

- 2 / 3 pole 10 / 16 A, 2 CO or 3 CO contacts
- Switching capacity up to 6000 VA
- DC- or AC-coil
- Mechanical indicator
- Push-to-test-button
- Plug-in version, PCB terminals, chassis- or DIN-rail mount
- RoHS compliant (Directive 2002/95/EC) as per product date code 0415



FD163-A

**Applications**

Elevator control, power supplies

**Approvals**

VDE REG.-Nr. 40003144, c RU us E214025  
 Technical data of approved types on request

Contact data	RM2	RM3	RM7
Contact configuration	2 CO	3 CO	3 CO
Contact set	single contact		
Type of interruption	micro disconnection		
Rated current	16 A	10 A	16 A
Rated voltage / max.switching voltage AC	400/440 VAC		
Maximum breaking capacity AC	6000 VA	3800 VA	6000 VA
Limiting making capacity, max 20 ms	40 A	40 A	40 A
Contact material	AgCdO		
Mechanical endurance	20x10 <sup>6</sup> cycles		
Rated frequency of operation with / without load	16/100 min <sup>-1</sup>		

**Contact ratings**

Type	Load	Cycles
RM2	16 A, 415 VAC, UL	100x10 <sup>3</sup>
RM20	16 A, 400 VAC, cosφ=1, 35°C, VDE	100x10 <sup>3</sup>
RM2	16 A, 250 VAC, general purpose, UL	30x10 <sup>3</sup>
RM20	10 A, 48 VDC, UL	30x10 <sup>3</sup>
RM30	10 A, 400 VAC, cosφ=1, 35°C, VDE	100x10 <sup>3</sup>
RM3	10 A, 300 VAC, resistive, UL	100x10 <sup>3</sup>
RM3	10 A, 250 VAC, general purpose, UL	30x10 <sup>3</sup>
RM7	5 A, 400 VAC, resistive, UL	100x10 <sup>3</sup>
RM70	16 A, 400 VAC, cosφ=1, 35°C, VDE	100x10 <sup>3</sup>
RM7	10 A, 300 VAC, resistive, UL	100x10 <sup>3</sup>
RM7	10 A, 415 VAC, 10% duty cycle, NO, 70°C, DC-coil	100x10 <sup>3</sup>

**Coil data**

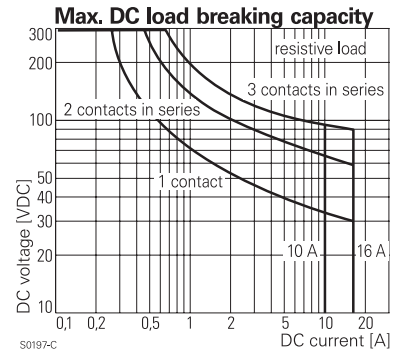
	RM2	RM3	RM7
Rated coil voltage range DC coil	6...220 VDC		
AC coil	6...400 VAC		
Coil power DC coil	1.2 W	1.2 W	1.6 W
AC coil	2.3 VA	2.3 VA	2.8 VA
Operative range	1		

**Coil versions, DC-coil**

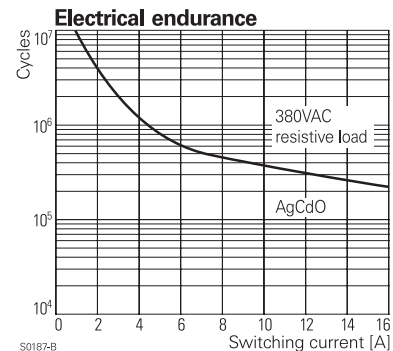
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power W
STD LED PD* bipolar	LED+				
	LED+				

**Coil versions, DC-coil, RM2, RM3**

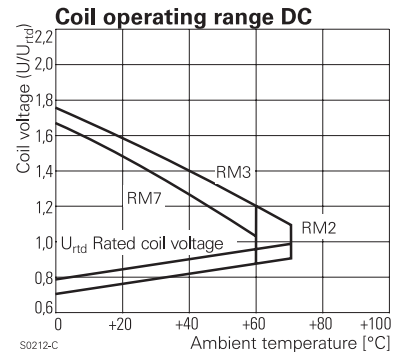
006	L06	0A6	LA6	6	4.5	0.6	32±10%	1.1
012	L12	0B2	LB2	12	9.0	1.2	110±10%	1.3
<b>024</b>	<b>L24</b>	<b>0C4</b>	<b>LC4</b>	<b>24</b>	<b>18.0</b>	<b>2.4</b>	<b>475±10%</b>	<b>1.2</b>
048	L48	0E8	LE8	48	36.0	4.8	2000±10%	1.2
060	L60	0G0	LG0	60	45.0	6.0	2850±10%	1.3
110	M10	1B0	MB0	110	82.5	11.0	10000±12%	1.2



S0197-C



S0187-B



S0212-C

221	N21	2C1	NC1	220	165.0	22.0	40000±15%	1.2
<b>Coil versions, DC-coil, RM7</b>								
Coil code		Rated voltage		Operate voltage	Release voltage	Coil resistance	Rated coil power	
STD	LED PD*	LED+	LED+	VDC	VDC	Ohm	W	
006	L06 OA6	LA6	LA6	6	4.5	0.6	24±10%	
012	L12 OB2	LB2	LB2	12	9.0	1.2	86±10%	
<b>024</b>	<b>L24 OC4</b>	<b>LC4</b>	<b>LC4</b>	<b>24</b>	<b>18.0</b>	<b>2.4</b>	<b>345±10%</b>	
048	L48 OE8	LE8	LE8	48	36.0	4.8	1340±10%	
060	L60 OG0	LG0	LG0	60	45.0	6.0	2200±10%	
110	M10 1B0	MBO	MBO	110	82.5	11.0	7300±10%	
221	N21 2C1	NC1	NC1	220	165.0	22.0	30000±15%	

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

\*) Protection diode PD; standard polarity: +A1 / -A2

**Coil versions, AC-coil 50/60 Hz**

Coil code	LED	Rated voltage	Operate voltage	Release voltage	Coil resistance	Rated coil power
STD	LED	VAC	50/60Hz VAC	50/60Hz VAC	Ohm	50/60Hz VA

**Coil versions, AC-coil, RM2, RM3**

506	R06	6	4.8	2.4	5.3±10%	2.29/1.98
512	R12	12	9.6	4.8	24±10%	2.19/1.86
<b>524</b>	<b>R24</b>	<b>24</b>	<b>19.2</b>	<b>9.6</b>	<b>86±10%</b>	<b>2.26/1.95</b>
548	R48	48	38.4	19.2	345±10%	2.28/1.97
560	R60	60	48.0	24.0	544±10%	2.27/1.96
615	S15	115	92.0	46.0	2000±10%	2.37/2.00
<b>730</b>	<b>T30</b>	<b>230</b>	<b>184.0</b>	<b>92.0</b>	<b>8300±12%</b>	<b>2.32/1.96</b>
900	V00	400	320.0	160.0	27500±15%	2.31/1.96

**Coil versions, AC-coil, RM7**

506	R06	6	4.8	2.4	4.7±10%	2.86/2.36
512	R12	12	9.6	4.8	19.5±10%	2.71/2.27
<b>524</b>	<b>R24</b>	<b>24</b>	<b>19.2</b>	<b>9.6</b>	<b>80±10%</b>	<b>2.62/2.00</b>
548	R48	48	38.4	19.2	320±10%	2.60/2.17
560	R60	60	48.0	24.0	500±10%	2.62/2.20
615	S15	115	92.0	46.0	1850±10%	2.65/2.22
<b>730</b>	<b>T30</b>	<b>230</b>	<b>184.0</b>	<b>92.0</b>	<b>7500±10%</b>	<b>2.69/2.26</b>
900	V00	400	320.0	160.0	23500±15%	2.61/2.20

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

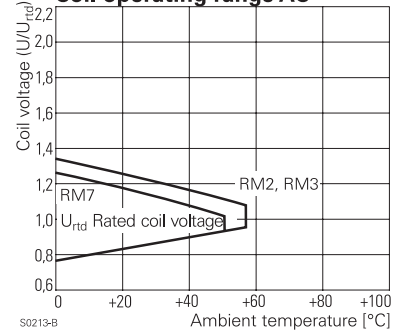
**Insulation**

Dielectric strength coil-contact circuit	2500 V <sub>rms</sub>
open contact circuit	1500 V <sub>rms</sub>
adjacent contact circuits	2500 V <sub>rms</sub>
Clearance / creepage coil-contact circuit	≥ 4.0/14.9 mm
adjacent contact circuits	≥ 6.1/7.3 mm
Material group of insulation parts	≥ IIIa
Insulation to IEC 60664-1	
Type of insulation coil-contact circuit	basic
open contact circuit	functional
adjacent contact circuits	basic
Rated insulation voltage	250 V
Pollution degree	3
Rated voltage system	240/400 V
Overvoltage category	III

**Other data**

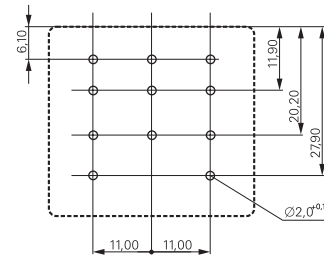
	RM2	RM3	RM7
RoHS - Directive 2002/95/EC	compliant as per product date code 0415		
Ambient temperature range DC coil	-45...+70°C	-45...+60°C	-45...+60°C
AC coil	-45...+55°C	-45...+55°C	-45...+50°C
Operate- / release time	15/10 ms		
Bounce time NO / NC contact	3 ms		
Vibration resistance (function) NO / NC contact	5/2 g	5/2 g	12/4 g
Category of protection	RTI - dust protected		
Resistance to soldering heat	270°C / 10 s		
Relay weight	81 g		
Packaging unit	10/25 pcs		

**Coil operating range AC**



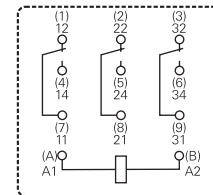
**PCB layout / terminal assignment**

Bottom view on pins



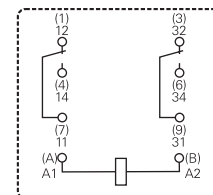
S0269-AA

**3 CO contacts**



S0269-AB

**2 CO contacts**



S0269-AD

**Power Relay RM 2/3/7** (Continued)

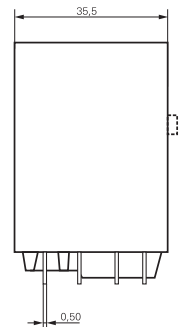
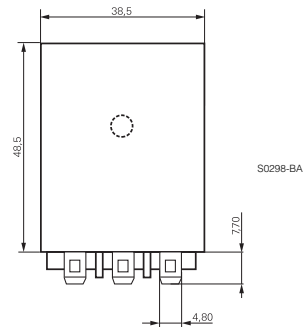
**Accessories**

For details see datasheet

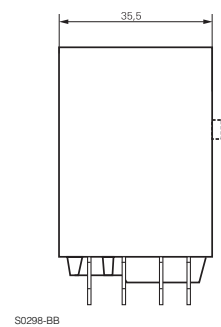
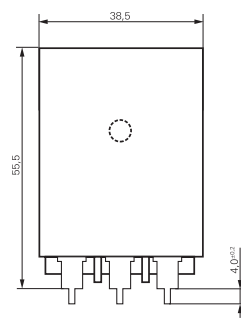
Accessories Power Relay RM

**Dimensions**

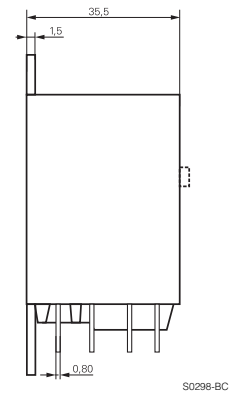
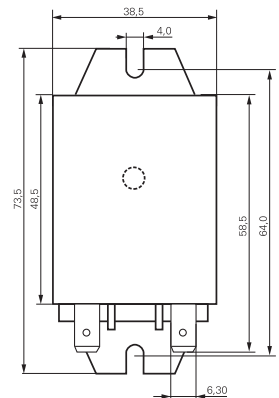
Plain cover, plug-in version



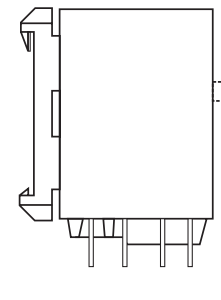
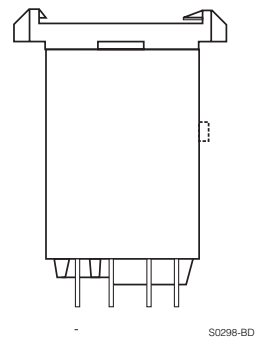
PCB version



Cover with mounting brackets, 6.3 mm quick connect (4.8 mm available)



Cover with DIN-snap-on attachment (6.3 mm quick connect only)  
horizontal vertical



**Product key**

Type	<b>R</b>	<b>M</b>					
Contact configuration	<b>2</b> 2 CO contacts, 16 A		<b>7</b> 3 CO contacts, 16 A				
	<b>3</b> 3 CO contacts, 10 A						
Version	<b>0</b> AgCdO, without test button		<b>3</b> AgCdO, with test button				
Enclosure	<b>2</b> plain cover, 4.8 mm quick connect terminals <b>3</b> cover with mounting brackets, 4.8 mm quick connect terminals <b>5</b> cover with mounting brackets, 6.3 mm quick connect terminals <b>7</b> PCB version <b>8</b> cover with DIN-snap-on attachment, horizontal, 6.3 mm quick connect terminals <b>9</b> cover with DIN-snap-on attachment, vertical, 6.3 mm quick connect terminals						
Coil	Coil code: please refer to coil versions table, preferred types in bold print						

Product key	Contacts	Version	Enclosure	Coil	Coil	Part number
RM202024	2 CO contacts 16 A	without	plain cover	DC-coil	24 VDC	8-1393149-2
RM202524		test button	quick c. 4.8 mm	AC-coil	24 VAC	1-1393146-9
RM202615					115 VAC	2-1393146-0
RM202730					230 VAC	1-1393148-4
RM203024			mounting brackets	DC-coil	24 VDC	1-1393148-6
RM203524			quick c. 4.8 mm	AC-coil	24 VAC	2-1393146-5
RM203615					115 VAC	2-1393146-6
RM203730					230 VAC	2-1393146-8
RM205024			mounting brackets	DC-coil	24 VDC	2-1393146-9
RM205524			quick c. 6.3 mm	AC-coil	24 VAC	3-1393146-0
RM205615					115 VAC	3-1393146-1
RM205730					230 VAC	3-1393146-2
RM207024			PCB version	DC-coil	24 VDC	3-1393146-3
RM207615				AC-coil	115 VAC	8-1393149-5
RM207730					230 VAC	3-1393146-4
RM208024			DIN-snap-on	DC-coil	24 VDC	3-1393146-5
RM208730			horizontal	AC-coil	230 VAC	8-1393149-6
RM209730			DIN vertical		230 VAC	3-1393146-6
RM232024		with test button	plain cover	DC-coil	24 VDC	3-1393146-8
RM232524			quick c. 4.8 mm	AC-coil	24 VAC	3-1393146-9
RM232615					115 VAC	4-1393146-0
RM232730					230 VAC	3-1393107-4
RM233024			mounting brackets	DC-coil	24 VDC	3-1393107-5
RM233615			quick c. 4.8 mm	AC-coil	115 VAC	4-1393146-2
RM235024			mounting brackets	DC-coil	24 VDC	8-1393149-8
RM235730			quick c. 6.3 mm	AC-coil	230 VAC	4-1393146-5
RM239730			DIN vertical		230 VAC	4-1393148-7
RM302024	3 CO contacts 10 A	without test button	plain cover	DC-coil	24 VDC	8-1393149-9
RM302524				quick c. 4.8 mm	AC-coil	24 VAC
RM302615					115 VAC	5-1393146-4
RM302730					230 VAC	5-1419150-3
RM303024			mounting brackets	DC-coil	24 VDC	6-1393148-4
RM303615			quick c. 4.8 mm	AC-coil	115 VAC	5-1393146-5
RM303730					230 VAC	5-1393146-7
RM307024			PCB version	DC-coil	24 VDC	7-1393148-2
RM307730				AC-coil	230 VAC	5-1393146-9
RM332024		with test button	plain cover	DC-coil	24 VDC	9-1393149-2
RM332524			quick c. 4.8 mm	AC-coil	24 VAC	9-1393149-3
RM332730					230 VAC	9-1393149-4
RM333024			mount. br. q.c.4.8	DC-coil	24 VDC	9-1393149-6
RM335730			mount. br. q.c.6.3	AC-coil	230 VAC	6-1393107-1
RM338730			DIN horizontal		230 VAC	7-1393148-7
RM339730			DIN vertical		230 VAC	6-1393107-2
RM702024	3 CO contacts 16 A	without test button	plain cover	DC-coil	24 VDC	8-1393146-5
RM702524				quick c. 4.8 mm	AC-coil	24 VAC
RM702615					115 VAC	1-1393844-0
RM702730					230 VAC	1-1393844-1
RM703024			mounting brackets	DC-coil	24 VDC	1-1393844-2
RM703524			quick c. 4.8 mm	AC-coil	24 VAC	9-1393146-1
RM703615					115 VAC	9-1393146-2
RM703730					230 VAC	9-1393146-4
RM705024			mounting brackets	DC-coil	24 VDC	9-1393146-6
RM705524			quick c. 6.3 mm	AC-coil	24 VAC	9-1393146-7
RM705615					115 VAC	1-1393844-4
RM705730					230 VAC	1-1393844-5
RM707024			PCB version	DC-coil	24 VDC	9-1393146-8
RM707524				AC-coil	24 VAC	0-1393147-1
RM707730					230 VAC	0-1393147-2
RM708024			DIN horizontal	DC-coil	24 VDC	0-1393147-4
RM708730			quick c. 6.3 mm	AC-coil	230 VAC	1-1419136-0
RM709024			DIN vertical	DC-coil	24 VDC	2-1393149-2
RM709730				AC-coil	230 VAC	0-1393147-5
RM732024		with test button	plain cover	DC-coil	24 VDC	1-1393844-7
RM732524			quick c. 4.8 mm	AC-coil	24 VAC	1-1393147-0
RM732615					115 VAC	1-1393147-1
RM732730					230 VAC	1-1393844-8
RM733730			mount.br. q.c. 4.8		230 VAC	1-1393147-5
RM735024			mounting brackets	DC-coil	24 VDC	3-1393149-6
RM735524			quick c. 6.3 mm	AC-coil	24 VAC	3-1393149-7
RM735730					230 VAC	4-1393149-1
RM737730			PCB version		230 VAC	2-1393147-0
RM738024			DIN-snap-on	DC-coil	24 VDC	2-1393844-0
RM738730			horizontal	AC-coil	230 VAC	2-1393147-2
RM739024			DIN-snap-on	DC-coil	24 VDC	4-1393149-5
RM739730			vertical	AC-coil	230 VAC	2-1393844-2