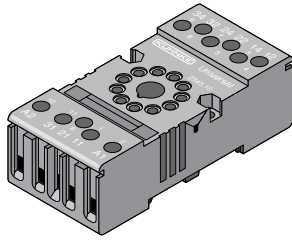
Socket	Z392
Socket design	logical, additional modules not supported
Terminal capacity	
solid conductor	2 x 2.5 mm <sup>2</sup>
flexible conductor with ferrule	2 x 2.5 mm <sup>2</sup>
Terminal designation	in accordance with EN50005 and IEC67
Mounting	Rail EN50022-35 x 7.5/15 Screw mounting 2 x M3 or central M4
Screw terminals	Head screws metric M3
Torque in accordance with DIN EN 60999	0.5 Nm
Nominal current	10 A
Insulation group VDE 0110b/2.79	C250, B380
Electrical shock protection	in accordance with VBG4 (professional association), VDE 0106 part 100
Weight	63 g
Retaining clip	Z434

## Socket Z393

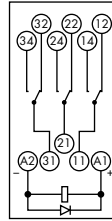


Socket	Z393
Socket design	additional modules not supported
Terminal capacity	
solid conductor	2 x 2.5 mm <sup>2</sup>
flexible conductor with ferrule	2 x 2.5 mm <sup>2</sup>
Terminal designation	in accordance with EN50005 and IEC67
Mounting	Rail EN50022-35 x 7.5/15 Screw mounting 2 x M3 or central M4
Screw terminals	Head screws metric M3
Torque in accordance with DIN EN 60999	0.5 Nm
Nominal current	10 A
Insulation group VDE 0110b/2.79	C250, B380
Electrical shock protection	in accordance with VBG4 (professional association), VDE 0106 part 100
Weight	63 g
Retaining clip	Z434

## Socket Z345

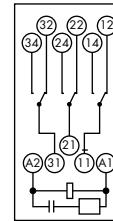


Z345



Z345.12

Protection diode up to 220 VDC

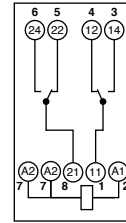
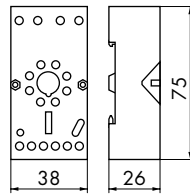
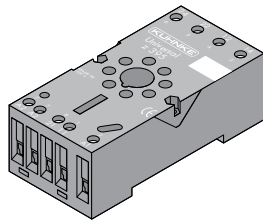


Z345.32

RC-protection unit 110 / 230 VAC

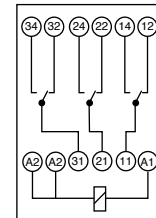
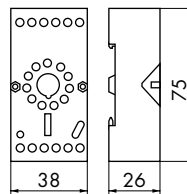
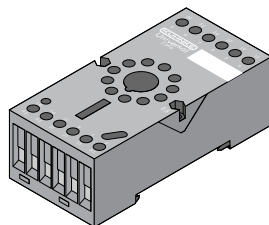
Socket	Z345
Socket design	logical, additional modules not supported
Terminal capacity	
solid conductor	2 x 2.5 mm <sup>2</sup>
flexible conductor with ferrule	2 x 2.5 mm <sup>2</sup>
Terminal designation	in accordance with EN50005 and IEC67
Mounting	Rail EN50022-35 x 7.5/15 Screw mounting 2 x M3 or central M4
Screw terminals	Head screws metric M2.6
Torque in accordance with DIN EN 60999	0.5 Nm
Nominal current	10 A
Insulation group VDE 0110b/2.79	C250, B380
Electrical shock protection	in accordance with VBG4 (professional association), VDE 0106 part 100
Weight	50 g
Retaining clip	Z441

## Socket Z395



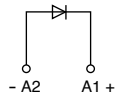
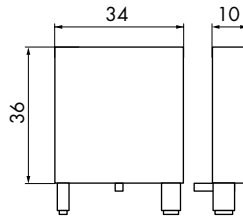
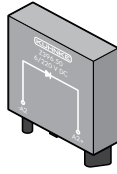
Socket	Z395
Socket design	logical, additional modules supported
Terminal capacity	
solid conductor	2 x 2.5 mm <sup>2</sup>
flexible conductor with ferrule	2 x 1.5 mm <sup>2</sup>
Terminal designation	in accordance with EN50005 and IEC67
Mounting	Rail EN50022-35 x 7.5/15 Screw mounting 2 x M3 or central M4
Screw terminals	Head screws metric M3
Torque in accordance with DIN EN 60999	0.5 Nm
Nominal current	10 A
Insulation group VDE 0110b/2.79	C250, B380
Electrical shock protection	in accordance with VBG4 (professional association), VDE 0106 part 100
Weight	68 g

## Socket Z396

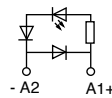


Socket	Z396
Socket design	logical, additional modules supported
Terminal capacity	
solid conductor	2 x 2.5 mm <sup>2</sup>
flexible conductor with ferrule	2 x 1.5 mm <sup>2</sup>
Terminal designation	in accordance with EN50005 and IEC67
Mounting	Rail EN50022-35 x 7.5/15 Screw mounting 2 x M3 or central M4
Screw terminals	Head screws metric M3
Torque in accordance with DIN EN 60999	0.5 Nm
Nominal current	10 A
Insulation group VDE 0110b/2.79	C250, B380
Electrical shock protection	in accordance with VBG4 (professional association), VDE 0106 part 100
Weight	68 g

## Modules for Socket Z395/Z396



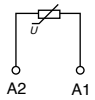
**Z396.50**  
Protection diode



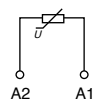
**Z396.52**  
Protection / luminous diode  
for 24 VDC



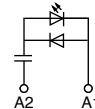
**Z396.53**  
RC-protection unit  
for 110 - 240 VAC



**Z396.54**  
Varistor for 24 VAC



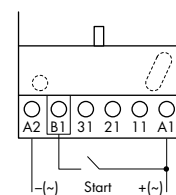
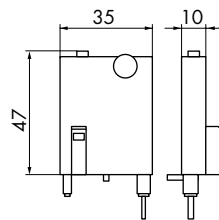
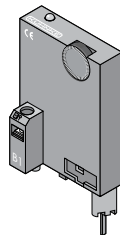
**Z396.55**  
Varistor for 230 VAC



**Z396.58**  
Luminous diode for 230 VAC

## Universal Timer Module Z396.64 for Socket Z396

- Timer module for relay universal series
- Multi voltage of 24 - 240 VDC/AC
- Multi-functional with 8 functions
- Multi time range from 50 ms - 240 h



Technical data see pages 17 - 18.

# Accessories for Relay Universal

## Contact Data

When using relay UF3 and socket Z396

3 change-over contacts (C/O)				
Contact arrangement	3 change-over contacts (C/O)			
Type of contact	Single contact		Twin contact	
Contact material	AgNi	AgNi gold-plated	AgNi	AgNi gold-plated
Nominal contact current	10 A		4 A	
Inrush current	≤ 20 A		≤ 10 A	
Nominal contact voltage	250 VAC		250 VAC	
Max. switching capacity (resistive)	3000 VA		1000 VA	
Min. switching capacity	50 mA / 20 VDC	1 mA / 100 mVDC	20 mA / 10 VDC	1 mA / 100 mVDC

## General Data

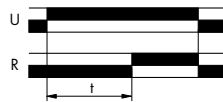
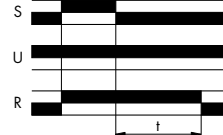
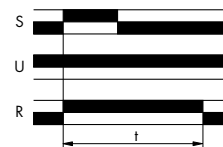
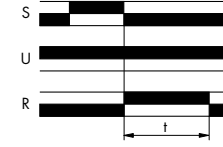

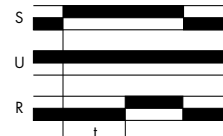
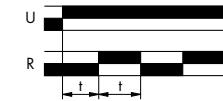
Voltage range supply	24 V to 240 VAC, 24 V to 250 VDC -15 % to +10 % in relation to $U_N$
Voltage range control contact	at 24 V min. 80 % of supply voltage at 230 V min. 95 % of supply voltage
Duty cycle	100 %
Frequency	48 Hz to 63 Hz
Power failure bridging time	max. 10 ms
Recovery time	max. 100 ms at 25 °C, max. 150 ms at 55 °C
Adjustments	Time ranges and functions selectable via DIP switch Time setting via potentiometer
Temperature range	-25 °C to +55 °C
Indicators	Green "Power on" LED Green LED flashes during delay time
Supply voltage terminal	plug-in to socket Z396
Control voltage terminal	Terminal B1

## Time Ranges

Time ranges, time range limit	Adjustment range
1 s	0.05 - 1 s
10 s	0.5 - 10 s
1 min	3 s - 60 s
10 min	30 s - 600 s
1 h	3 min - 60 min
10 h	30 min - 600 min
1 day/24 h	1.2 h - 24 h
10 day/240 h	12 h - 240 h



## Time Functions

Function	Description of function	Function diagram
<b>E</b>	Switch-on delay Start by switching the supply voltage	
<b>R</b>	Switch-off delay Start with control contact	
<b>Ws</b>	Switch-on wiper Start with control contact	
<b>Wa</b>	Switch-off wiper Start with control contact	
<b>Wu</b>	Switch-on wiper Start by switching the supply voltage	
<b>Es</b>	Switch-on delay Start with control contact	
<b>Bp</b>	Blinker 0 - starting Start by switching the supply voltage	
<b>Bi</b>	Blinker 1 - starting Start by switching the supply voltage	