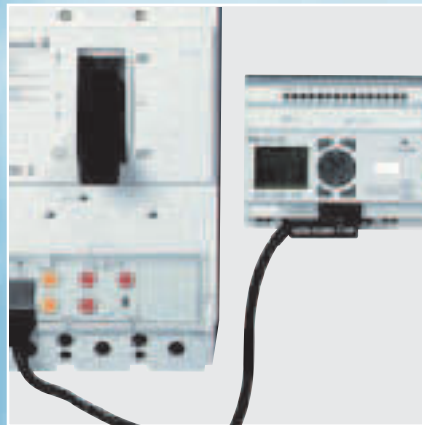
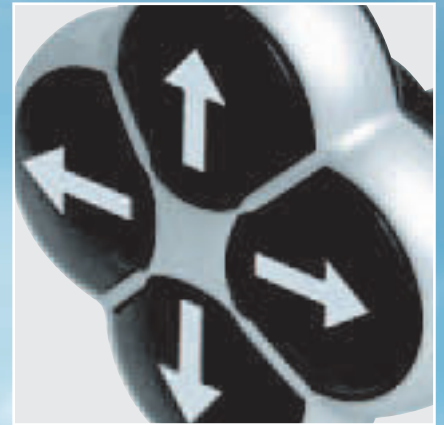


# Industrial Switchgear Short Form Catalogue 2005/2006



## Moeller – Market leaders in industrial switchgear

Moeller has been at the forefront of switching, protecting and controlling motors for over 100 years. Setting standards with DIL contactors and PKZ motor-protective circuit-breakers, and developing innovative automation systems, such as the multi-functional easy intelligent relay, too.

From transformers to pushbuttons, the standard versions of most Moeller devices are approved for use throughout the world. Specified and used across a wide variety of industries – from food processing to packaging from woodworking to waste disposal – Moeller components range from simple pushbuttons to plc's and touch screens communicating via industry-standard open networks. With 350 sales offices in more than 80 countries, Moeller can meet the needs of customers and end users wherever they are.

In the UK, Moeller sales engineers support and advise OEM's, panel builders and end users, in partnership with Moeller's network of Key Dealers. Their expertise is enhanced by a team of automation and key account engineers, specialising in intelligent process control solutions. Our technical support staff are on hand to help select the right component for an application. In-depth product support is provided by our product management team, working closely with Moeller engineers and factories around the world.

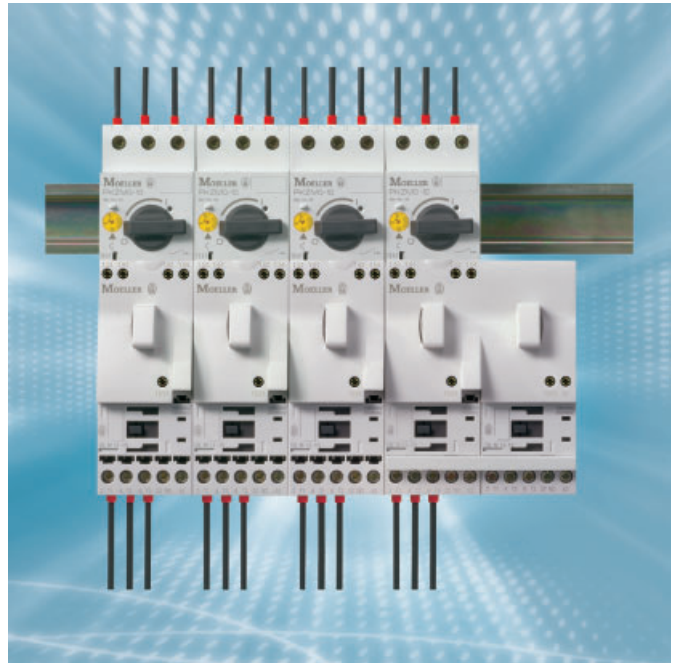
Moeller's UK distribution centre, in Aylesbury in Buckinghamshire, holds over 4,000 line items in stock. This ensures most commonly used components can be met from stock, achieving more than 98% on-time delivery performance.

This catalogue includes Moeller's most popular items in the UK market, and represents just a small part of our range. For more technical information on any items, or for details of our complete range of switchgear and automation products, please visit [www.moeller.co.uk/online\\_catalogue.htm](http://www.moeller.co.uk/online_catalogue.htm) or call the Moeller literature line on **01296 310321** and ask for a copy of our Industrial Switchgear (HPL0211-2004/2005) or Industrial Automation and Drives (HPL0213-2004/2005) catalogues.

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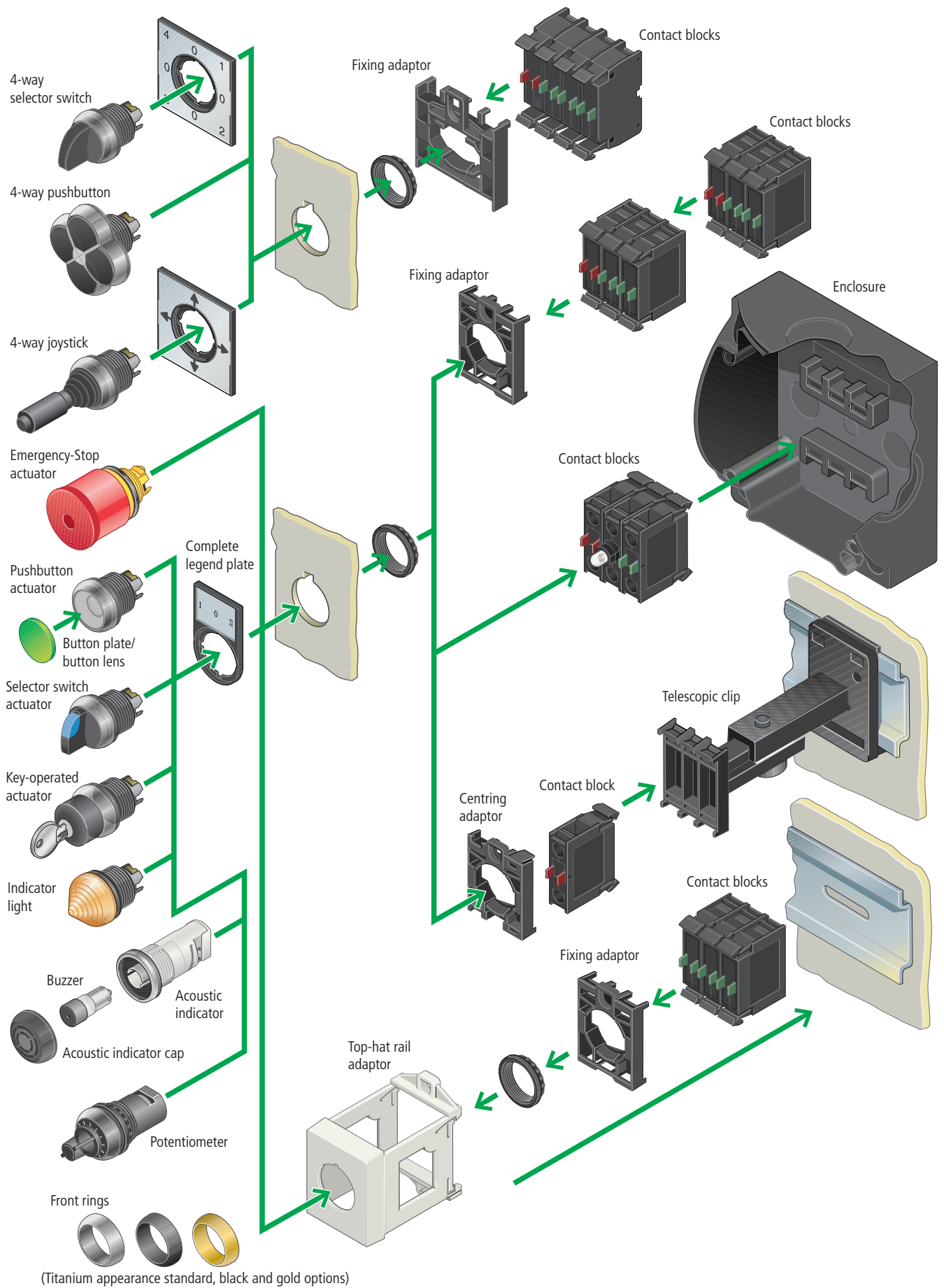


# Industrial Switchgear

## Short Form Catalogue 2005/2006

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Moeller SK0211-1149GB



Control circuit devices  
RMQ-TITAN







Competitively priced, Moeller's RMQ-Titan range comprises pushbuttons, selector switches, joysticks, Emergency-Stop and key-operated actuators.

The system includes a variety of indicator lights and illuminated pushbuttons in white, red, yellow, blue and green. They are available in two voltage ranges 12 – 30 V AC/DC and 85 - 264 V AC covering all standard applications.

Meeting all relevant international standards, this attractive, co-ordinated product range will add significant value to any machine or system.
































#### Features and benefits

- Ergonomic design ensuring ease of operation and bright illumination.
- IP66 degree of protection as standard (many devices IP67, IP69K) for use in the harshest of industrial environments.
- Vibration resistant LEDs giving a minimum life of 100,000 hours for improved reliability and high integrity.
- Fitting in the standard 22.5 mm hole, the snap fitting modular system saves both assembly and fitting time.

	Description	Button plate	Part number
<b>Pushbutton actuators, IP67, 69K</b>			
 Actuator flush	Spring-return	Without	M22-D-X
			M22-D-S
			M22-D-W
			M22-D-R
			M22-D-G
			M22-D-Y
			M22-D-B
			M22-D-R-X0
			M22-D-G-X1
			M22-D-S-X0
		 Actuator extended	Spring-return
	M22-DH-W		
	M22-DH-R		
	M22-DH-G		
	M22-DH-Y		
	M22-DH-B		



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	Description	Button plate	Part number
<b>Illuminated pushbutton actuators, IP67, IP69K</b>			
 Actuator flush	Spring-return		M22-DL-W
			M22-DL-R
			M22-DL-G
			M22-DL-Y
			M22-DL-B
 Actuator extended	Spring-return		M22-DLH-W
			M22-DLH-R
			M22-DLH-G
			M22-DLH-Y
			M22-DLH-B
<b>Double actuators, IP66</b>			
 With indicator light, white lens	Spring-return		M22-DDL-GR-X1/X0
			M22-DDL-GR-GB1/GB0
			M22-DDL-WS-X1/X0
<b>Emergency-Stop actuators, IP66, IP69K</b>			
	Non-illuminated, pull to release		M22-PV
	Illuminated, pull to release		M22-PVL
	Non-illuminated, twist to release		M22-PVT
	Illuminated, twist to release		M22-PVLT
	Key to release		M22-PVS
Sealable shroud, IP65	Transparent	-	M22-PL-PV
<b>Mushroom actuators, IP67, 69K</b>			
	Spring-return		M22-DP-S
			M22-DP-R
			M22-DP-R-X0
			M22-DP-G
			M22-DP-Y
<b>Pushbutton, 4-way, IP66</b>			
 Use M22-A4 fixing adaptor	Spring-return in all positions, 4 direction arrows		M22-D4-S-X7
	Spring-return in all positions, no inscription		M22-D4-S



	Description	Colour	Part number
<b>Joysticks, 4 positions, IP66</b>			
	Use M22-A4 fixing adaptor		
	Gated spring-return in all positions	–	M22-WJ4
	Gated stay-put in all positions	–	M22-WRJ4
Joystick labels	Blank	–	M22-XCK
	Arrows in each position	–	M22-XCK1
<b>Selector switch actuators, 2 positions, IP66</b>			
	Rotary button		
	Spring-return		M22-W
	Stay-put		M22-WR
	Thumb-grip		
	Spring-return	–	M22-WK
	Stay-put	–	M22-WRK
<b>Selector switch actuators, 3 positions, IP66</b>			
	Rotary button		
	Spring-return		M22-W3
	Stay-put		M22-WR3
	Thumb-grip		
	Spring-return	–	M22-WK3
	Stay-put	–	M22-WRK3
<b>Key-operated actuators, IP66</b>			
	2 positions		
	Spring-return	–	M22-WS
	Stay-put	–	M22-WRS
3 positions	Stay-put	–	M22-WRS3
<b>Set of coding adapters</b>			
	For converting between stay-put, spring-return and key release function	–	M22-XC-R
	For converting between stay-put and spring-return function	–	M22-XC-Y

































Moeller SK0211-1149GB

	Description	Colour	Part number
<b>Indicator lights, IP67, 69K</b>			
	Flush		M22-L-W
			M22-L-R
			M22-L-G
			M22-L-Y
			M22-L-B
	Extended, conical		M22-LH-W
			M22-LH-R
			M22-LH-G
			M22-LH-Y
			M22-LH-B
<b>Illuminated selector switch actuators, thumb-grip, IP66</b>			
<b>2 positions</b>			
	Spring-return		M22-WLK-W
			M22-WLK-R
			M22-WLK-G
			M22-WLK-Y
			M22-WLK-B
	Stay-put		M22-WRLK-W
			M22-WRLK-R
			M22-WRLK-G
			M22-WRLK-Y
			M22-WRLK-B
<b>3 positions</b>			
	Spring-return		M22-WLK3-W
			M22-WLK3-R
			M22-WLK3-G
			M22-WLK3-Y
			M22-WLK3-B
	Stay-put		M22-WRLK3-W
			M22-WRLK3-R
			M22-WRLK3-G
			M22-WRLK3-Y
			M22-WRLK3-B
<b>Fixing adapters</b>			
	Fixing adapter (front fixing) for 3 contact-/LED elements	–	M22-A
	Fixing adapter (front fixing) for 4 contact blocks	–	M22-A4
<b>Contact blocks</b>			
Front fixing	1 N/O	–	M22-K10
	1 N/C	–	M22-K01
Base fixing	1 N/O	–	M22-KC10
	1 N/C	–	M22-KC01











Description		Colour	Part number
<b>LED elements with screw terminals</b>			
Use a white LED with a yellow indicator.			
<b>Front fixing</b>			
	12 – 30 V AC/DC		M22-LED-W
			M22-LED-R
			M22-LED-G
			M22-LED-B
	85 – 264 V AC		M22-LED230-W
			M22-LED230-R
			M22-LED230-G
			M22-LED230-B
<b>Base fixing</b>			
	12 – 30 V AC/DC		M22-LEDC-W
			M22-LEDC-R
			M22-LEDC-G
			M22-LEDC-B
	85 – 264 V AC		M22-LEDC230-W
			M22-LEDC230-R
			M22-LEDC230-G
			M22-LEDC230-B
Number of ways		Colour	Part number
<b>Surface mounting enclosures, IP67, IP69K</b>			
With high-grade steel screws Enclosure base: anthracite			
	1		M22-IY1
	1		M22-I1
	2		M22-I2
	3		M22-I3
	4		M22-I4
	6		M22-I6
<b>Flush mounting plates</b>			
	1		M22-E1
	2		M22-E2
	3		M22-E3



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	Description	Colour		Impedance <i>R</i> kΩ	Part number
		Enclosure	Button		
<b>Pushbutton stations, IP67</b>					
	Emergency-Stop button with 1 N/O 1 N/C contact	Yellow	Red	—	M22-PV/KC11/IY
	Key release Emergency-Stop button with 1 N/O 1 N/C contact	Yellow	Red	—	M22-PVS/KC11/IY
	2-position key switch with 1 N/O 1 N/C contact	Grey	—	—	M22-WRS/KC11/I
	With 1 N/O 1 N/C contact	Grey	Green	—	M22-D-G-X1/KC11/I
	With 1 N/O 1 N/C contact	Grey	Red with white center	—	M22-D-R-X0/KC11/I
	Stop/Start with 2 N/O 2 N/C contacts	Grey	—	—	M22-I2-M1
	3-way with 3 N/O 3 N/C contacts	Grey	—	—	M22-I3-M1
<b>Foot and palm switches, IP67, IP69K</b>					
	Spring-return				
	1 N/O 1 N/C	Grey	Black	—	FAK-S/KC11/I
	1 N/O 1 N/C	Grey	Red	—	FAK-R/KC11/I
	Stay-put				
	Pull to release Emergency-Stop actuator				
	1 N/O 1 N/C	Yellow	Red	—	FAK-R/V/KC11/IY
	1 N/C	Yellow	Red	—	FAK-R/V/KC01/IY
<b>Potentiometers, IP66</b>					
	—	—	—	1	M22-R1K
				4.7	M22-R4K7
				10	M22-R10K
				47	M22-R47K
				100	M22-R100K
				470	M22-R470K





















	Description	Button plate	Part number
<b>Accessories</b>			
	Combination box spanner		
	For fixing RMQ front elements		M22-MS
	Blanking plug, IP67, IP69K		M22-B
			
	Actuator diaphragms for IP67, IP69K, silicone		
	Additional protection for pushbutton actuators		M22-T-D
	Additional protection for double pushbutton actuators		M22-T-DD
	Telescopic mounting clip		
	For three contact/LED elements with base fixing, including centring adapter		M22-TC
	Compact acoustic indicator, IP40		
	Front black, without buzzer, BA 9s socket		M22-AMC
	Buzzer for acoustic indicator		
	Continuous tone, 18 – 30 V AC/DC		M22-XAM
	Pulsed tone, 18 – 30 V DC		M22-XAMP
	Top-hat rail adapter		
	Top-hat rail IEC/EN 60715 for use with front fixing components		M22-IVS



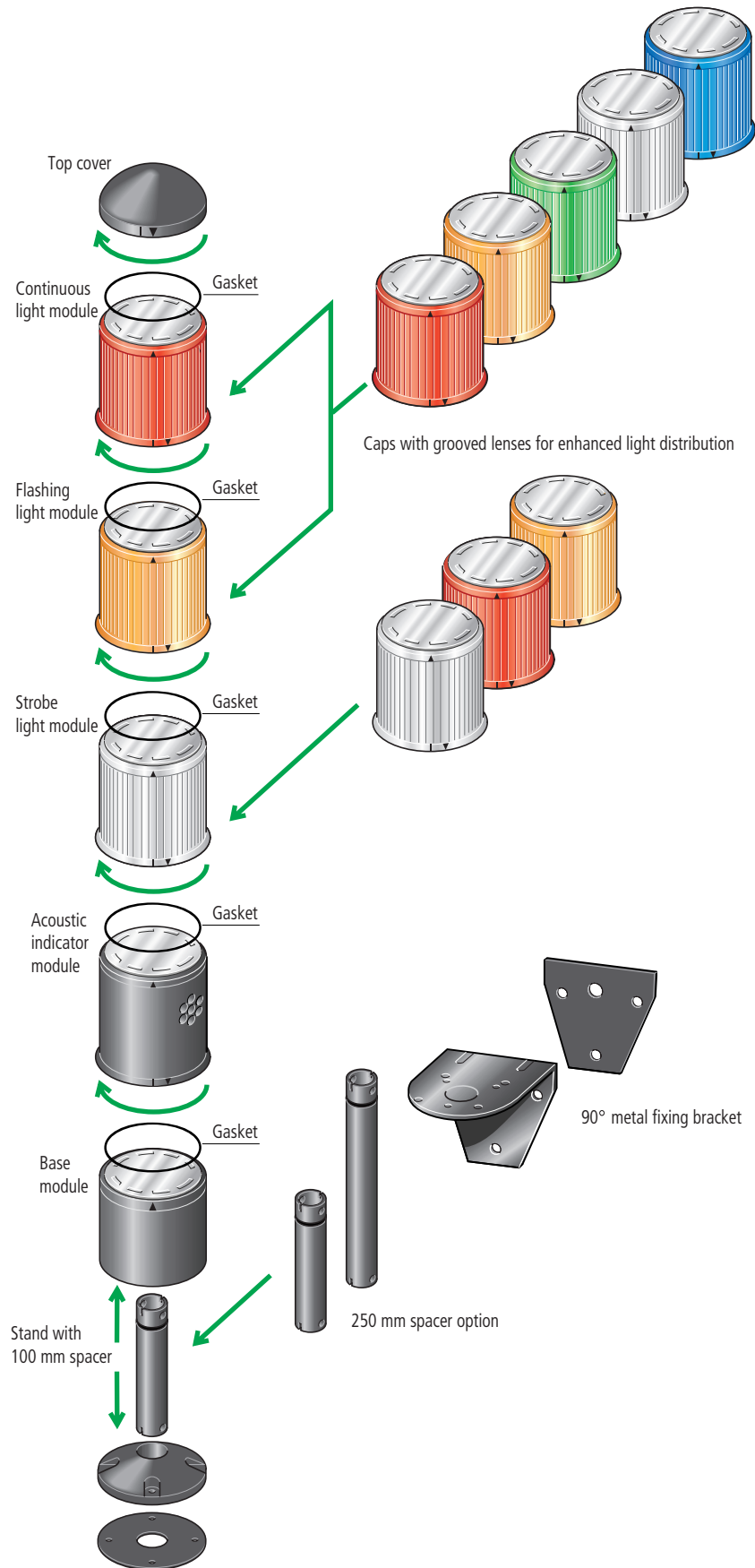
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	Inscription	Colour	Part number
<b>Complete legend plates, IP66</b>			
	Round, black, 30 × 50 mm		
	STOP	●	M22S-ST-GB0
	START	●	M22S-ST-GB1
	OFF	●	M22S-ST-GB5
	ON	●	M22S-ST-GB6
	RUN	●	M22S-ST-GB7
	FAULT	●	M22S-ST-GB8
	OFF ON	●	M22S-ST-GB10
	MAN. AUTO	●	M22S-ST-GB11
	MAN. 0 AUTO	●	M22S-ST-GB12
<b>Legend holder without label, IP66</b>			
Round, black			
For actuators, 30 × 50 mm		●	M22S-ST-X
For double actuators, 30 × 75 mm		●	M22S-STDD-X
Insert plate for legend holder	Blank	Aluminium	M22-XST
<b>Emergency-Stop labels, IP66</b>			
	Lettering black, 30 × 50 mm		
	Emergency-Stop	●	M22-XZK-GB99
	Blank	●	M22-XZK
	50 × 50 mm		
	Emergency-Stop in 4 languages	●	M22-XYK1
	Diameter = 90 mm		
	Emergency-Stop in 4 languages	●	M22-XAK1
	Blank		M22-XAK
Diameter = 60 mm	Emergency-Stop in 4 languages	●	M22-XBK1



	Description	Button plate	Part number		
<b>Button plates for pushbutton actuators</b>					
	Flush		M22-XD-S		
			M22-XD-W		
			M22-XD-R		
			M22-XD-G		
			M22-XD-Y		
			M22-XD-B		
			M22-XD-G-X1		
			M22-XD-R-X0		
			Extended		M22-XDH-S
					M22-XDH-W
	M22-XDH-R				
	M22-XDH-G				
	M22-XDH-Y				
	M22-XDH-B				
	M22-XDH-G-X1				
	M22-XDH-R-X0				


























Mounted on top of a machine or control panel SL signal towers provide operating staff, working near or at a distance, with information about a machine's operation, stoppage, interruption in material flow or, for example, fault alarms. Consequently any problems or faults can be indicated and resolved quickly.

The user has the choice of four types of indicator: continuous, flashing, or strobe light and/or an audible alarm. Choose between filament bulbs, or LEDs for more critical applications – specially shaped lenses ensure excellent visibility from all directions.





















#### Features and benefits

- Individual modules can be combined as required, enabling users to assemble their own combinations.
- Modules are freely programmable by simply setting jumpers on the module board.
- Fitting modules together is quick and easy with no tools required – simply plug on the bayonet fitting and turn slightly.
- Rated as standard to IP54, with an IP65 option for use in harsher environments.

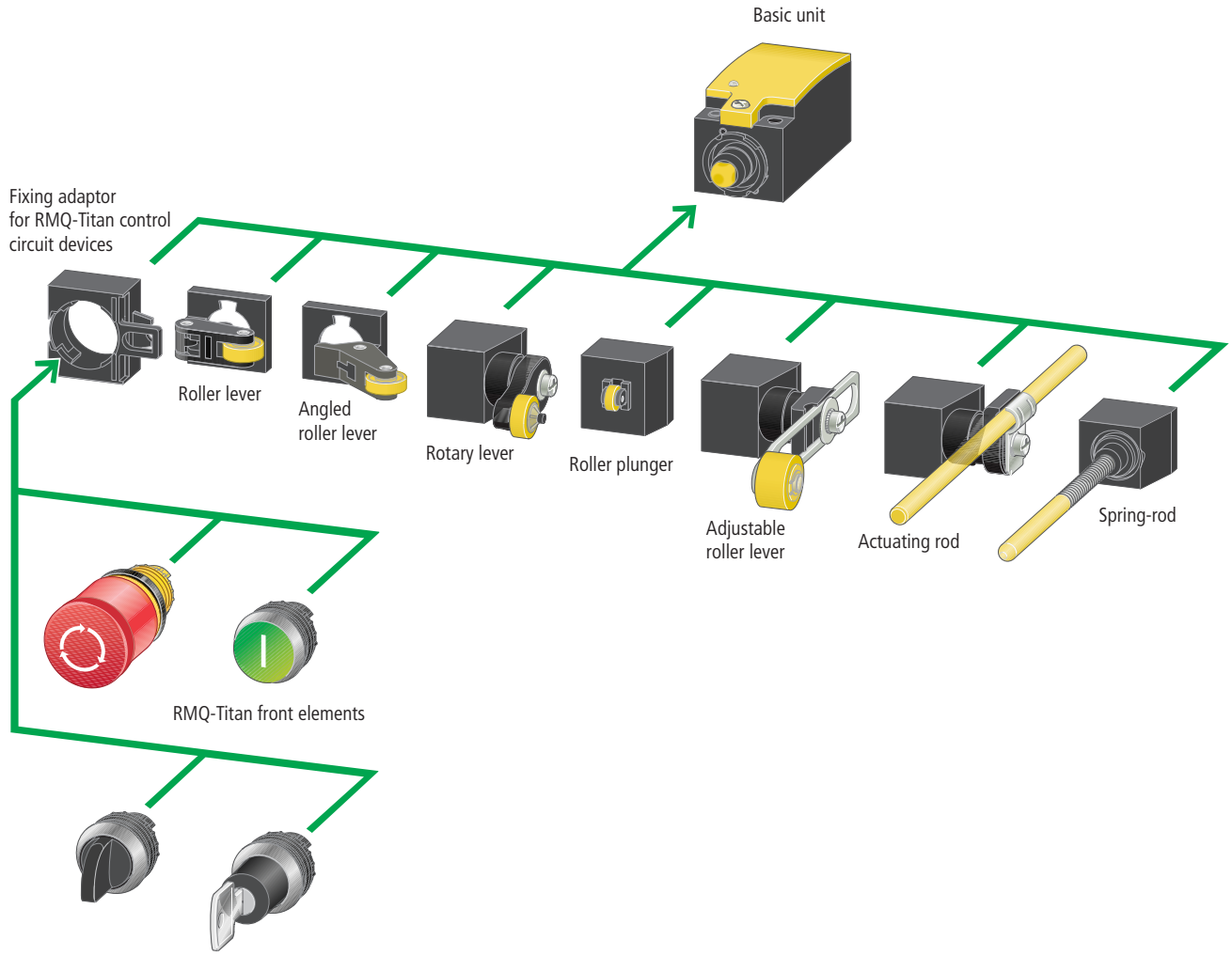
	Description	Colour	Part number	
	Base module, IP54			
	With screw terminals and top cover		SL-B	
	Continous light modules, IP54			
		Without filament lamp/LED		SL-L-B
			SL-L-G	
			SL-L-R	
			SL-L-W	
			SL-L-Y	
	Flashing light modules, IP54			
		24 V AC/DC Without filament lamp/LED		SL-BL24-B
			SL-BL24-G	
			SL-BL24-R	
			SL-BL24-W	
			SL-BL24-Y	
	230 V AC Without filament lamp/LED		SL-BL230-B	
			SL-BL230-G	
			SL-BL230-R	
			SL-BL230-W	
			SL-BL230-Y	



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	Description	Colour	Part number
<b>Strobe light module, IP54</b>			
	230 V AC With flash tube		SL-FL230-R
			SL-FL230-W
			SL-FL230-Y
<b>Acoustic indicator modules, IP20</b>			
	<b>Continuous tone</b>		
	12 – 36 V AC/DC		SL-A24
	110 – 230 V AC/DC		SL-A110-230
	<b>Pulsed tone</b>		
12 – 36 V AC/DC		SL-AP24	
110 – 230 V AC/DC		SL-AP110-230	
<b>Accessories</b>			
	Stand with spacer		
	100 mm		SL-F100
	250 mm		SL-F250
	Fixing bracket	90°, metal	SL-FW
	Filament lamps, BA 15d, 5 – 7 W	24 V DC	SL-L24
		110 – 130 V AC	SL-L130
		230 V AC	SL-L230
	Multiple LED, BA 15d		SL-LED-B
			SL-LED-G
			SL-LED-R
			SL-LED-W
			SL-LED-Y
	Set of gaskets	For increasing the degree of protection to IP65 (not for the acoustic indicator), 4 gaskets for use with 3 modules	SL-IP65





Moeller SK0211-1149GB



Moeller's LS-Titan position switches are quick and easy to install, highly flexible and safe. Rated to IP66, the LS-Titan range is available in two versions: For normal operating conditions in corrosive environments, or in the food industry, the LS versions have a totally insulated housing, whereas the LSM versions in their robust metal enclosures are suited to mechanically harsher environments.




All devices are actuated mechanically and, with their positively opening and interlocked opposing contacts, are suitable for use in safety circuits. A unique feature is the ability to combine LS-Titan with pushbutton actuators, selector switches or Emergency-Stop buttons from the RMQ-Titan range. These can simply be snapped on to act as the operating head of the position switch.

The LSE (limit switch electronic) has a freely programmable operating point that can be easily set. Just move the plunger from the original position to the new switching position and press the teach-in button with a screwdriver for 1 second. Once the LED flashes at a higher rate, the new position is accepted and is usable. The switching point is freely adjustable within a range of 0.5 to 5.5 mm.









#### Features and benefits

- Conform to EN 50047, so ensuring interchangeability
- Modular range of basic units and operating heads are quickly and easily installed with a bayonet catch, offering flexibility of application.
- Maintenance free and vibration resistant cage clamp terminals







	Description	Contacts	Part number
<b>Insulated, enclosed units, IP66, rounded plunger</b>			
<b>Basic units</b>			
	Standard action contacts	1 N/O, 1 N/C	LS-11
	Make-before-break contacts	1 N/O, 1 N/C	LS-11D
	Snap-action contacts	1 N/O, 1 N/C	LS-11S
	Standard action contacts	2 N/O	LS-20
<b>Basic units with electronically adjustable operating point</b>			
	Indicator light to show status	1 N/O, 1 N/C	LSE-11
		2 N/C	LSE-02
<b>Metal, enclosed units, IP66, rounded plunger</b>			
<b>Basic units</b>			
	Standard action contacts	1 N/O, 1 N/C	LSM-11
	Make-before-break contacts	1 N/O, 1 N/C	LSM-11D
	Snap-action contacts	1 N/O, 1 N/C	LSM-11S
	Standard action contacts	2 N/O	LSM-20
	Standard action contacts	2 N/C	LSM-02
<b>Accessories</b>			
	Fixing adapter	For operation by RMQ-Titan actuators	M22-LS

Operating heads

Roller lever	Angled roller lever	Roller plunger	Rotary lever	Adjustable roller lever (D = 18 mm)	Actuating rod (insulated)	Actuating rod (metal)	Spring rod (use with snap-action contact only)
							

Insulated version

LS-XL	LS-XLA	LS-XP	LS-XRL	LS-XRLA	LS-XRR	LS-XRRM	LS-XS
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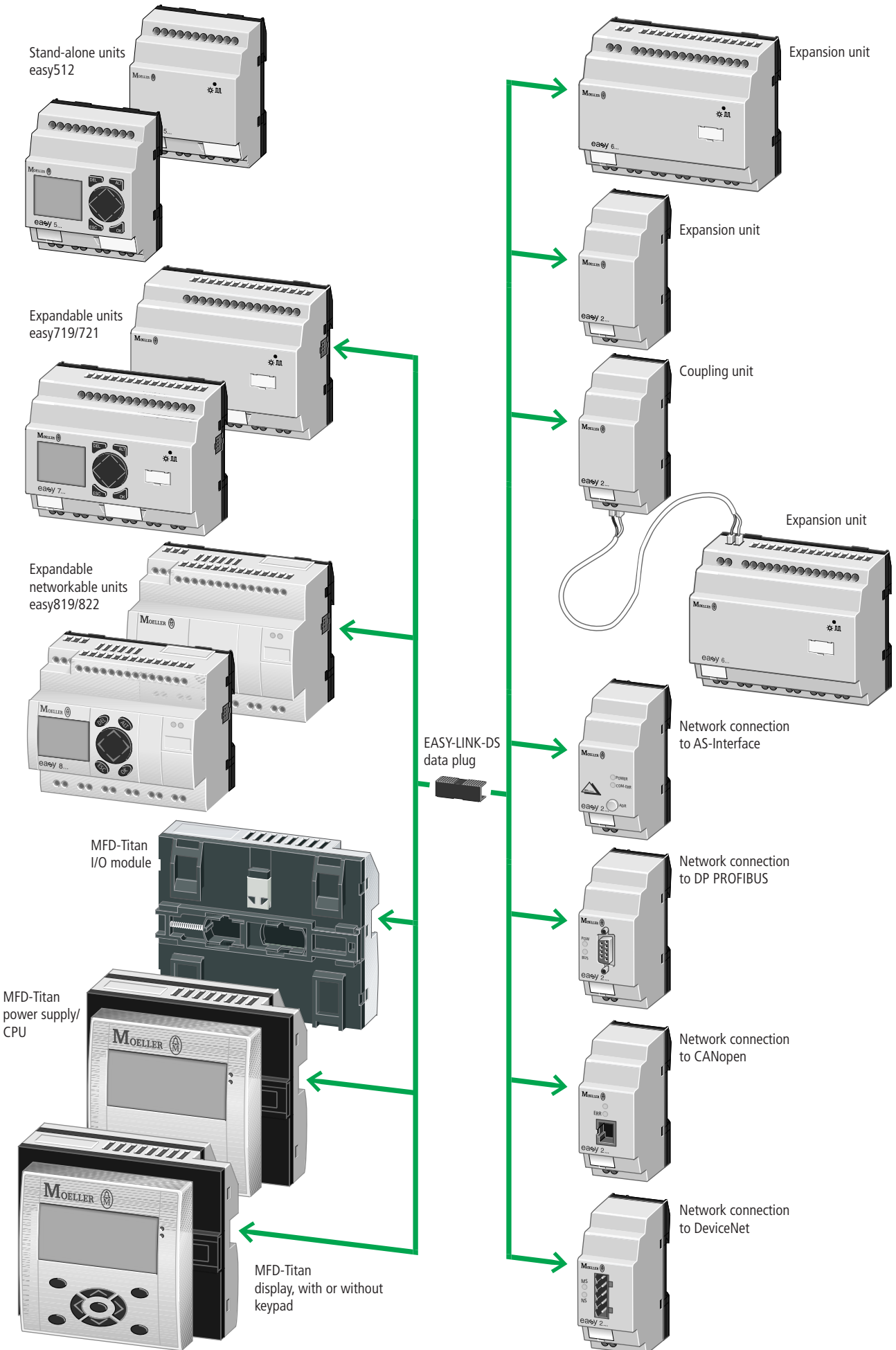
							
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Metal version

LSM-XL	LSM-XLA	LSM-XP	LSM-XRL	LSM-XRLA	LSM-XRR	LSM-XRRM	LSM-XS
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Moeller SK0211-1149GB



easy control relays  
MFD-Titan multi-function displays





### easy control relays

Moeller's market leading range of easy intelligent relays brings timers, relays, inputs and outputs into one compact device that can be easily configured, providing unprecedented levels of flexibility together with considerable savings in commissioning time.

#### Features and benefits

- Comprehensive range from stand-alone units with a few timing relays and a time switch to networked applications with hundreds of I/O and connection to the revolutionary MFD IP65 panel display
- Simple circuit diagram entry on the easy unit itself or via the EASY-SOFT drag and drop software.
- Program download to plug-in EPROM memory module. Instant programming of other similar applications, or simple, secure back up for critical processes.
- Expansion and networking – link up to eight easy control relays via EASY-NET.

### MFD multi-function display

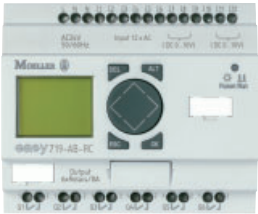
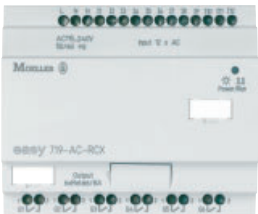
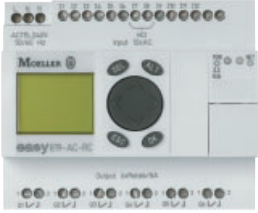
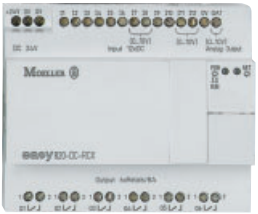


The MFD-Titan offers a 60 x 30 mm LCD display in an IP65 housing, designed to match the styling of the RMQ-Titan control circuit devices. An optional keypad enables control functions to be implemented, recipes selected or set point values to be entered directly into the device. Two LEDs on the front of the unit can also be illuminated or flashed to attract attention or indicate machine status.

#### Features and benefits

- Back-lit display – capable of displaying graphics, text, data, time etc. all with brilliant clarity.
- Incredibly quick and simple installation – mounts easily into two standard 22.5 mm holes saving time, tooling and hassle whilst maintaining IP65 degree of protection.
- Customised inscription – optional on both the function buttons and the display unit itself.
- Simple control and visualisation set-up – utilising all of the function blocks available with the easy800 and the simplicity of EASY-SOFT-PRO.




easy control relays	Inputs		Outputs			Additional features			Part number
	Digital	Analog	Relay (8 amp.)	Transistor	Analog	Display & keypad	Real time clock	Supply	
<b>Stand-alone base units (easy500)</b>									
	8		4			✓		110/240 V AC	EASY512-AC-R
	8		4			✓	✓	110/240 V AC	EASY512-AC-RC
	8	2	4			✓	✓	24 V AC	EASY512-AB-RC
	8	2	4			✓	✓	12 V DC	EASY512-DA-RC
	8	2	4			✓		24 V DC	EASY512-DC-R
	8	2	4		4	✓	✓	24 V DC	EASY512-DC-RC
	8		4				✓	110/240 V AC	EASY512-AC-RCX
	8	2	4				✓	24 V AC	EASY512-AB-RCX
	8	2	4				✓	12 V DC	EASY512-DA-RCX
	8	2	4				✓	24 V DC	EASY512-DC-RCX
	8	2	4		4		✓	24 V DC	EASY512-DC-TCX

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	Inputs		Outputs			Additional features			Part number
	Digital	Analog	Relay (8 amp.)	Transistor	Analog	Display & keypad	Real time clock	Supply	
<b>Expandable base units (easy700)</b>									
	12		6			✓	✓	110/240 V AC	EASY719-AC-RC
	12	4	6			✓	✓	24 V AC	EASY719-AB-RC
	12	4	6			✓	✓	24 V DC	EASY719-DC-RC
	12	4	6			✓	✓	12 V DC	EASY719-DA-RC
	12	4		8		✓	✓	24 V DC	EASY721-DC-TC
	12		6				✓	110/240 V AC	EASY719-AC-RCX
	12	4	6				✓	24 V AC	EASY719-AB-RCX
	12	4	6				✓	24 V DC	EASY719-DC-RCX
	12	4	6				✓	12 V DC	EASY719-DA-RCX
	12	4		8			✓	24 V DC	EASY721-DC-TCX
<b>Expandable, networkable base units (easy800)</b>									
	12		6			✓	✓	110/240 V AC	EASY819-AC-RC
	12	4	6			✓	✓	24 V DC	EASY819-DC-RC
	12	4	6		1	✓	✓	24 V DC	EASY820-DC-RC
	12	4		8		✓	✓	24 V DC	EASY821-DC-TC
	12	4		8	1	✓	✓	24 V DC	EASY822-DC-TC
	12		6				✓	110/240 V AC	EASY819-AC-RCX
	12	4	6				✓	24 V DC	EASY819-DC-RCX
	12	4	6		1		✓	24 V DC	EASY820-DC-RCX
	12	4		8			✓	24 V DC	EASY821-DC-TCX
	12	4		8	1		✓	24 V DC	EASY822-DC-TCX
<b>Expansion units (for easy700, easy800)</b>									
	12		6					110/240 V AC	EASY618-AC-RE
	12		6					24 V DC	EASY618-DC-RE
	12			8				24 V DC	EASY620-DC-TE
			2						EASY202-RE





MFD-Titan multi-function displays		Description	Part number				
<b>Displays</b>							
		Display with graphical backlit screen	MFD-80				
		Display with graphical backlit screen and keypad	MFD-80-B				
<b>Power supply/CPU</b>							
		24 V DC, with advanced functions (no EASY-NET)	MFD-CP8-ME				
		24 V DC, with advanced functions and EASY-NET	MFD-CP8-NT				
		100 – 240 V AC, with advanced functions (no EASY-NET)	MFD-AC-CP8-ME				
		100 – 240 V AC, with advanced functions and EASY-NET	MFD-AC-CP8-NT				
<b>I/O modules</b>							
	Inputs Digital	Analog	Outputs Relay (8 amp.)	Transistor	Analog	Supply	Part number
	12	4	4			24 V DC	MFD-R16
	12		4			110/240 V AC	MFD-AC-R16
	12	4	4		1	24 V DC	MFD-RA17
	12	4		4		24 V DC	MFD-T16
12	4		4	1	24 V DC	MFD-TA17	

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	Description	Part number
<b>Communication</b>		
Coupling unit enabling remote expansion	up to 30 m	EASY200-EASY
PC connection cable	For easy500/700	EASY-PC-CAB
PC connection cable	For easy800 and MFD units	EASY800-PC-CAB
Cable for EASY-NET connection	30 cm	EASY-NT-30
Plug for EASY-NET bus termination	2 required	EASY-NT-R
<b>Power supplies</b>		
	24 V DC, 1.25 A	EASY400-POW
	Dual output: 24 V DC, 250 mA and 12 V DC, 20 mA	EASY200-POW
<b>Memory modules</b>		
	For easy500/700	EASY-M-32K
	For easy800	EASY-M-256K
<b>Software</b>		
	For easy500/700	EASY-SOFT-BASIC
	For easy500/700/800 and MFD displays	EASY-SOFT-PRO
<b>Accessories</b>		
Mounting rail	For MFD expansion	MFD-TS-144
IP65 display repeater	For easy500	MFD-CP4-500
IP65 display repeater	For easy800	MFD-CP4-800
		
<b>Manuals</b>		
easy500/700 instruction manual		AWB2528-1508-GB
easy800 instruction manual		AWB2528-1423-GB
MFD instruction manual		AWB2528-1480GB







ETR4 timing relays control machines and systems to an accuracy of a hundredth of a second across a wide range of timing functions.

The relays in the ETR4 range are only 22.5 mm wide. When combined with contactors and contactor relays they offer an ideal space-saving solution for virtually all timing requirements.

The DIL ET timing relays are 45 mm wide, so matching the xStart contactors up to DILM12.

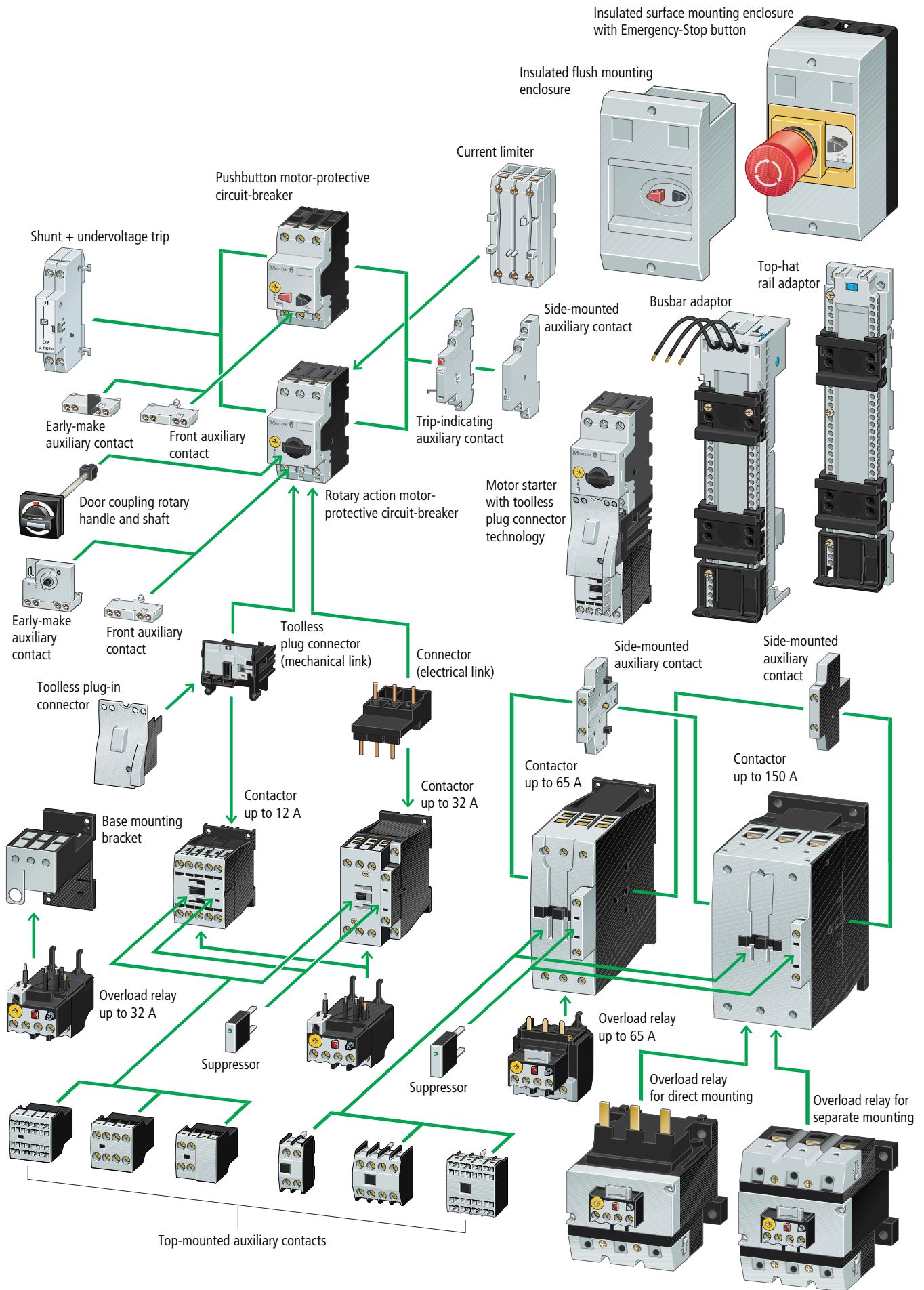
The ETR4-69 and ETR4-70 are extremely versatile with nine selectable functions and ten timing ranges.

#### Features and benefits

- Compact design saves panel space.
- Simple fitting and setting reduce assembly and commissioning time.
- Extensive time ranges enable use in most processes.
- Multi-function versions offer adaptability.
- Clear dial settings and LED status indication provide accurate information.
- International approvals ensure acceptance.

	Time range (See table below)	Description	Part number
<b>24 V – 240 V AC/DC, 50/60 Hz</b>			
45 mm wide			
	A	On-delayed	DILET11-30-A
	B	On-delayed	DILET11-M-A
	B	Multi-function with connection for remote potentiometer	DILET70-A
<b>24 V – 240 V AC/DC, 50/60 Hz</b>			
22.5 mm wide			
	D	On-delayed	ETR4-11-A
	C	Star-delta	ETR4-51-A
	D	Multi-function	ETR4-69-A
	D	Multi-function with connection for potentiometer and 2 C/O contacts	ETR4-70-A
<b>346 V – 440 V, 50/60 Hz</b>			
22.5 mm wide			
	D	On-delayed	ETR4-11-W
	C	Star-delta	ETR4-51-W
	D	Multi-function	ETR4-69-W

Time range			
A	B	C	D
1.5 – 30 s.	0.05 – 1 s.	3 – 60 s.	0.05 – 1 s.
	0.15 – 3 s.		0.15 – 3 s.
	0.5 – 10 s.		0.5 – 10 s.
	3 – 60 s.		1.5 – 30 s.
	0.15 – 3 min.		5 – 100 s.
	0.5 – 10 min.		15 – 300 s.
	3 – 60 min.		1.5 – 30 min.
	0.15 – 3 hr.		15 – 300 min.
	0.5 – 10 hr.		1.5 – 30 hr.
	3 – 60 hr.		5 – 100 hr.







With just four frame sizes up to 150 A, the new DILM contactors are significantly more compact than their predecessors, and include an integral auxiliary contact for contactors up to 32 A. They are perfectly complemented by the DILA contactor relays – available as basic units with four contact paths, they can be extended to eight contacts by using top mounting auxiliary modules.

The motor starter combinations comprise a PKZM0 motor-protective circuit-breaker (see page 49) and xStart contactor. Both devices are mechanically interconnected via a plug-in element. The electrical connection is provided by a plug-in contact element, using the unique toolless plug connection technology.




#### Features and benefits

- Reduced power consumption coils mean lower heat dissipation and smaller control transformers.
- Coil terminals on the front face simplify connection.
- Twin box terminals allow the secure connection of differing cable cross-sections and facilitate the 'looping' of cables.
- Voltage tolerance of the coils exceeds IEC/EN 60947 standard, ensuring effective protection in the event of under and over voltage.
- Identical frame size for AC and DC devices simplifies engineering.
- DC devices have integral suppressors and low-consumption coils, that can be operated directly from PLC outputs saving time and expense.
- Unique toolless plug connection for MSC motor starters significantly reduces installation time.




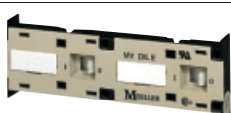

	Contacts	Part number
<b>Mini contactor relays</b>		
AC coil		
	2 N/O + 2 N/C	DILER-22(24V50HZ)
	2 N/O + 2 N/C	DILER-22(110V50HZ)
	2 N/O + 2 N/C	DILER-22(230V50HZ)
	3 N/O + 1 N/C	DILER-31(24V50HZ)
	3 N/O + 1 N/C	DILER-31(110V50HZ)
	3 N/O + 1 N/C	DILER-31(230V50HZ)
	4 N/O	DILER-40(24V50HZ)
	4 N/O	DILER-40(110V50HZ)
	4 N/O	DILER-40(230V50HZ)
	DC coil	
	2 N/O + 2 N/C	DILER-22-G(24VDC)
	3 N/O + 1 N/C	DILER-31-G(24VDC)
	4 N/O	DILER-40-G(24VDC)
<b>Auxiliary contact modules</b>		
Top mounting		
	1 N/O + 1 N/C	11DILE
	2 N/O + 2 N/C	22DILE
	3 N/O + 1 N/C	31DILE



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	Contacts	Part number
<b>Contactor relays</b>		
AC coil		
	2 N/O + 2 N/C	DILA-22(24V50HZ)
	2 N/O + 2 N/C	DILA-22(110V50HZ)
	2 N/O + 2 N/C	DILA-22(230V50HZ)
	3 N/O + 1 N/C	DILA-31(24V50HZ)
	3 N/O + 1 N/C	DILA-31(110V50HZ)
	3 N/O + 1 N/C	DILA-31(230V50HZ)
	4 N/O	DILA-40(24V50HZ)
	4 N/O	DILA-40(110V50HZ)
	4 N/O	DILA-40(230V50HZ)
DC coil		
	2 N/O + 2 N/C	DILA-22(24VDC)
	3 N/O + 1 N/C	DILA-31(24VDC)
	4 N/O	DILA-40(24VDC)
<b>Auxiliary contact modules</b>		
Top mounting		
	1 N/O + 1 N/C	DILA-XHI11
	3 N/O + 1 N/C	DILA-XHI31
	2 N/O + 2 N/C	DILA-XHI22
	4 N/O	DILA-XHI40



	Contacts	For use with	Part number
<b>Mini contactors up to 4 kW, 3-pole</b>			
<b>AC coil</b>			
	1 N/O		DILEM-10(24V50HZ)
	1 N/O		DILEM-10(110V50HZ)
	1 N/O		DILEM-10(230V50HZ)
	1 N/O		DILEM-10(400V50HZ)
	1 N/C		DILEM-01(24V50HZ)
	1 N/C		DILEM-01(110V50HZ)
	1 N/C		DILEM-01(230V50HZ)
	1 N/C		DILEM-01(400V50HZ)
<b>DC coil</b>			
	1 N/O		DILEM-10-G(24VDC)
	1 N/C		DILEM-01-G(24VDC)
<b>Auxiliary contact modules</b>			
<b>Top mounting</b>			
	1 N/O + 1 N/C	DILEM	11DILEM
	2 N/O + 2 N/C	DILEM	22DILEM
<b>Accessories</b>			
<b>Varistor suppressor</b>			
		DILEM AC, 24 – 48 V	VGDILE48
		DILEM AC, 110 – 250 V	VGDILE250
<b>Mechanical interlock</b>			
		DILEM	MVDILE
<b>RC suppressor</b>			
		DILEM AC, 24 – 48 V	RCDILE48
		DILEM AC, 110 – 250 V	RCDILE250





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Rating AC-3 400 V	Cross reference for new contactors DILM range, established system				xStart DILM range, new system			
	Basic units	Auxiliary contacts	Rated operational current $I_{er}$ , AC-3 400 V	Conventional thermal current $I_{th} = I_{er}$ , AC-1 40 °C	Basic units	Auxiliary contacts	Rated operational current $I_{er}$ , AC-3 400 V	Conventional thermal current $I_{th} = I_{er}$ , AC-1 40 °C
kW			A	A			A	A
3	–	–	–	–	DILM7-10	1 N/O	7	22
	–	–	–	–	DILM7-01	1 N/C	7	22
4	DIL00M-10	1 N/O	8.8	22	DILM9-10	1 N/O	9	22
	DIL00M-01	1 N/C	8.8	22	DILM9-01	1 N/C	9	22
5.5	DIL00AM-10	1 N/O	12	22	DILM12-10	1 N/O	12	22
	DIL00AM-01	1 N/C	12	22	DILM12-01	1 N/C	12	22
7.5	DIL0M	0	15.5	38	DILM17-10	1 N/O	18	40
	–	–	–	–	DILM17-01	1 N/C	18	40
11	DIL0AM	0	22.5	38	DILM25-10	1 N/O	25	45
	–	–	–	–	DILM25-01	1 N/C	25	45
15	DIL1M	0	30	60	DILM32-10	1 N/O	32	45
	–	–	–	–	DILM32-01	1 N/C	32	45
18.5	DIL1AM	0	36	60	DILM40	0	40	60
22	DIL2M	0	43	98	DILM50	0	50	70
30	DIL2AM	0	58	98	DILM65	0	65	85

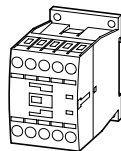
	kW rating (AC-3, 400 V)	Auxiliary contacts	Part number
<b>Contactors</b>			
AC coil			
	3	1 N/O	DILM7-10(24V50HZ)
		1 N/O	DILM7-10(110V50HZ)
		1 N/O	DILM7-10(230V50HZ)
		1 N/O	DILM7-10(400V50HZ)
		1 N/C	DILM7-01(230V50HZ)
DC coil			
	3	1 N/O	DILM7-10(24VDC)
		1 N/C	DILM7-01(24VDC)
AC coil			
	4	1 N/O	DILM9-10(24V50HZ)
		1 N/O	DILM9-10(110V50HZ)
		1 N/O	DILM9-10(230V50HZ)
		1 N/O	DILM9-10(400V50HZ)
		1 N/C	DILM9-01(230V50HZ)
DC coil			
	4	1 N/O	DILM9-10(24VDC)
		1 N/C	DILM9-01(24VDC)
AC coil			
	5.5	1 N/O	DILM12-10(24V50HZ)
		1 N/O	DILM12-10(110V50HZ)
		1 N/O	DILM12-10(230V50HZ)
		1 N/O	DILM12-10(400V50HZ)
		1 N/C	DILM12-01(230V50HZ)
DC coil			
	5.5	1 N/O	DILM12-10(24VDC)
		1 N/C	DILM12-01(24VDC)





	kW rating (AC-3, 400 V)	Auxiliary contacts	Part number
<b>Contactors</b>			
AC coil	7.5	1 N/O	DILM17-10(24V50HZ)
		1 N/O	DILM17-10(110V50HZ)
		1 N/O	DILM17-10(230V50HZ)
		1 N/O	DILM17-10(400V50HZ)
DC coil	7.5	1 N/O	DILM17-10(RDC24)
AC coil	11	1 N/O	DILM25-10(24V50HZ)
		1 N/O	DILM25-10(110V50HZ)
		1 N/O	DILM25-10(230V50HZ)
		1 N/O	DILM25-10(400V50HZ)
DC coil	11	1 N/O	DILM25-10(RDC24)

### Contactor application ratings

	DIL	M7	M9	M12
Rated operational voltage				
<b>AC-3</b>				
Rated power of three-phase motor 50 – 60 Hz				
380 V – 400 V		3	4	5.5
<b>AC-4</b>				
Rated power of three-phase motor 50 – 60 Hz				
380 V – 400 V		2.2	2.5	3
<b>AC-1</b>				
Rated power with resistive load, 40 °C				
380 V – 400 V		14	14	14
Conventional thermal free air current $I_{th} = I_e$ open at 60 °C				
up to 690 V		22	22	22

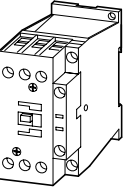


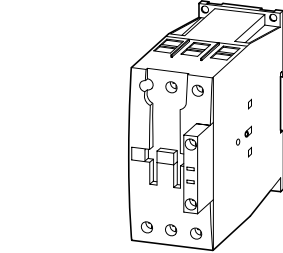




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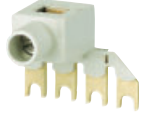



	kW rating (AC-3, 400 V)	Auxiliary contacts	Part number
<b>Contactors</b>			
AC coil			
	15	1 N/O	DILM32-10(24V50HZ)
		1 N/O	DILM32-10(110V50HZ)
		1 N/O	DILM32-10(230V50HZ)
		1 N/O	DILM32-10(400V50HZ)
DC coil			
	15	1 N/O	DILM32-10(RDC24)
AC coil			
	18.5	-	DILM40(24V50HZ)
		-	DILM40(110V50HZ)
		-	DILM40(230V50HZ)
		-	DILM40(400V50HZ)
	22	-	DILM50(24V50HZ)
		-	DILM50(110V50HZ)
		-	DILM50(230V50HZ)
		-	DILM50(400V50HZ)
	30	-	DILM65(24V 50HZ)
		-	DILM65(110V50HZ)
		-	DILM65(230V50HZ)
		-	DILM65(400V50HZ)
DC coil			
	18.5	-	DILM40(RDC24)
	22	-	DILM50(RDC24)
	30	-	DILM65(RDC24)

Contactors and overloads  
xStart







					
<b>M17</b>	<b>M25</b>	<b>M32</b>	<b>M40</b>	<b>M50</b>	<b>M65</b>
kW	kW	kW	kW	kW	kW
7.5	11	15	18.5	22	30
4.5	6	7	9	10	12
26	29	29	39	46	55
A	A	A	A	A	A
40	45	45	60	70	85



	Contacts	For use with	Part number
<b>Auxiliary contact modules (AC-1, <math>I_{th} = I_{er}</math>, 10 A)</b>			
<b>Top mounting</b>			
	1 N/O + 1 N/C	DILM9 – DILM32	DILM32-XHI11
	2 N/C		DILM32-XHI02
	2 N/O + 2 N/C		DILM32-XHI22
	2 N/O	DILM40 – DILM65	DILM150-XHI20
	1 N/O + 1 N/C		DILM150-XHI11
	2 N/C		DILM150-XHI02
	4 N/O	DILM40 – DILM65	DILM150-XHI40
	3 N/O + 1 N/C		DILM150-XHI31
	2 N/O + 2 N/C		DILM150-XHI22
	1 N/O + 3 N/C		DILM150-XHI13
	4 N/C		DILM150-XHI04
	2 N/O (1 EM) + 2 N/C (1 LB)		DILM150-XHIV22
<b>Side mounting</b>			
	1 N/O + 1 N/C	DILM40 – DILM65	DILM1000-XHI11-SI
	1 N/O (1 EM) + 1 N/C (1 LB)	DILM40 – DILM65	DILM1000-XHIV11-SI
	1 N/O + 1 N/C	DILM40 – DILM65 alongside SI module	DILM1000-XHI11-SA
<b>Accessories</b>			
<b>Paralleling links</b>			
		DILM7 – DILM12	DILM12-XP1
		DILM17 – DILM32	DILM32-XP1
		DILM40 – DILM65	DILM65-XP1
<b>Star-delta wiring links</b>			
		DILM7 – DILM12	DILM12-XSL
		DILM17 – DILM32	DILM32-XSL
<b>Reversing wiring links</b>			
		DILM7 – DILM12	DILM12-XRL
		DILM17 – DILM32	DILM32-XRL
			



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	For use with	Part number
<b>Accessories</b>		
Star points		
	DILM7 – DILM12	DILM12-XS1
	DILM17 – DILM32	DILM32-XS1
	DILM40 – DILM65	DILM65-XS1
Mechanical interlocks		
	DILM7 – DILM12	DILM12-XMV
	DILM17 – DILM32	DILM32-XMV
	DILM40 – DILM65	DILM65-XMV
<b>System for direct connection between PKZM0 and DILM contactors</b>		
DOL toolless plug connection	PKZM0 + DILM7/9/12	PKZM0-XDM12
		
DOL starter connection kit	PKZM0 + DILM17/25/32	PKZM0-XDM32
Reversing toolless plug connection	PKZM0 + DILM7/9/12-01	PKZM0-XRM12
		
Reversing starter connection kit	PKZM0 + DILM17/25/32	PKZM0-XRM32





Cross reference for new overloads Setting range $I_r$ A	Z00, Z1 range, established system	xStart ZB range, new system
0.1 – 0.16	Z00-0,16	ZB12-0,16 ZB32-0,16
0.16 – 0.24	Z00-0,24	ZB12-0,24 ZB32-0,24
0.24 – 0.4	Z00-0,4	ZB12-0,4 ZB32-0,4
0.4 – 0.6	Z00-0,6	ZB12-0,6 ZB32-0,6
0.6 – 1	Z00-1,0	ZB12-1,0 ZB32-1,0
1 – 1.6	Z00-1,6	ZB12-1,6 ZB32-1,6
1.6 – 2.4	Z00-2,4	ZB12-2,4 ZB32-2,4
2.4 – 4	Z00-4	ZB12-4 ZB32-4
4 – 6	Z00-6	ZB12-6 ZB32-6
6 – 10	Z00-10	ZB12-10 ZB32-10
9 – 12	–	ZB12-12
10 – 16	Z00-16	ZB32-16
16 – 24	Z00-24	ZB32-24
24 – 32	–	ZB32-32
6 – 10	Z1-10	ZB65-10
10 – 16	Z1-16	ZB65-16
16 – 24	Z1-24	ZB65-24
24 – 40	Z1-40	ZB65-40
40 – 57	Z1-57	ZB65-57
50 – 65	Z1-63	ZB65-63

**Setting range of  
overload trip**

For use with contactors



DILEM



DILM7 – DILM12



DILM17 – DILM32



DILM40 – DILM50

**Overload relays**

A	DILEM	DILM7 – DILM12	DILM17 – DILM32	DILM40 – DILM50
0.1 – 0.16	ZE-0,16	ZB12-0,16	ZB32-0,16	–
0.16 – 0.24	ZE-0,24	ZB12-0,24	ZB32-0,24	–
0.24 – 0.4	ZE-0,4	ZB12-0,4	ZB32-0,4	–
0.4 – 0.6	ZE-0,6	ZB12-0,6	ZB32-0,6	–
0.6 – 1	ZE-1,0	ZB12-1,0	ZB32-1,0	–
1 – 1.6	ZE-1,6	ZB12-1,6	ZB32-1,6	–
1.6 – 2.4	ZE-2,4	ZB12-2,4	ZB32-2,4	–
2.4 – 4	ZE-4	ZB12-4	ZB32-4	–
4 – 6	ZE-6	ZB12-6	ZB32-6	–
6 – 9	ZE-9	–	–	–
6 – 10	–	ZB12-10	ZB32-10	ZB65-10
9 – 12	–	ZB12-12	–	–
10 – 16	–	ZB12-16	ZB32-16	ZB65-16
16 – 24	–	–	ZB32-24	ZB65-24
24 – 32	–	–	ZB32-32	–
24 – 40	–	–	–	ZB65-40
40 – 57	–	–	–	ZB65-57
57 – 65	–	–	–	ZB65-65

For use with

Part number

**Free-standing overload relay adaptor**

Base-mounting bracket



ZB32

ZB32-XEZ

ZB65

ZB65-XEZ

Moeller SK0211-1149GB



Moeller's comprehensive range of enclosed starters has been designed to meet the specific needs of the UK market. To satisfy the requirements of most operating environments, they are available in a variety of enclosure sizes and materials: insulated, sheet steel and stainless steel (ideal for the food industry).

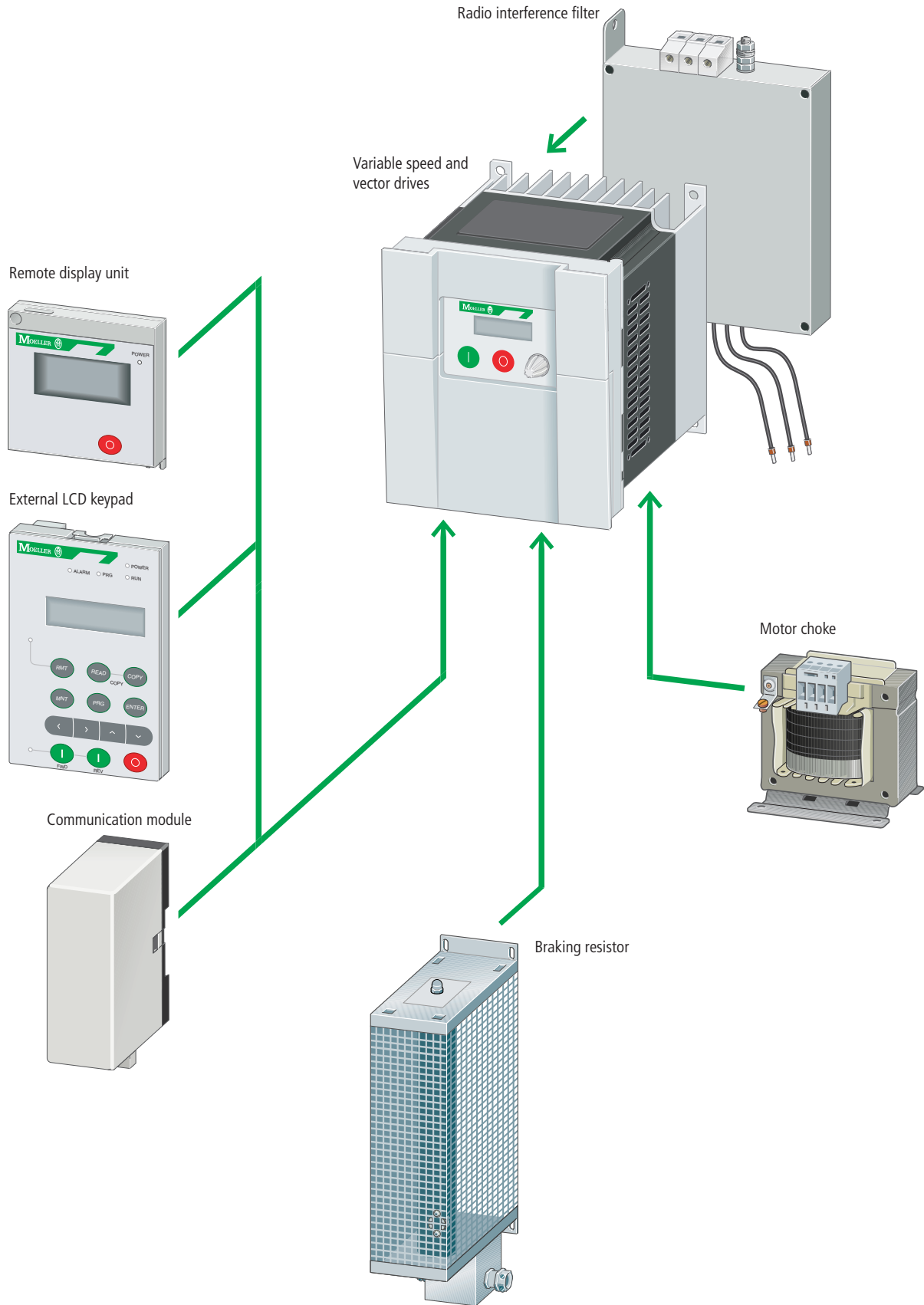
#### Features and benefits

- IP65 degree of protection for insulated and stainless steel enclosed starters (IP55 for sheet steel enclosed starters), making them suitable for almost every industrial environment.
- Capable of a high number of operations, the range offers proven reliability plus a long operating life.
- DOL, reversing DOL and Star Delta versions available as standard
- All starters are constructed from standard components making them very easy to maintain.

Power rating kW, AC-3, 400 V	Overload type	Insulated enclosures Part number	Sheet steel enclosures Part number	Stainless steel enclosures Part number
<b>Compact DOL</b>				
4	ZE...	D4E/I2/3P+N(230V50HZ)		
	ZE...	D4E/I2/3P+N(400V50HZ)		
	ZE...	D4E/I2/1P+N(230V50HZ)		
<b>DOL with isolator</b>				
4	ZB12...	XDP4/I(230V50HZ)	XDP4/ST(230V50HZ)	XDP4/SS(230V50HZ)
	ZB12...	XDP4/I(400V50HZ)	XDP4/ST(400V50HZ)	XDP4/SS(400V50HZ)
5.5	ZB12...	XDP5,5/I(230V50HZ)	XDP5,5/ST(230V50HZ)	XDP5,5/SS(230V50HZ)
	ZB12...	XDP5,5/I(400V50HZ)	XDP5,5/ST(400V50HZ)	XDP5,5/SS(400V50HZ)
7.5	ZB12...	XDP7,5/I(230V50HZ)	XDP7,5/ST(230V50HZ)	XDP7,5/SS(230V50HZ)
	ZB12...	XDP7,5/I(400V50HZ)	XDP7,5/ST(400V50HZ)	XDP7,5/SS(400V50HZ)
11	ZB32...	XDP11/I(230V50HZ)	XDP11/ST(230V50HZ)	XDP11/SS(230V50HZ)
	ZB32...	XDP11/I(400V50HZ)	XDP11/ST(400V50HZ)	XDP11/SS(400V50HZ)
<b>DOL reversing with isolator</b>				
4	ZB12...	XDRP4/I(230V50HZ)	XDRP4/ST(230V50HZ)	XDRP4/SS(230V50HZ)
	ZB12...	XDRP4/I(400V50HZ)	XDRP4/ST(400V50HZ)	XDRP4/SS(400V50HZ)
5.5	ZB12...	XDRP5,5/I(230V50HZ)	XDRP5,5/ST(230V50HZ)	XDRP5,5/SS(230V50HZ)
	ZB12...	XDRP5,5/I(400V50HZ)	XDRP5,5/ST(400V50HZ)	XDRP5,5/SS(400V50HZ)
<b>Star-delta with isolator</b>				
5.5	ZB12...	XSDP5,5/I(230V50HZ)	XSDP5,5/ST(230V50HZ)	XSDP5,5/SS(230V50HZ)
	ZB12...	XSDP5,5/I(400V50HZ)	XSDP5,5/ST(400V50HZ)	XSDP5,5/SS(400V50HZ)
7.5	ZB12...	XSDP7,5/I(230V50HZ)	XSDP7,5/ST(230V50HZ)	XSDP7,5/SS(230V50HZ)
	ZB12...	XSDP7,5/I(400V50HZ)	XSDP7,5/ST(400V50HZ)	XSDP7,5/SS(400V50HZ)
11	ZB12...	XSDP11/I(230V50HZ)	XSDP11/ST(230V50HZ)	XSDP11/SS(230V50HZ)
	ZB12...	XSDP11/I(400V50HZ)	XSDP11/ST(400V50HZ)	XSDP11/SS(400V50HZ)
15	ZB32...	XSDP15/I(230V50HZ)	XSDP15/ST(230V50HZ)	XSDP15/SS(230V50HZ)
	ZB32...	XSDP15/I(400V50HZ)	XSDP15/ST(400V50HZ)	XSDP15/SS(400V50HZ)



Moeller SK0211-1149GB



Variable speed drives  
DF5, DF6







With their innovative modular technology the DF5/6 range combines performance, versatility and economy.

These drives offer the latest in functional technology such as automatic voltage monitoring, integral PID control and direct thermistor input, together with the simplicity of an integrated control potentiometer and start/stop buttons. They provide the ideal solution for a wide range of applications, from pumps and fans to conveying and packaging.


The drives are supplied with installation diagrams and a CD containing a comprehensive technical manual and Windows based configuration software.

#### Features and benefits

- Standard items such as conveyor belts, pumps or agitators can be connected and controlled without parameters having to be set.
- Uniform terminal designations and accessories across the range reduce engineering requirements.
- Windows based PC software simplifies commissioning.

	Rated power of motor kW	Part number
<b>Variable speed drives DF5, DF6</b>		
Single-phase input AC drives, 230 V		
	0.18	DF5-322-018
	0.37	DF5-322-037
	0.55	DF5-322-055
	0.75	DF5-322-075
	1.1	DF5-322-1K1
	1.5	DF5-322-1K5
	2.2	DF5-322-2K2
Three-phase AC drives, 400 V		
	0.37	DF5-340-037
	0.75	DF5-340-075
	1.5	DF5-340-1K5
	2.2	DF5-340-2K2
	3	DF5-340-3K0
	4	DF5-340-4K0
	5.5	DF5-340-5K5
	7.5	DF5-340-7K5
	11	DF6-340-11K
	15	DF6-340-15K
	18.5	DF6-340-18K5
22	DF6-340-22K	

Moeller SK0211-1149GB

	For use with AC drives		Part number
	DF5	DF6	
	Rated power of motor kW	Rated power of motor kW	
<b>EMC filters to EN 5081-1, footprint-fitting</b>			
<b>Single-phase</b>			
	0.18	0.37	DE5-LZ1-007-V2
	0.55	0.75	DE5-LZ1-012-V2
	1.1	1.5/2.2	DE5-LZ1-024-V2
<b>Three-phase</b>			
	0.37	0.75/1.5	DE5-LZ3-007-V4
	2.2	3/4	DE5-LZ3-011-V4
	5.5	7.5	DE5-LZ3-020-V4
	11	15	DE6-LZ3-032-V4
	18.5	22	DE6-LZ3-064-V4
<b>Accessories</b>			
PROFIBUS interface			DE5-NET-DP
Remote display unit			DE5-KEY-R03
1 metre cable for display unit			DE5-CBL-1M0-ICL
2 metre cable for PC connection			DEX-CBL-2M0-PC





The DS4 range comprises semiconductor contactors for high switching frequencies and soft starters for applications with normal starting frequencies. Combining compactness with versatility, the range offers condition signalling, a wide variety of voltage inputs in one unit as well as compliance with the latest international safety standards.

The single phase versions are designed for resistive loads such as heating and lighting, whilst the three phase versions are suitable for both resistive and inductive loads, including motors.



#### Features and benefits

Semiconductor contactors offer

- silent switching – ideal for office environments.
- wear-free switching, suitable for high frequency switching in temperature critical processes, packaging machines and other high speed applications.




Soft starters

- reduce the starting current, so minimising power costs and avoiding torque shocks in motors.
- can reduce mechanical stress on shafts, bearings and belts, so extending service intervals and reducing breakages.

	AC-51 current rating A	AC-3 motor rating at 400 V kW	Part number
<b>Single-phase semiconductor contactors</b>			
	10		DS4-140-010-H
	20		DS4-140-020-H
	30		DS4-140-030-H
	50		DS4-140-050-H
<b>Three-phase semiconductor contactors and soft starters</b>			
<b>Without bypass</b>			
	11	2.2	DS4-340-2K2-M
	17	4	DS4-340-4K0-M
	22	5.5	DS4-340-5K5-M
	29	7.5	DS4-340-7K5-M
	41	11	DS4-340-11K-M



Moeller SK0211-1149GB

	AC-53 current rating A	AC-3 motor rating at 400 V kW	Part number
<b>Three-phase semiconductor contactors and soft starters</b>			
Reversing, without bypass			
	6	2.2	DS4-340-2K2-MR
	9	4	DS4-340-4K0-MR
	12	5.5	DS4-340-5K5-MR
	16	7.5	DS4-340-7K5-MR
	23	11	DS4-340-11K-MR
<b>Three-phase soft starters</b>			
With bypass			
	16	7.5	DS4-340-7K5-MX
	23	11	DS4-340-11K-MX
	31	15	DS4-340-15K-MX
Reversing, with bypass			
	16	7.5	DS4-340-7K5-MXR
	23	11	DS4-340-11K-MXR
	31	15	DS4-340-15K-MXR





Suitable for housing a wide range of protection and control devices, the robust CI-K enclosures are rated to IP65 degree of protection. Metric cable entry knockouts in the top, bottom and rear of the enclosure make installation easy. A choice of the unique push-through membrane or hard knockout versions provide added flexibility.

The units are ideal for housing Moeller products including: T rotary switches, P switch-disconnectors, RMQ-Titan command and signalling devices, xStart contactors, FAZ miniature circuit-breakers, easy control relays, ETR4 timing relays, and PKZ motor-protective circuit-breakers. They also make excellent terminal boxes and can be used to house pneumatic or hydraulic components.

#### Features and benefits

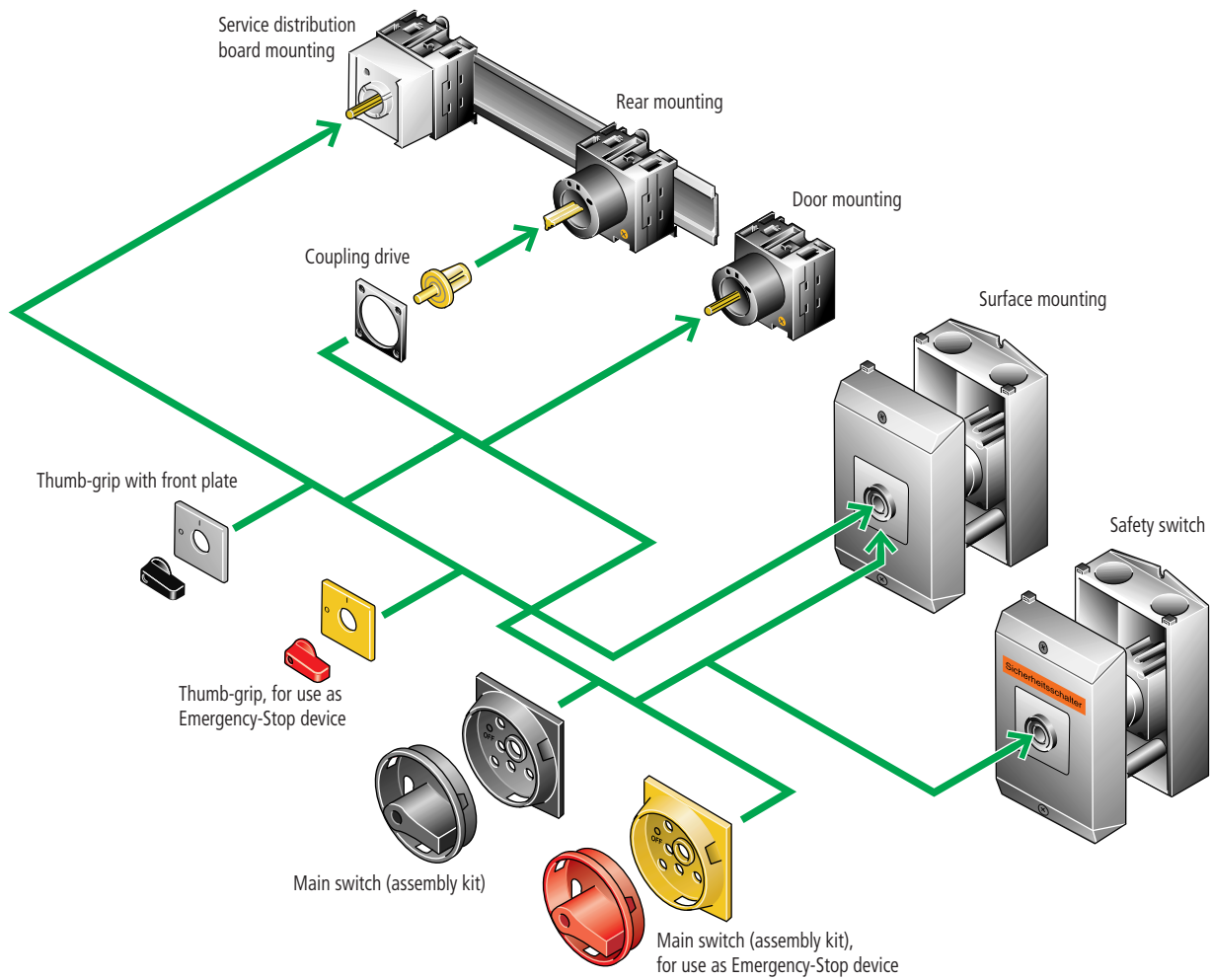
- Fully insulated with no need to earth, resistant to flaking or rusting which is particularly important for the food industry.
- Choice of mounting rails and plates, with fixing holes for vertical or horizontal positioning, simplifies mounting.
- Captive screws, fixing centres printed on the base, rubber feet to compensate for wall unevenness and optional external fixing brackets all simplify installation.
- Shallow base depth eases connection to devices mounted in the enclosure.
- Eyelets on the base and cover mean tie wraps can be used as a simple hinge when accessing the contents of the enclosure.

	Width mm	Height mm	Depth mm	Metric cable entry	Part number
<b>Insulated enclosures, IP65</b>					
<b>Fitted with DIN mounting rail</b>					
	80	120	95	Push-through membrane	CI-K1-95-TS
	100	160	100	Push-through membrane	CI-K2-100-TS
				Hard knockouts	CI-K2H-100-TS
	145	200	125	Push-through membrane	CI-K2-145-TS
				Hard knockouts	CI-K2H-145-TS
	160	240	125	Hard knockouts	CI-K3-125-TS
				Hard knockouts	CI-K3-160-TS
	200	280	125	Hard knockouts	CI-K4-125-TS
Hard knockouts				CI-K4-160-TS	
280	320	125	Hard knockouts	CI-K5-125-TS	
			Hard knockouts	CI-K5-160-TS	
<b>Fitted with metal mounting plate</b>					
	100	160	100	Push-through membrane	CI-K2-100-M
				Hard knockouts	CI-K2H-100-M
	145	200	125	Push-through membrane	CI-K2-145-M
				Hard knockouts	CI-K2H-145-M
	160	240	125	Hard knockouts	CI-K3-125-M
				Hard knockouts	CI-K3-160-M
	200	280	125	Hard knockouts	CI-K4-125-M
				Hard knockouts	CI-K4-160-M
	280	320	125	Hard knockouts	CI-K5-125-M
				Hard knockouts	CI-K5-160-M

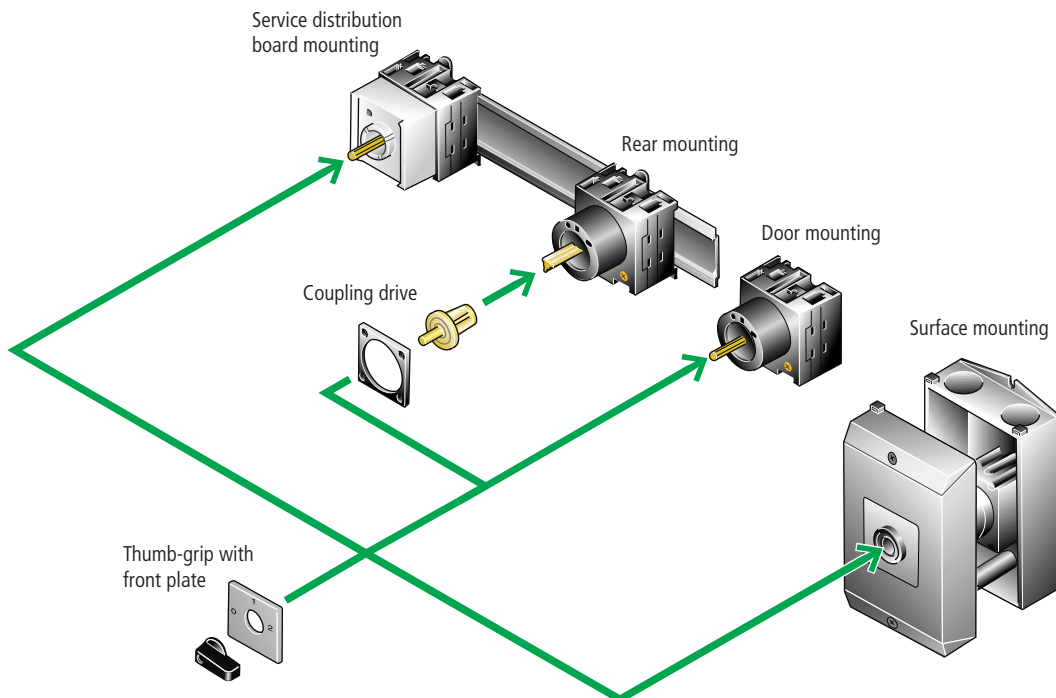


Moeller SK0211-1149GB

Isolators: T0, T3, T5B, T5



Control switches: T0, T3, T5B, T5



Switch-disconnectors, rotary switches  
P, T





The reliable and robust T&P isolators are quick and easy to install and, together with simple selection, offer savings in both time and cost. Current ratings are from 20 A to 100 A with power ratings from 4 kW to 37 kW. They are suitable for main, maintenance and Emergency-Stop switches, being available in their own enclosures or for mounting in control cabinets, either on the door or rear of the panel with cover interlock.

The T0 range of control switches is suitable for many different switching and control functions, such as ON/OFF, Hand/Auto and changeover. Manufactured in the UK, this highly flexible system satisfies a wide range of applications, and can be customised to suit specific needs.

#### Features and benefits

##### Isolators

- All switches to IEC/EN 60204 & IEC/EN 60947.
- Padlockable in the OFF position (using up to three padlocks) for safe, secure maintenance.
- Available in insulated, sheet steel or stainless steel enclosures to meet all applications.
- With a high protection standard of IP65, they can be used in most environments including the food industry.

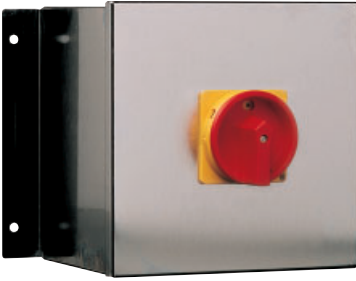




##### Control switches

- Sharing the same design criteria as the RMQ-Titan range, T0 switches can be combined with this system to offer even greater functionality.
- A broad range of mounting and fitting options speeds assembly and meets every operational requirement.

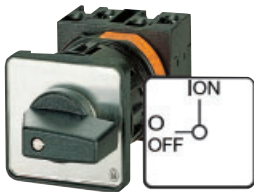
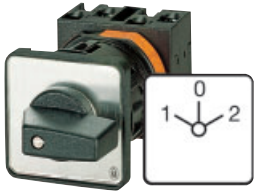
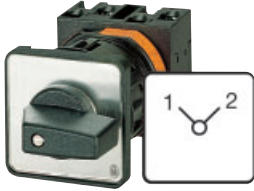
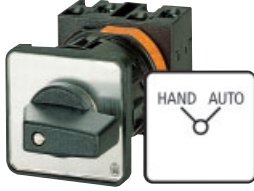
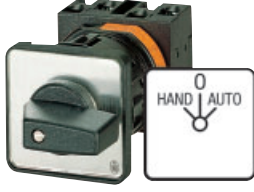
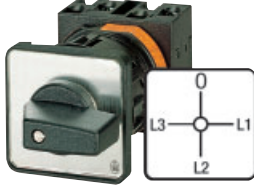
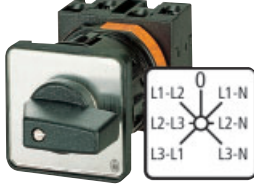
Switch application ratings				Switch size							
				T0	T3	T5B	T5	P1		P3	
Three-phase motor ratings	AC-23	380 – 440 V	kW	6.5	13	22	30	13	15	37	50
	AC-3	380 – 440 V	kW	4	12	22	30	7.5	13	30	37
Rated operational current	AC-21	380 – 440 V 3~	A	20	32	63	100	25	32	63	100
	AC-15	220 – 240 V	A	6	10	16	16	–	–	–	–
Rated uninterrupted current ( $I_u$ )		380 – 415 V	A	4	6	6	6	–	–	–	–
				20	32	63	100	25	32	63	100

	No. of poles	Rated uninterrupted current ( $I_u$ ) A	Part number
<b>Isolators, IP65</b>			
<b>Insulated, enclosed isolators</b>			
With metric knockouts, padlockable handle			
	1	20	T0-1-8200/I1/SVB
		32	T3-1-8200/I2/SVB
		63	T5B-1-8200/I4/SVB
		100	T5-1-8200/I5/SVB
	2	20	T0-1-102/I1/SVB
		32	T3-1-102/I2/SVB
		63	T5B-1-102/I4/SVB
		100	T5-1-102/I5/SVB
	3	20	T0-2-1/I1/SVB
		25	P1-25/I2H/SVB
		32	P1-32/I2H/SVB
		63	P3-63/I4/SVB
6	20	P3-100/I5/SVB	
	20	T0-3-8342/I1/SVB	
	32	T3-3-8342/I2/SVB	
	63	T5B-3-8342/I4/SVB	
		100	T5-3-8342/I5/SVB

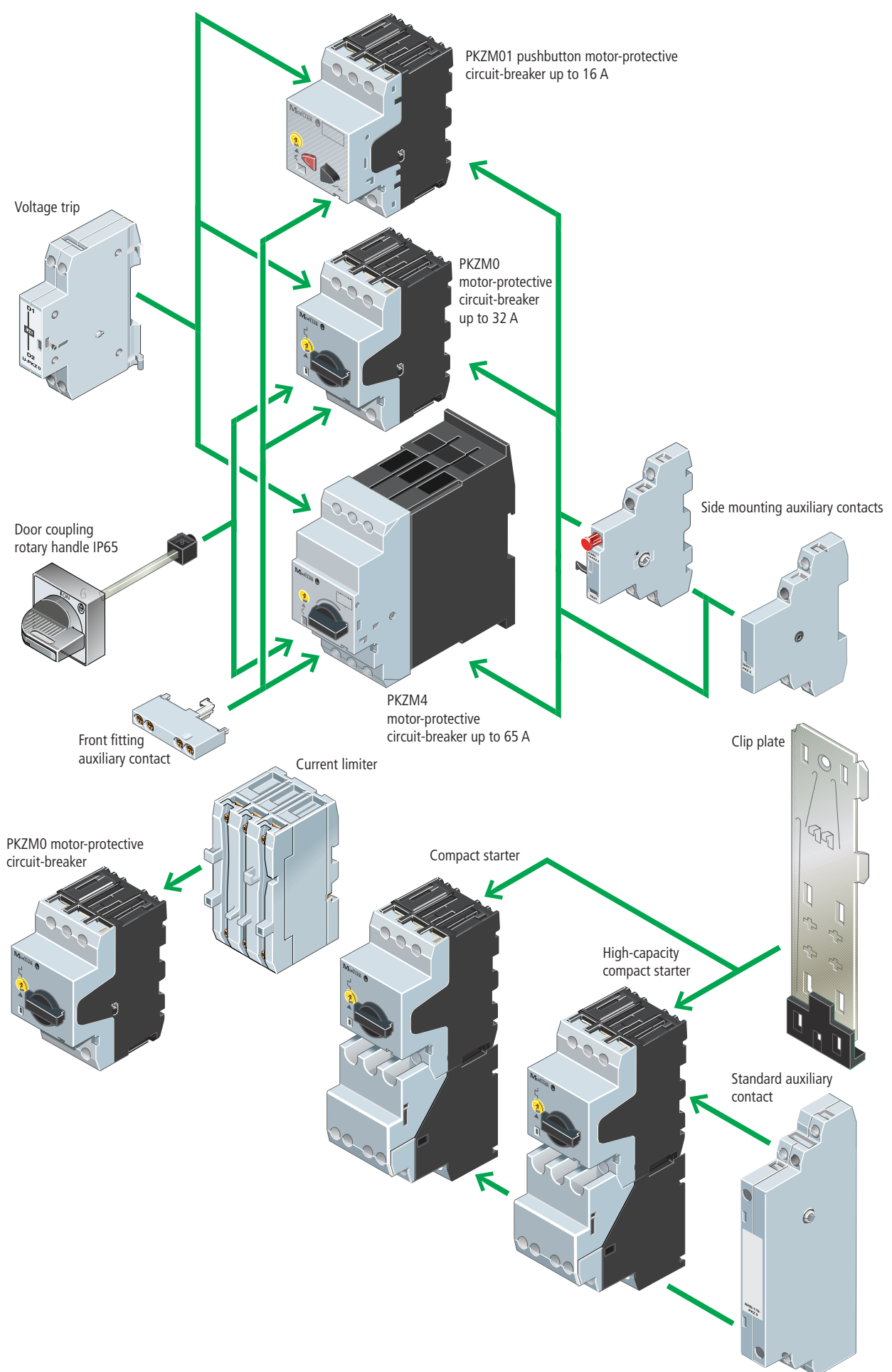
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	No. of poles	Rated uninterrupted current ( $I_U$ ) A	Part number
<b>Stainless steel, enclosed isolators</b>			
	3	20	T0-2-1/SS1/SVB
		25	P1-25/SS1/SVB
		32	P1-32/SS1/SVB
		63	P3-63/SS2/SVB
		100	P3-100/SS2/SVB
<b>Sheet steel, enclosed isolators</b>			
	3	20	T0-2-1/ST1/SVB
		25	P1-25/ST1/SVB
		32	P1-32/ST1/SVB
		63	P3-63/ST2/SVB
		85	P3-100/ST2/SVB
<b>Rear mount, door interlock, padlockable handle</b>			
	2	20	T0-1-102/V/SVB
		32	T3-1-102/V/SVB
		63	T5B-1-102/V/SVB
		100	T5-1-102/V/SVB
	3	20	T0-2-1/V/SVB
25		P1-25/V/SVB	
32		P1-32/V/SVB	
63		P3-63/V/SVB	
100		P3-100/V/SVB	
<b>Door mount, padlockable handle</b>			
	2	20	T0-1-102/EA/SVB
		32	T3-1-102/EA/SVB
		63	T5B-1-102/EA/SVB
		100	T5-1-102/EA/SVB
3	20	T0-2-1/EA/SVB	
	25	P1-25/EA/SVB	
	32	P1-32/EA/SVB	
	63	P3-63/EA/SVB	
	100	P3-100/EA/SVB	
<b>For use with</b>			<b>Part number</b>
<b>Accessories</b>			
<b>Switched neutral poles</b>			
	Door mounting P1 isolators		N-P1E
	Rear mounting and enclosed P1 isolators		N-P1Z
	Door mounting P3 isolators		N-P3E
	Rear mounting and enclosed P3 isolators		N-P3Z
<b>Auxiliary contacts</b>			
1 N/O 1 N/C, for door mounting P1/3 isolators		HI11-P1/P3E	
1 N/O 1 N/C, for rear mounting and enclosed P1/3 isolators		HI11-P1/P3Z	
<b>Plug-in shaft extensions</b>			
T0 and P1 switches		ZAV-T0	
P3 switches		ZAV-P3	
<b>Plug-in interlock extensions</b>			
T0 and P1 switches		ZVV-T0	
P3 switches		ZVV-P3	



	No. of poles	Description	Part number
<b>Control switches, door mounting, IP65</b>			
20 A rated uninterrupted current ( $I_{cu}$ ) With black thumb grip and front plate			
On-Off 	1	90° switching	T0-1-8200/E
	2		T0-1-102/E
	3		T0-2-1/E
Changeover with Off 	1	60° switching with centre Off	T0-1-8210/E
	2		T0-2-8211/E
	3		T0-3-8212/E
Changeover without Off 	1	60° switching	T0-1-8220/E
	2		T0-2-8221/E
	3	90° switching	T0-3-8222/E
Hand-Auto 	1	90° switching	T0-1-15451/E
	2		T0-2-15452/E
	3		T0-3-15453/E
Hand-Off-Auto 	1	45° switching with centre Off	T0-1-15431/E
	2		T0-2-15432/E
	3		T0-3-15433/E
Ammeter switch 		90° switching with complete rotation in both directions	T0-3-8048/E
Voltmeter switch 		3 x phase-to-phase, 3 x phase-to-N, with Off position	T0-3-8007/E

Moeller SK0211-1149GB



Motor-protective circuit-breakers  
PKZM01, PKZM0, PKZM4





Part of the xStart motor protection range (see page 29), PKZ has become a global brand for motor-protective circuit-breakers providing isolation, short-circuit protection and thermal protection in one single component.

The range includes both rotary and pushbutton actuated motor-protective circuit-breakers. The rotary handle gives a clear and immediate indication of ON/OFF positions even from a distance, complying as a switch-disconnector in accordance with IEC 947-2/3 and IEC 204-1. The lockable rotary handle and door coupling handle options enable the motor-protective circuit-breakers to be locked in the OFF position for extra safety.

The pushbutton actuation is suited to small machines and applications where pressing or even hitting a button is preferred. A mushroom head is available for installations requiring an Emergency-Stop function.

#### Features and benefits





- Single range of clip-on accessories across all types makes selection easy and reduces fitting times.
- With just two rotary handle variants engineering is simplified.
- Compact width saves valuable space in the control panel.
- Insulated enclosures enable use in harsh environments.

Range overview	PKZM01 (Pushbutton type)		PKZM0 (Rotary handle type, for use with toolless plug connector)		PKZM4 (Rotary handle type)	
Setting range of overload trip $I_r$	0.1 – 16 A		0.1 – 32 A		10 – 65 A	
Motor data 400 V	Motor rating $P$ kW	Rated operational current $I_e$ A	Motor rating $P$ kW	Rated operational current $I_e$ A	Motor rating $P$ kW	Rated operational current $I_e$ A
	0.06	0.21	0.06	0.21		
	0.09	0.31	0.09	0.31		
	0.12	0.41	0.12	0.41		
	0.18	0.6	0.18	0.6		
	0.25	0.8	0.25	0.8		
	0.37	1.1	0.37	1.1		
	0.55	1.5	0.55	1.5		
	0.75	1.9	0.75	1.9		
	1.1	2.6	1.1	2.6		
	1.5	3.6	1.5	3.6		
	2.2	5	2.2	5		
	3	6.6	3	6.6		
	4	8.5	4	8.5		
	5.5	11.3	5.5	11.3	5.5	11.3
7.5	15.2	7.5	15.2	7.5	15.2	
		9	18.2	9	18.2	
		11	21.7	11	21.7	
		12.5	25	12.5	25	
		15	29.3	15	29.3	
				18.5	36	
				20	40	
				22	41	
				30	55	
				34	65	











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	Overload range A	Description	Part number
<b>Pushbutton type PKZM01</b>			
	0.1 – 0.16		PKZM01-0,16
	0.16 – 0.25		PKZM01-0,25
	0.25 – 0.4		PKZM01-0,4
	0.4 – 0.63		PKZM01-0,63
	0.63 – 1		PKZM01-1
	1 – 1.6		PKZM01-1,6
	1.6 – 2.5		PKZM01-2,5
	2.5 – 4		PKZM01-4
	4 – 6.3		PKZM01-6,3
	6.3 – 10		PKZM01-10
8 – 12		PKZM01-12	
10 – 16		PKZM01-16	
<b>Accessories for PKZM01 (also see page 50)</b>			
<b>Insulated enclosures</b>			
<b>Surface mounting</b>			
		IP40	CI-PKZ01
		IP65	CI-PKZ01-G
		IP65 padlockable in Off position	CI-PKZ01-SVB
		IP65 with stay-put Emergency-Stop	CI-PKZ01-PVT
		IP65 with stay-put Emergency-Stop (key release)	CI-PKZ01-PVS
<b>Flush mounting</b>			
		IP40	E-PKZ01
		IP55	E-PKZ01-G
		IP55 padlockable in Off position	E-PKZ01-SVB
		IP55 with stay-put Emergency-Stop	E-PKZ01-PVT
		IP55 with stay-put Emergency-Stop (key release)	E-PKZ01-PVS
<b>Rotary handle type PKZM0</b>			
	0.1 – 0.16		PKZM0-0,16
	0.16 – 0.25		PKZM0-0,25
	0.25 – 0.4		PKZM0-0,4
	0.4 – 0.63		PKZM0-0,63
	0.63 – 1		PKZM0-1
	1 – 1.6		PKZM0-1,6
	1.6 – 2.5		PKZM0-2,5
	2.5 – 4		PKZM0-4
	4 – 6.3		PKZM0-6,3
	6.3 – 10		PKZM0-10
	8 – 12		PKZM0-12
	10 – 16		PKZM0-16
	16 – 20		PKZM0-20
	20 – 25		PKZM0-25
25 – 32		PKZM0-32	





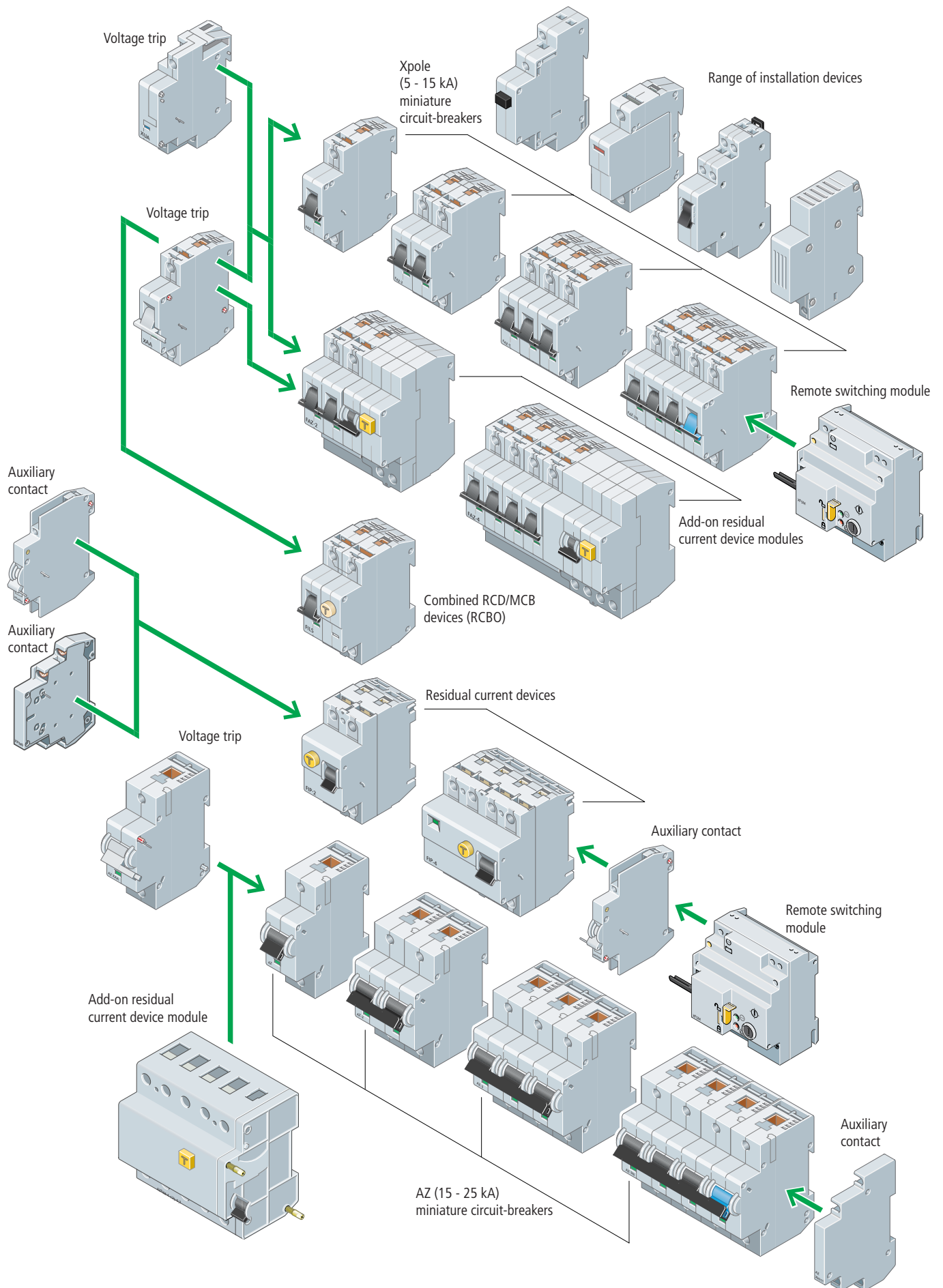
	Overload range A	Description	Part number
<b>Rotary handle type PKZM4</b>			
	10 – 16		PKZM4-16
	16 – 25		PKZM4-25
	25 – 32		PKZM4-32
	32 – 40		PKZM4-40
	40 – 50		PKZM4-50
	50 – 58		PKZM4-58
	55 – 65		PKZM4-63
<b>Accessories for PKZM01, PKZM0 and PKZM4</b>			
<b>Auxiliary contacts</b>			
		1 N/O 1 N/C , side mounting	NHI11-PKZ0
		1 N/O 2 N/C , side mounting	NHI12-PKZ0
		2 N/O 1 N/C , side mounting	NHI21-PKZ0
		1 N/O 1 N/C, front fitting	NHI-E-11-PKZ0
		1 N/O, front fitting	NHI-E-10-PKZ0
<b>Shunt trips</b>			
		230 V AC	A-PKZ0(230V 50HZ)
		24 V DC	A-PKZ0(24VDC)
<b>Undervoltage trips</b>			
		110 V AC	U-PKZ0(110V50HZ)
		230 V AC	U-PKZ0(230V50HZ)
		240 V AC	U-PKZ0(240V50HZ)
		24 V AC	U-PKZ0(24V50HZ)
		400 V AC	U-PKZ0(400V50HZ)
<b>Accessories for PKZM0 and PKZM4</b>			
<b>Early-make auxiliary contacts</b>			
			VHI20-PKZ0
<b>Trip-indicating auxiliary contacts</b>			
		2 N/C	AGM2-01-PKZ0
		2 N/O	AGM2-10-PKZ0

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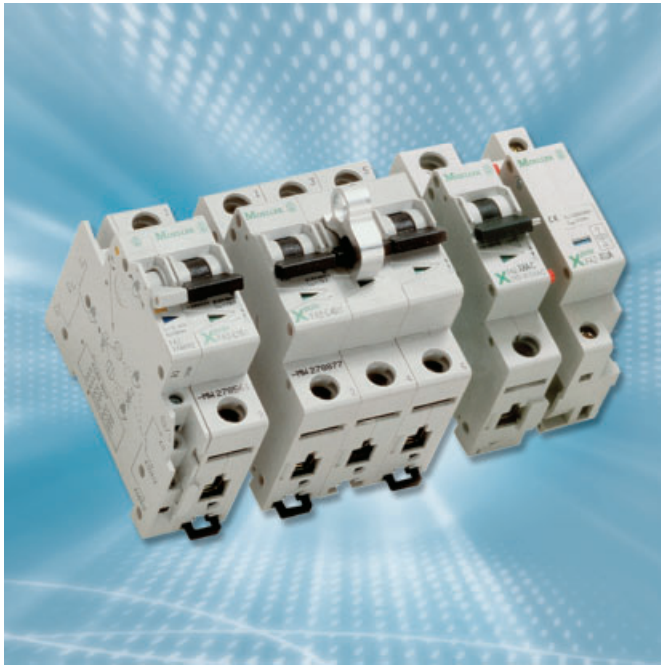
	Description	Part number
<b>Handles</b>		
	Door coupling rotary handle (red/yellow)	RH-PKZ0
	Door coupling rotary handle (black)	H-PKZ0
	Direct mounting, padlockable rotary handle	AK-PKZ0
<b>Accessories for PKZM0 only</b>		
Insulated enclosures Surface mounting		
	IP40 for vertical mounting	CI-PKZ0-M
	IP55 with black/grey handle	CI-PKZ0-GM
	IP55 with red/yellow handle	CI-PKZ0-GRM
<b>System for direct connection between PKZM0 and DILM contactors</b>		
DOL toolless plug connection		
	PKZM0 + DILM7/9/12	PKZM0-XDM12
DOL starter connection kit		
	PKZM0 + DILM17/25/32	PKZM0-XDM32
	Reversing toolless plug connection	PKZM0-XRM12
Reversing starter connection kit		
PKZM0 + DILM17/25/32		PKZM0-XRM32
Current limiter		
	For increasing switching capacity to 150 kA	CL-PKZ0



Moeller SK0211-1149GB



Miniature circuit-breakers



The comprehensive range of Xpole miniature circuit-breakers includes 10 and 15 kA switching capacity in single-pole and multi-pole versions. The range offers the following tripping characteristics:

- Type B – for domestic/commercial installations without power surges e.g. filament lamps and wall sockets
- Type C – for commercial/light industrial installations with switching surges such as fluorescent lighting or small motors
- Type D – for abnormally high inrush currents e.g. motors with heavy starting duty
- Type K – to prevent nuisance tripping during starting of three phase loads e.g. motors or transformers, and provide closer protection than B, C or D types
- Type S – for the protection of control circuits with high inrush currents and transformers

In addition, the range includes components for residual current protection and modular installation devices for remote switching, timing and signalling.

#### Features and benefits

- FAZ range offers worldwide approvals and shipping classification.
- DIN rail clip mounting, and snap-fitting accessories reduce installation time and simplify fitting and removal of components.
- Single design concept improves panel appearance.
- Busbar clamps and high-capacity box terminals provide increased connection options.



Rated current $I_n$ A	Single pole Part number	Double pole Part number	Triple pole Part number
<b>15 kA, Type B</b>			
$3 - 5 \times I_n$ response current of short circuit trip			
4	FAZ-B4/1-HS	FAZ-B4/2-HS	
6	FAZ-B6/1	FAZ-B6/2	FAZ-B6/3
10	FAZ-B10/1	FAZ-B10/2	FAZ-B10/3
12	FAZ-B12/1	FAZ-B12/2	FAZ-B12/3
16	FAZ-B16/1	FAZ-B16/2	FAZ-B16/3
20	FAZ-B20/1	FAZ-B20/2	FAZ-B20/3
25	FAZ-B25/1	FAZ-B25/2	FAZ-B25/3
32	FAZ-B32/1	FAZ-B32/2	FAZ-B32/3
40	FAZ-B40/1	FAZ-B40/2	FAZ-B40/3
50	FAZ-B50/1	FAZ-B50/2	FAZ-B50/3
63	FAZ-B63/1	FAZ-B63/2	FAZ-B63/3

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Rated current $I_n$ A	Single pole Part number	Double pole Part number	Triple pole Part number
<b>15 kA, Type C</b>			
5 – 10 × $I_n$ response current of short circuit trip			
0.5	FAZ-C0,5/1	FAZ-C0,5/2	FAZ-C0,5/3
1	FAZ-C1/1	FAZ-C1/2	FAZ-C1/3
2	FAZ-C2/1	FAZ-C2/2	FAZ-C2/3
4	FAZ-C4/1	FAZ-C4/2	FAZ-C4/3
6	FAZ-C6/1	FAZ-C6/2	FAZ-C6/3
10	FAZ-C10/1	FAZ-C10/2	FAZ-C10/3
16	FAZ-C16/1	FAZ-C16/2	FAZ-C16/3
20	FAZ-C20/1	FAZ-C20/2	FAZ-C20/3
25	FAZ-C25/1	FAZ-C25/2	FAZ-C25/3
32	FAZ-C32/1	FAZ-C32/2	FAZ-C32/3
40	FAZ-C40/1	FAZ-C40/2	FAZ-C40/3
50	FAZ-C50/1	FAZ-C50/2	FAZ-C50/3
63	FAZ-C63/1	FAZ-C63/2	FAZ-C63/3
<b>15 kA, Type D</b>			
10 – 20 × $I_n$ response current of short circuit trip			
0.5	FAZ-D0,5/1	FAZ-D0,5/2	FAZ-D0,5/3
1	FAZ-D1/1	FAZ-D1/2	FAZ-D1/3
2	FAZ-D2/1	FAZ-D2/2	FAZ-D2/3
4	FAZ-D4/1	FAZ-D4/2	FAZ-D4/3
6	FAZ-D6/1	FAZ-D6/2	FAZ-D6/3
10	FAZ-D10/1	FAZ-D10/2	FAZ-D10/3
16	FAZ-D16/1	FAZ-D16/2	FAZ-D16/3
20	FAZ-D20/1	FAZ-D20/2	FAZ-D20/3
25	FAZ-D25/1	FAZ-D25/2	FAZ-D25/3
32	FAZ-D32/1	FAZ-D32/2	FAZ-D32/3
40	FAZ-D40/1	FAZ-D40/2	FAZ-D40/3
<b>15 kA, Type K</b>			
8 – 12 × $I_n$ response current of short circuit trip			
0.5	FAZ-K0,5/1	FAZ-K0,5/2	FAZ-K0,5/3
1	FAZ-K1/1	FAZ-K1/2	FAZ-K1/3
2	FAZ-K2/1	FAZ-K2/2	FAZ-K2/3
4	FAZ-K4/1	FAZ-K4/2	FAZ-K4/3
6	FAZ-K6/1	FAZ-K6/2	FAZ-K6/3
10	FAZ-K10/1	FAZ-K10/2	FAZ-K10/3
16	FAZ-K16/1	FAZ-K16/2	FAZ-K16/3
20	FAZ-K20/1	FAZ-K20/2	FAZ-K20/3
25	FAZ-K25/1	FAZ-K25/2	FAZ-K25/3
32	FAZ-K32/1	FAZ-K32/2	FAZ-K32/3
40	FAZ-K40/1	FAZ-K40/2	FAZ-K40/3
50	FAZ-K50/1	FAZ-K50/2	FAZ-K50/3
63	FAZ-K63/1	FAZ-K63/2	FAZ-K63/3
<b>10 kA, Type S</b>			
13 – 17 × $I_n$ response current of short circuit trip			
1	FAZ-S1/1	FAZ-S1/2	
2	FAZ-S2/1	FAZ-S2/2	
3	FAZ-S3/1	FAZ-S3/2	
4	FAZ-S4/1	FAZ-S4/2	
6	FAZ-S6/1	FAZ-S6/2	
10	FAZ-S10/1	FAZ-S10/2	
16	FAZ-S16/1	FAZ-S16/2	
20	FAZ-S20/1	FAZ-S20/2	
25	FAZ-S25/1	FAZ-S25/2	
32	FAZ-S32/1	FAZ-S32/2	
40	FAZ-S40/1	FAZ-S40/2	






Rated current $I_n$ A	Single pole Part number	Double pole Part number	Triple pole Part number
<b>10 kA, Type B</b>			
3 – 5 × $I_n$ response current of short circuit trip			
6	PLSM-B6	PLSM-B6/2	PLSM-B6/3
10	PLSM-B10	PLSM-B10/2	PLSM-B10/3
16	PLSM-B16	PLSM-B16/2	PLSM-B16/3
20	PLSM-B20	PLSM-B20/2	PLSM-B20/3
25	PLSM-B25	PLSM-B25/2	PLSM-B25/3
32	PLSM-B32	PLSM-B32/2	PLSM-B32/3
40	PLSM-B40	PLSM-B40/2	PLSM-B40/3
50	PLSM-B50	PLSM-B50/2	PLSM-B50/3
63	PLSM-B63	PLSM-B63/2	PLSM-B63/3
<b>10 kA, Type C</b>			
5 – 10 × $I_n$ response current of short circuit trip			
6	PLSM-C6	PLSM-C6/2	PLSM-C6/3
10	PLSM-C10	PLSM-C10/2	PLSM-C10/3
16	PLSM-C16	PLSM-C16/2	PLSM-C16/3
20	PLSM-C20	PLSM-C20/2	PLSM-C20/3
25	PLSM-C25	PLSM-C25/2	PLSM-C25/3
32	PLSM-C32	PLSM-C32/2	PLSM-C32/3
40	PLSM-C40	PLSM-C40/2	PLSM-C40/3
50	PLSM-C50	PLSM-C50/2	PLSM-C50/3
63	PLSM-C63	PLSM-C63/2	PLSM-C63/3
<b>10 kA, Type D</b>			
10 – 20 × $I_n$ response current of short circuit trip			
6	PLSM-D6	PLSM-D6/2	PLSM-D6/3
10	PLSM-D10	PLSM-D10/2	PLSM-D10/3
16	PLSM-D16	PLSM-D16/2	PLSM-D16/3
20	PLSM-D20	PLSM-D20/2	PLSM-D20/3
25	PLSM-D25	PLSM-D25/2	PLSM-D25/3
32	PLSM-D32	PLSM-D32/2	PLSM-D32/3
40	PLSM-D40	PLSM-D40/2	PLSM-D40/3


**Notes**


PLSM circuit-breakers have colour-coded toggle switches, as follows:


2 A	4 A	6 A	10 A	13 A	16 A
20 A	25 A	32 A	40 A	50 A	63 A

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	Rated uninterrupted current $I_u$ A	Tripping current mA	2-pole	4-pole
<b>Standard AC residual current devices</b>				
	25	30	PFIM-25/2/003	PFIM-25/4/003
	25	100	PFIM-25/2/01	PFIM-25/4/01
	40	30	PFIM-40/2/003	PFIM-40/4/003
	40	100	PFIM-40/2/01	PFIM-40/4/01
	63	30	PFIM-63/2/003	PFIM-63/4/003
	63	100	PFIM-63/2/01	PFIM-63/4/01
	63	300	PFIM-63/2/03	PFIM-63/4/03
	80	30	PFIM-80/2/003	PFIM-80/4/003
	80	100	PFIM-80/2/01	PFIM-80/4/01
	80	300	PFIM-80/2/03	PFIM-80/4/03

	Rated current $I_n$ A	Tripping current mA	Type B $3 - 5 \times I_n$	Type C $5 - 10 \times I_n$
<b>Combined RCD/MCB devices (RCBO), single-phase and neutral</b>				
	2	30		PKNM-2/1N/C/003
	4			PKNM-4/1N/C/003
	6		PKNM-6/1N/B/003	PKNM-6/1N/C/003
	10		PKNM-10/1N/B/003	PKNM-10/1N/C/003
	13			PKNM-13/1N/C/003
	16		PKNM-16/1N/B/003	PKNM-16/1N/C/003
	32		PKNM-32/1N/B/003	PKNM-32/1N/C/003
	40		PKNM-40/1N/B/003	PKNM-40/1N/C/003






	Rated current $I_n$ A	Contacts	Actuating voltage	Part number
<b>Modular contactors</b>				
	25	4 N/O	230 V AC, 50 Hz coil	Z-SCH230/25-40
	25	2 N/O 2 N/C		Z-SCH230/25-22
	25	3 N/O 1 N/C		Z-SCH230/25-31
	25	4 N/C		Z-SCH230/25-04
	40	2 N/O		Z-SCH230/40-20
	40	4 N/O		Z-SCH230/40-40
	40	2 N/O 2 N/C		Z-SCH230/40-22
	40	3 N/O 1 N/C		Z-SCH230/40-31
	63	2 N/O		Z-SCH230/63-20
	63	4 N/O		Z-SCH230/63-40
	63	2 N/O 2 N/C		Z-SCH230/63-22
	63	3 N/O 1 N/C		Z-SCH230/63-31
	25	4 N/O	24 V AC, 50 Hz coil	Z-SCH24/25-40
	25	2 N/O 2 N/C		Z-SCH24/25-22

	Programme A	Contacts	Drive	Part number
<b>Time switches, analog</b>				
	Day	1 N/O	Quartz	SU-GQ-TA
	Day	1 C/O	Quartz	SU-GQ/1W-TA
	Week	1 C/O	Quartz	SU-GQ/1W-WO
	Week	1 C/O	Synchronous	SU-GS/1W-WO
	Day	1 C/O	Synchronous	SU-GS/1W-TA
	Day & week	2 C/O	Quartz	SU-GQ/2W-TW

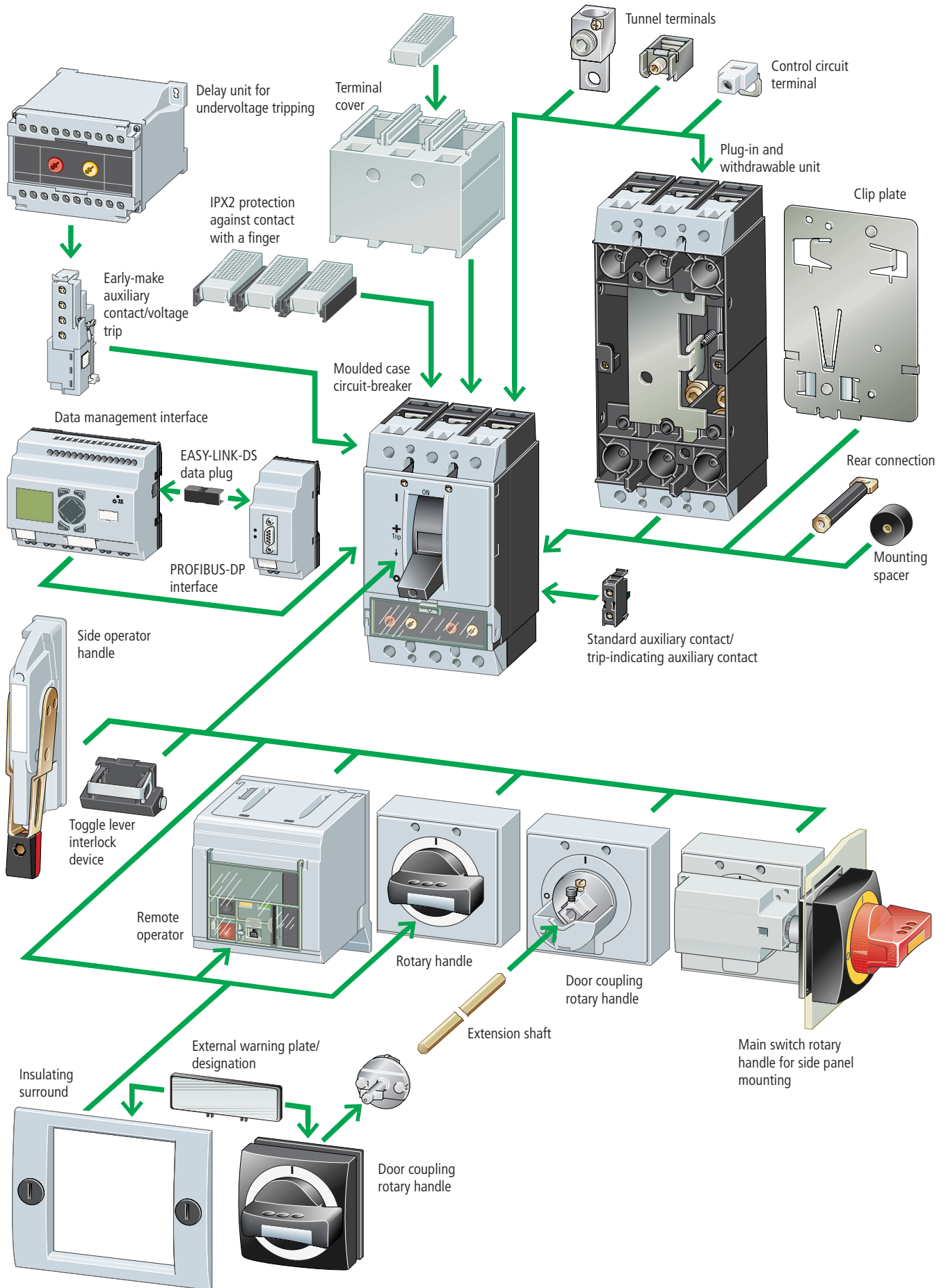






	Poles	Rated operational current $I_e$ A	No. of 17.5 mm modules	Part number
<b>Commoning busbars with fork connectors, closed end</b>				
	1	85	2	FAZ-XIS1/2
	1	85	6	FAZ-XIS1/6
	1	85	12	FAZ-XIS1/12
	2	100	4	FAZ-XIS2/4
	2	100	6	FAZ-XIS2/6
	2	100	12	FAZ-XIS2/12
	3	100	6	FAZ-XIS3/6
	3	100	12	FAZ-XIS3/12
<b>Busbar combs with fork connectors, open end</b>				
1 m length				
	1	63	57	Z-GV-10/1P-1TE
	1	80	57	Z-GV-16/1P-1TE
	3	63	57	Z-GV-10/3P-3TE
	3	80	57	Z-GV-16/3P-3TE
<b>Busbar end caps</b>				
For use with Z-GV-10...				Z-AK-10/2+3P
For use with Z-GV-16...				Z-AK-16/2+3P
Busbar tag shrouds				FAZ-XB5
<b>Accessories</b>				
<b>Shunt trips</b>				
			All miniature circuit-breakers	FAZ-XAA-C-12-110VAC FAZ-XAA-C-110-415VAC
<b>Auxiliary contact, AC-11, 6 A at 230 V</b>				
	1 N/O 1 N/C		All miniature circuit-breakers	FAZ-XHI11
<b>Trip-indicating auxiliary contact, AC-11, 6 A at 230 V</b>				
	2 x C/O		All miniature circuit-breakers	FAZ-XAM002
<b>Sealing covers</b>				
		Two 17.5 mm units	Modular contactors	Z-SCHAK-2TE
		Three 17.5 mm units		Z-SCHAK-3TE

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Moulded case circuit-breakers NZM  
switch-disconnectors PN, N







Moeller's NZM1, 2, 3 & 4 moulded case circuit-breakers and PN & N main switches have a uniquely uniform approach to mounting, operation and switching, with accessories saving time and money.

Available in four frame sizes, with toggle or rotary handle options, the NZM1 – 4 are suitable for a wide variety of applications. Contacts from the RMQ-Titan range of control circuit devices simply clip in from the front of the circuit-breakers to provide remote status indication.








The optional data management interface for the breakers with electronic trips improves diagnostics and allows rapid fault analysis, so minimising downtime.

#### Features and benefits

- Common base plate on all rotary handles for simplified engineering
- Compact size saves panel space.
- Choice of toggle actuator or rotary handle offers adaptability.
- Identical operation, function, mounting and fitting for every frame size with standard mounting spacers for user-friendly installation.
- Uniform range of auxiliary contacts and releases with simple screw or spring-loaded connections speeds assembly and reduces inventory costs.
- Innovative double-break contact system (on sizes 2 and 3) offers enhanced breaking capacity.












	Rated uninterrupted current A	Setting range of overload trip A	Part number 25 kA	Part number 50 kA
<b>Thermomagnetic trip for system/cable protection, 3-pole</b>				
	40	32 – 40	NZMB1-A40	NZMN1-A40
	50	40 – 50	NZMB1-A50	NZMN1-A50
	63	50 – 63	NZMB1-A63	NZMN1-A63
	80	63 – 80	NZMB1-A80	NZMN1-A80
	100	80 – 100	NZMB1-A100	NZMN1-A100
	125	100 – 125	NZMB1-A125	NZMN1-A125
	125	100 – 125	NZMB2-A125	NZMN2-A125
	160	125 – 160	NZMB2-A160	NZMN2-A160
	200	160 – 200	NZMB2-A200	NZMN2-A200
	250	200 – 250	NZMB2-A250	NZMN2-A250

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	Rated uninterrupted current A	Setting range of overload trip A	Part number
<b>Electronic trip for system, cable &amp; generator protection, 3-pole, 50 kA</b>			
	100	50 – 100	NZMN2-VE100
	160	80 – 160	NZMN2-VE160
	250	125 – 250	NZMN2-VE250
	250	125 – 250	NZMN3-VE250
	400	200 – 400	NZMN3-VE400
	630	315 – 630	NZMN3-VE630
	630	315 – 630	NZMN4-VE630
	800	400 – 800	NZMN4-VE800
	1000	500 – 1000	NZMN4-VE1000
	1250	630 – 1250	NZMN4-VE1250
	1600	800 – 1600	NZMN4-VE1600
<b>Main switch for manual operation, 3-pole</b>			
	63		PN1-63
	100		PN1-100
	125		PN1-125
	160		PN2-160
	200		PN2-200
	250		PN2-250
<b>Main switch for manual operation, 3-pole</b>			
Remote actuation possible			
	63		N1-63
	100		N1-100
	125		N1-125
	160		N2-160
	200		N2-200
	250		N2-250





Moulded case circuit-breakers NZM  
switch-disconnectors PN, N



	Description	For use with	Part number
<b>Auxiliary Contacts</b>			
	Internal fixing, N/O contact	NZM..., PN..., N...	M22-K10
	Internal fixing, N/C contact	NZM..., PN..., N...	M22-K01
	2 x early-make contacts	NZM1, PN1, N1	NZM1-XHIV
	2 x early-make contacts	NZM2, NZM3, PN2, N2	NZM2/3-XHIV
	2 x early-make contacts	NZM4	NZM4-XHIV
<b>Shunt trips</b>			
	24 V AC/DC	NZM1, N1	NZM1-XA24AC/DC
	110 – 130 V AC/DC		NZM1-XA110-130AC/DC
	208 – 250 V AC/DC		NZM1-XA208-250AC/DC
	380 V – 440 V AC/DC		NZM1-XA380-440AC/DC
	24 V AC/DC	NZM2, NZM3, N2	NZM2/3-XA24AC/DC
	110 – 130 V AC/DC		NZM2/3-XA110-130AC/DC
	208 – 250 V AC/DC		NZM2/3-XA208-250AC/DC
	380 V – 440 V AC/DC		NZM2/3-XA380-440AC/DC
	24 V AC/DC	NZM4	NZM4-XA24AC/DC
	110 – 130 V AC/DC		NZM4-XA110-130AC/DC
	208 – 250 V AC/DC		NZM4-XA208-250AC/DC
	380 V – 440 V AC/DC		NZM4-XA380-440AC/DC
<b>Under voltage trips</b>			
	24 V AC	NZM1, N1	NZM1-XU24AC
	110 – 130 V AC		NZM1-XU110-130AC
	208 – 240 V AC		NZM1-XU208-240AC
	380 V – 440 V AC		NZM1-XU380-440AC
	24 V AC	NZM2, NZM3, N2	NZM2/3-XU24AC
	110 – 130 V AC		NZM2/3-XU110-130AC
	208 – 240 V AC		NZM2/3-XU208-240AC
	380 V – 440 V AC		NZM2/3-XU380-440AC
	24 V AC	NZM4	NZM4-XU24AC
	110 – 130 V AC		NZM4-XU110-130AC
	208 – 240 V AC		NZM4-XU208-240AC
	380 V – 440 V AC		NZM4-XU380-440AC
<b>Handles</b>			
<b>Rotary handle/drive</b>			
	Black, direct mounting on NZM..., padlockable	NZM1, PN1, N1	NZM1-XDV
		NZM2, PN2, N2	NZM2-XDV
		NZM3	NZM3-XDV
		NZM4	NZM4-XDV
<b>Door coupling handle/drive</b>			
	Black/grey, padlockable	NZM1, PN1, N1	NZM1-XTVDV
		NZM2, PN2, N2	NZM2-XTVDV
		NZM3	NZM3-XTVDV
		NZM4	NZM4-XTVDV
<b>Door coupling handle/drive</b>			
	Red/yellow, padlockable	NZM1, PN1, N1	NZM1-XTVDVR
		NZM2, PN2, N2	NZM2-XTVDVR
		NZM3	NZM3-XTVDVR
		NZM4	NZM4-XTVDVR



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	Description	For use with	Part number
<b>Shafts</b>			
	Mounting depth $\leq$ 400 mm	NZM1, NZM2, PN1, PN2, N1, N2	NZM1/2-XV4
	Mounting depth $\leq$ 600 mm	NZM1, NZM2, PN1, PN2, N1, N2	NZM1/2-XV6
	Mounting depth $\leq$ 400 mm	NZM3, NZM4	NZM3/4-XV4
	Mounting depth $\leq$ 600 mm	NZM3, NZM4	NZM3/4-XV6
<b>Mounting spacer</b>			
	Grid depth 17.5 mm (pack of 4)	NZM1, NZM2, PN1, PN2, N1, N2	NZM1/2-XAB
<b>Clip plate</b>			
	For top-hat DIN rail 35 mm	NZM1, PN1, N1	NZM1-XC35
<b>Data management interface (DMI)</b>			
	Electronic trip devices only	NZM...	NZM-XDMI612
Software kit		NZM..., DMI	NZM-XPC-KIT
Power supply		DMI	EASY400-POW
Cable	To link between DMI and NZM...	NZM..., DMI	NZM-XDMI-CAB
<b>Terminal covers</b>			
	IP4X, 3-pole	NZM1, PN1, N1	NZM1-XKSA
		NZM2, PN2, N2	NZM2-XKSA



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A-PKZ0...	Shunt trips	50	M22-WJ...	Joystick, 4 positions	6
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## Technical Data

### Rated currents of three-phase motors (guidelines for squirrel-cage motors)

#### Minimum fuse size for the protection of three-phase motors

The maximum size is governed by the requirements of the associated switchgear or overload relay

Motor rating			230 V			400 V			500 V			690 V		
			Rated motor current	Fuse		Rated motor current	Fuse		Rated motor current	Fuse		Rated motor current	Fuse	
kW	cos $\pi$	$\xi$ (%)	A	Starting direct	Y/Δ	A	Starting direct	Y/Δ	A	Starting direct	Y/Δ	A	Starting direct	Y/Δ
0.06	0.7	58	0.37	2	–	0.21	2	–	0.17	2	–	0.12	2	–
0.09	0.7	60	0.54	2	–	0.31	2	–	0.25	2	–	0.18	2	–
0.12	0.7	60	0.72	4	2	0.41	2	–	0.33	2	–	0.24	2	–
0.18	0.7	62	1.04	4	2	0.6	2	–	0.48	2	–	0.35	2	–
0.25	0.7	62	1.4	4	2	0.8	4	2	0.7	2	–	0.5	2	–
0.37	0.72	66	2	6	4	1.1	4	2	0.9	2	2	0.7	2	–
0.55	0.75	69	2.7	10	4	1.5	4	2	1.2	4	2	0.9	4	2
0.75	0.79	74	3.2	10	4	1.9	6	4	1.5	4	2	1.1	4	2
1.1	0.81	74	4.6	10	6	2.6	6	4	2.1	6	4	1.5	4	2
1.5	0.81	74	6.3	16	10	3.6	6	4	2.9	6	4	2.1	6	4
2.2	0.81	78	8.7	20	10	5	10	6	4	10	4	2.9	10	4
3	0.82	80	11.5	25	16	6.6	16	10	5.3	16	6	3.8	10	4
4	0.82	83	14.8	32	16	8.5	20	10	6.8	16	10	4.9	16	6
5.5	0.82	86	19.6	32	25	11.3	25	16	9	20	16	6.5	16	10
7.5	0.82	87	26.4	50	32	15.2	32	16	12.1	25	16	8.8	20	10
11	0.84	87	38	80	40	21.7	40	25	17.4	32	20	12.6	25	16
15	0.84	88	51	100	63	29.3	63	32	23.4	50	25	17	32	20
18.5	0.84	88	63	125	80	36	63	40	28.9	50	32	20.9	32	25
22	0.84	92	71	125	80	41	80	50	33	63	32	23.8	50	25
30	0.85	92	96	200	100	55	100	63	44	80	50	32	63	32
37	0.86	92	117	200	125	68	125	80	54	100	63	39	80	50
45	0.86	93	141	250	160	81	160	100	65	125	80	47	80	63
55	0.86	93	173	250	200	99	200	125	79	160	80	58	100	63
75	0.86	94	233	315	250	134	200	160	107	200	125	78	160	100
90	0.86	94	279	400	315	161	250	200	129	200	160	93	160	100
110	0.86	94	342	500	400	196	315	200	157	250	160	114	200	125
132	0.87	95	401	630	500	231	400	250	184	250	200	134	250	160
160	0.87	95	486	630	630	279	400	315	224	315	250	162	250	200
200	0.87	95	607	800	630	349	500	400	279	400	315	202	315	250
250	0.87	95	–	–	–	437	630	500	349	500	400	253	400	315
315	0.87	96	–	–	–	544	800	630	436	630	500	316	500	400
400	0.88	96	–	–	–	683	1000	800	547	800	630	396	630	400
450	0.88	96	–	–	–	769	1000	800	615	800	630	446	630	630
500	0.88	97	–	–	–	–	–	–	–	–	–	491	630	630
560	0.88	97	–	–	–	–	–	–	–	–	–	550	800	630
630	0.88	97	–	–	–	–	–	–	–	–	–	618	800	630

#### Notes

The rated motor currents apply to normal, internally-ventilated and enclosed fan-cooled three-phase motors at 1500 rpm.

D.O.L. starting: Maximum starting current 6 Δ rated motor current.

Maximum starting time 5 seconds.

Y/Δ-starting: Maximum starting current 2 Δ rated motor current.

Maximum starting time 15 seconds.

Set the overload relay in the phase lead to 0.58 Δ rated motor current.

Rated fuse currents for Y/Δ-starting also apply to three-phase motors with slip-ring rotors.

Use a larger fuse if the rated current or starting current is higher and/or if the starting time is longer.

The table applies to "slow" or "gL" fuses (VDE 0636)

**LV h.b.c. fuses with aM characteristics, select fuse size to match rated current.**



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