



4-pole contactor, 20A/AC-1, AC-operated

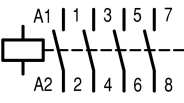


Powering Business Worldwide™

Part no. DILMP20(190V50HZ,220V60HZ)

Article no. 276968

Delivery programme

Product range			Contactors
Application			Contactors for 4 pole electric consumers
Subrange			Contactors up to 200 A, 4 pole
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Squirrel-cage motors: starting, switching off during running
Connection technique			Screw terminals
Pole			4 pole
Rated operational current			
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
at 40 °C	$I_{th} = I_e$	A	22
at 50 °C	$I_{th} = I_e$	A	21
at 60 °C	$I_{th} = I_e$	A	20
Contact sequence			
For use with			DILM32-XHI(C)... DILA-XHI(V)(C)...
Voltage AC/DC			AC operation
Instructions			Contacts to EN 50012.

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	$x 10^6$	10
DC operated	Operations	$x 10^6$	10
Operating frequency, mechanical			
AC operated	Operations/h		5000
DC operated	Operations/h		5000
Climatic proofing			Damp heat, constant to IEC 60068-2-3 Damp heat, cyclic to IEC 60068-2-30
Ambient temperature		°C	
Open		°C	- 25 - 60
Enclosed		°C	- 25 - 40
Storage		°C	- 40 - 80
Mounting position			
Mounting position			
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 10 ms			
Main contacts			
N/O contact		g	10
Auxiliary contacts			
N/O contact		g	7

N/C contact		g	5
Protection type			IP20
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof
Terminal capacity main cable			
Solid		mm ²	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 14
Terminal capacity control circuit cables			
Solid		mm ²	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 14
Main cable connection screw/bolt			M3.5
Tightening torque		Nm	1.2
Control circuit cable connection screw/bolt			M3.5
Tightening torque		Nm	1.2
Tool			
Main cable			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5 1 x 6
Control circuit cables			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5 1 x 6

Main conducting paths

Rated impulse withstand voltage	U_{imp}	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V AC	690
Rated operational voltage	U_e	V AC	690
Safe isolation to VDE 0106 Part 101 and Part 101/A1			
between coil and contacts		V AC	400
between the contacts		V AC	400
Making capacity (cos φ)	Up to 690 V	A	144 According to IEC/EN 60947
Breaking capacity			
220 V 230 V		A	120
380 V 400 V AC		A	120
500 V		A	100
660 690 V AC		A	70
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	20
690 V	gG/gL 690 V	A	20
Type "1" coordination			
400 V	gG/gL 500 V	A	35
690 V	gG/gL 690 V	A	25

AC

AC-1			
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Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	22
at 50 °C	$I_{th} = I_e$	A	21
at 60 °C	$I_{th} = I_e$	A	20
enclosed	I_{th}	A	18
Conventional free air thermal current, 1 pole			
open	I_{th}	A	60
enclosed	I_{th}	A	54
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	12
240 V	I_e	A	12
380 V 400 V	I_e	A	12
415 V	I_e	A	12
440V	I_e	A	12
500 V	I_e	A	10
660 V 690 V	I_e	A	7
Motor rating	P	kWh	
220 V 230 V	P	kW	3.5
240V	P	kW	4
380 V 400 V	P	kW	5.5
415 V	P	kW	7
440 V	P	kW	7.5
500 V	P	kW	7
660 V 690 V	P	kW	6.5

DC


Rated operational current, open			
DC-1			
60 V	I_e	A	22
110 V	I_e	A	22
220 V	I_e	A	6
440 V	I_e	A	1.3
DC-3			
60 V	I_e	A	20
110 V	I_e	A	20
220 V	I_e	A	1.5
440 V	I_e	A	0.2
DC-5			
60 V	I_e	A	20
110 V	I_e	A	20
220 V	I_e	A	1.5
440 V	I_e	A	0.2

Current heat loss

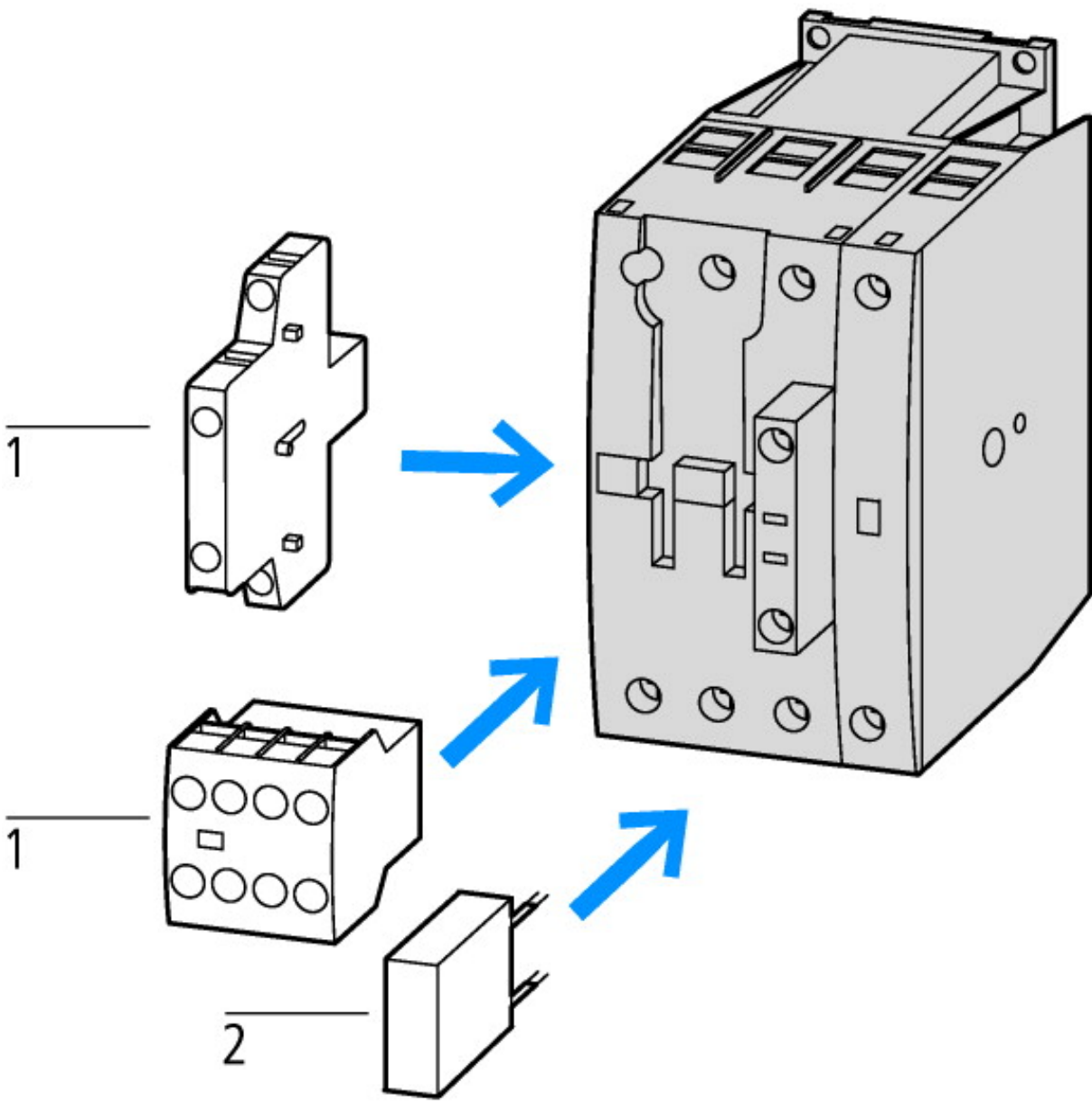
3-pole at I_{th}		W	4.7
Impedance per pole		mΩ	2.5

Magnet systems

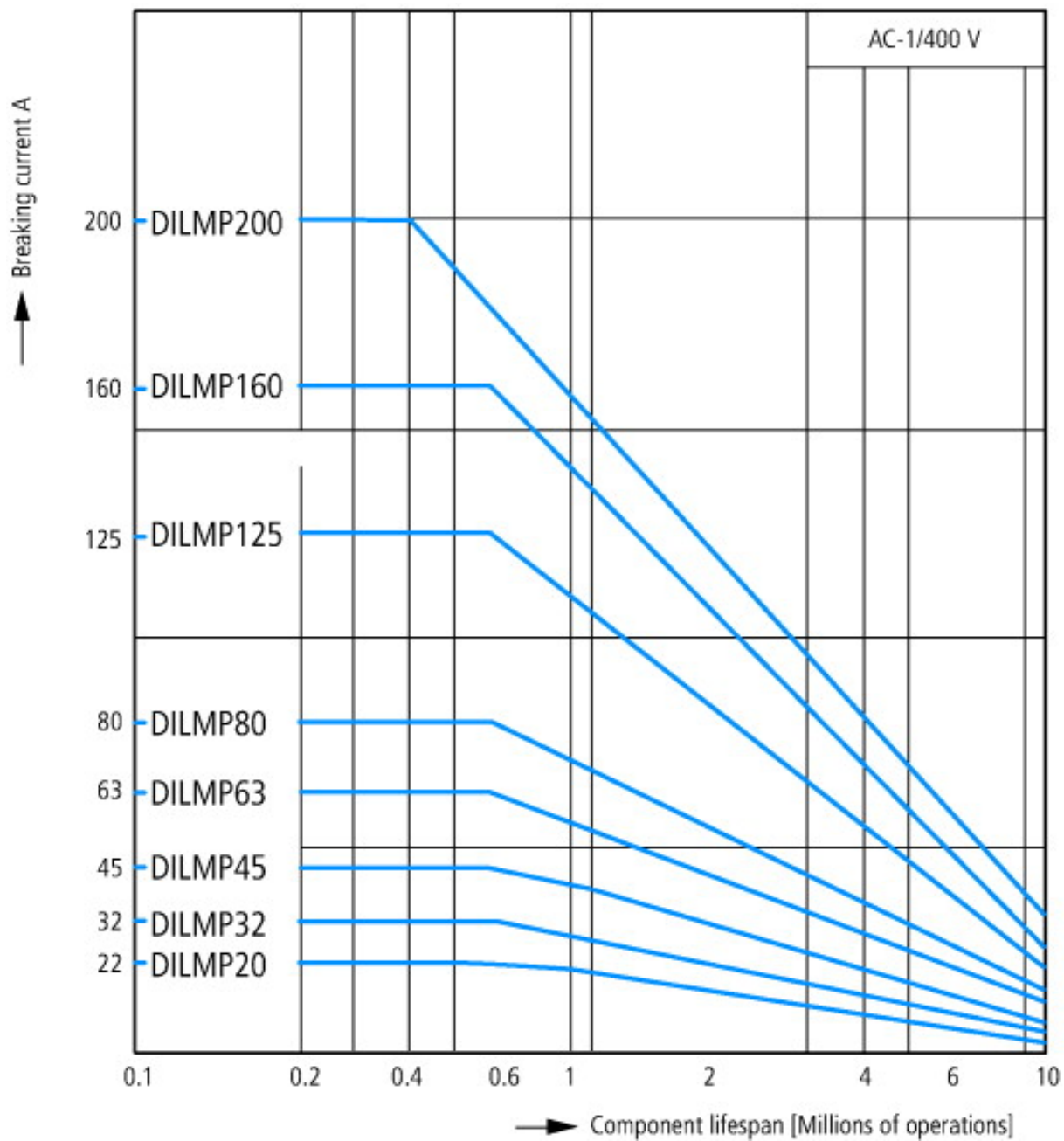
Voltage tolerance		$x U_c$	
AC operated 50 Hz	Pick-up	$x U_c$	0.8 - 1.1
AC operated 50/60 Hz		$x U_c$	0.8 - 1.1
Drop-out voltage AC operated	Drop-out	$x U_c$	0.4 - 0.6

DC operated	Pick-up	$x U_c$	0.8 - 1.1
DC operated	Drop-out	$x U_c$	0.2 - 0.6
Power consumption of the coil in a cold state and $1.0 x U_c$			
AC operated 50/60 Hz	Pick-up	VA	24
AC operated 50/60 Hz	Pick-up	W	19
AC operated 50/60 Hz	Sealing	VA	4
AC operated 50/60 Hz	Sealing	W	1.2
DC operated	Pick-up	W	4,5
DC operated	Sealing	W	4,5
Duty factor		% DF	100
Switching times at 100 % U_c (approximate values)			
Main contacts			
AC operated			
Closing delay		ms	15 - 21
Opening delay		ms	9 - 18
DC operated			
Closing delay		ms	31
Opening delay		ms	12
Arcing time		ms	10
Permissible residual current with actuation of A1 - A2 by the electronics (with 0 signal).		mA	 1

Characteristics

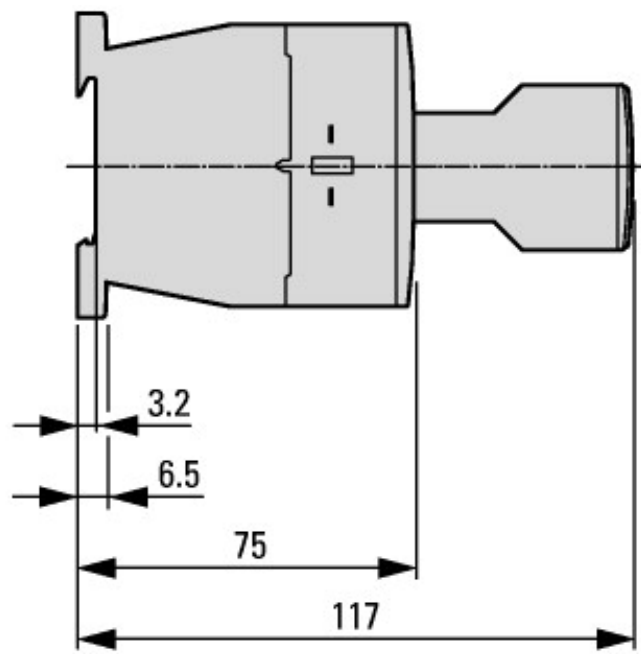
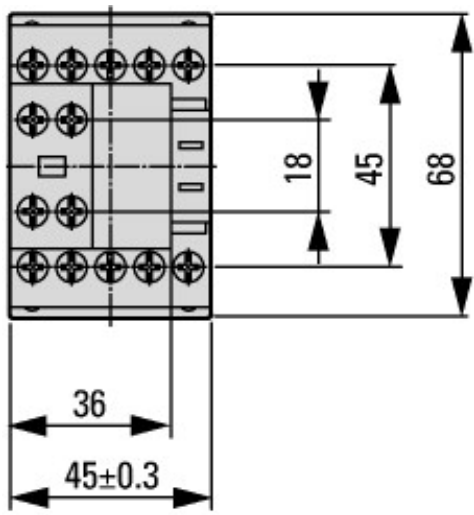


1: Auxiliary contact module
2: Suppressor

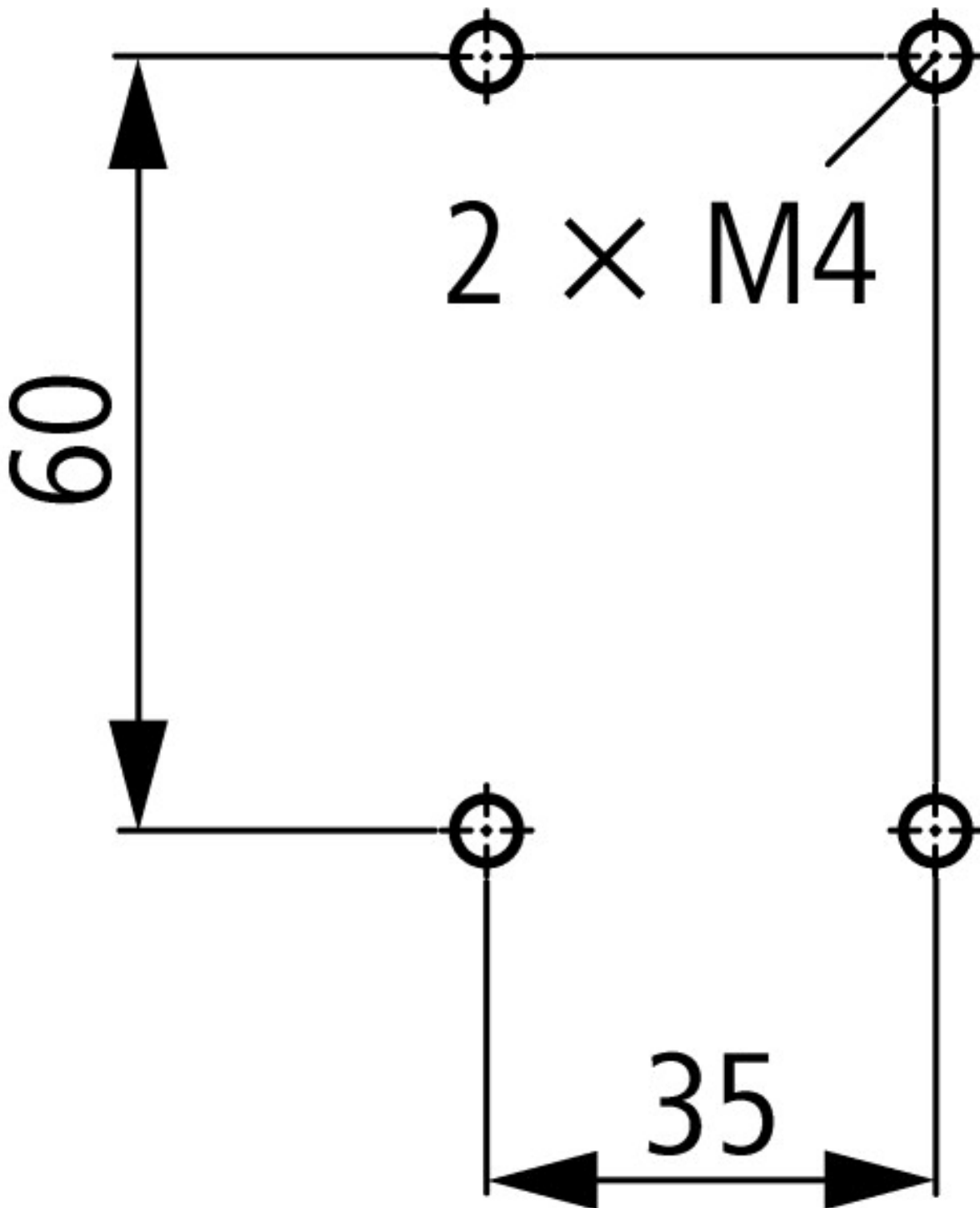


Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 × rated operational current
 Switch off: 1 × rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application
 Electric heat

Dimensions



Contacteur with auxiliary contact module



DILMP20

Additional product information (links)

Switchgear of Power Factor Correction Systems	http://www.moeller.net/binary/ver_techpapers/ver934en.pdf
X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely	http://www.moeller.net/binary/ver_techpapers/ver938en.pdf
Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions	http://www.moeller.net/binary/ver_techpapers/ver944en.pdf
Effect of the Cabel Capacitance of Long Control Cables on the Actuation of Contactors	http://www.moeller.net/binary/ver_techpapers/ver949en.pdf
Motor starters and "Special Purpose Ratings" for the North American market	http://www.moeller.net/binary/ver_techpapers/ver953en.pdf
Switchgear for Luminaires	http://www.moeller.net/binary/ver_techpapers/ver955en.pdf
Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts	http://www.moeller.net/binary/ver_techpapers/ver956en.pdf
The Interaction of Contactors with PLCs	http://www.moeller.net/binary/ver_techpapers/ver957en.pdf
Busbar Component Adapters for modern Industrial control panels	http://www.moeller.net/binary/ver_techpapers/ver960en.pdf