

# Fixed capacitor CLMD



winding fuse according to the IPE principle. The individual self-healing capacitors are installed together with cooling plates in a common sheet metal housing with fireproof granulate filling.

## Advantages

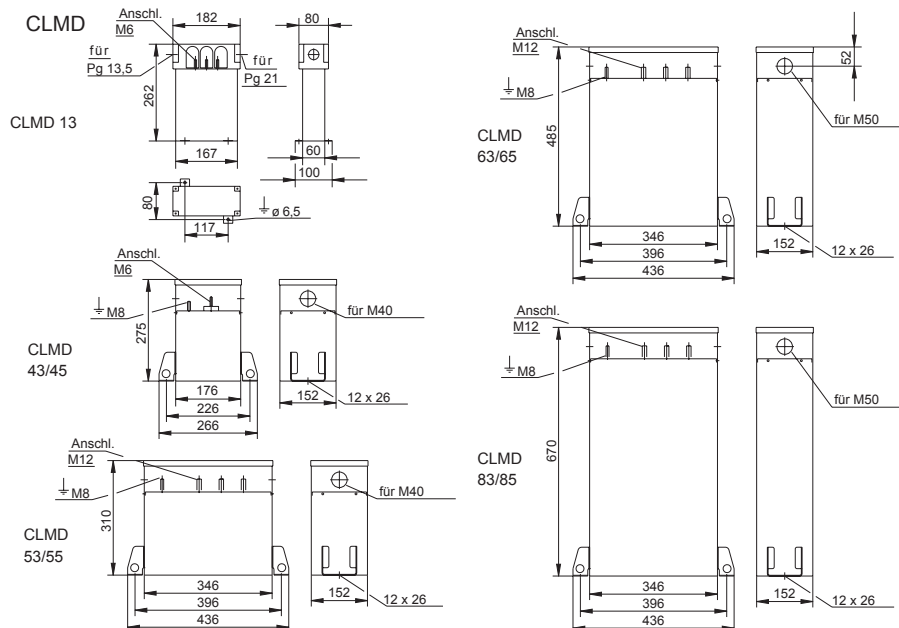
- Wired ready for connection
- Easy connection for all ratings
- Mechanically robust and compact construction
- Robust unbreakable terminals
- Easy installation
- Mounting in any position
- Protection degree IP 42 or IP 54
- Terminals fitted with discharge resistors
- Leakproof and environment friendly dry capacitor
- Self-healing capacitors with patented winding protection
- Light in weight, no hoisting equipment required

## Application

The **CLMD fixed capacitor** is particularly suitable for compensation on site i.e. directly on the electrical equipment which generates reactive power (such as electric motors, transformers). It can also be used where capacitors have to fulfil high mechanical requirements.

## Description

The CLMD power capacitor consists of a number of single-phase cylindrical windings made of metallized polypropylene foil. Each element contains an internal



## Types and order specifications

Protection degree: IP 42

Rated power kvar	Order description	Rated current* A	HRC fuses slow A	Dimensions** (W x D x H) mm	Weight approx. kg	Article number
<b>Rated voltage 400 V, 50 Hz three-phase system</b>						
2,5	CLMD 13 -400 / 50 - 2,5	4	16	182 x 80 x 262	2	K049-310
5	CLMD 13 -400 / 50 - 5,0	7	16	182 x 80 x 262	2	K049-311
6,7	CLMD 13 -400 / 50 - 6,7	10	16	182 x 80 x 262	2	K049-312
10	CLMD 13 -400 / 50 - 10	14	25	182 x 80 x 262	2	K049-313
12,5	CLMD 13 -400 / 50 - 12,5	18	35	182 x 80 x 262	2	K049-314
15	CLMD 13 -400 / 50 - 15	22	35	182 x 80 x 262	2	K049-315
16,5	CLMD 13 -400 / 50 - 16,5	24	35	182 x 80 x 262	2	K049-316
16,7	CLMD 43 -400 / 50 - 16,7	24	35	176 x 152 x 275	7	C161-OAG
20	CLMD 43 -400 / 50 - 20	29	50	176 x 152 x 275	7	C161-OAH
25	CLMD 43 -400 / 50 - 25	36	63	176 x 152 x 275	8	C161-OAK
30	CLMD 53 -400 / 50 - 30	43	63	346 x 152 x 310	9	C161-OAL
35	CLMD 53 -400 / 50 - 35	51	80	346 x 152 x 310	10	C161-OAM
40	CLMD 53 -400 / 50 - 40	58	100	346 x 152 x 310	11	C161-OAN
50	CLMD 63 -400 / 50 - 50	72	125	346 x 152 x 485	15	C161-OAP
60	CLMD 63 -400 / 50 - 60	87	125	346 x 152 x 485	17	C161-OAR
70	CLMD 63 -400 / 50 - 70	101	160	346 x 152 x 485	18	C161-OAS
80	CLMD 63 -400 / 50 - 80	115	200	346 x 152 x 485	23	C161-OAT
100	CLMD 83 -400 / 50 - 100	144	200	346 x 152 x 670	25	C161-OAU
120	CLMD 83 -400 / 50 - 120	173	250	346 x 152 x 670	27	C161-OAV
<b>Rated voltage 525 V, 50 Hz three-phase system</b>						
10	CLMD 13 -525 / 50 - 10	11	16	182 x 80 x 262	2	K049-340
20	CLMD 43 -525 / 50 - 20	22	35	176 x 152 x 275	6	C161-OCB
30	CLMD 53 -525 / 50 - 30	33	50	346 x 152 x 310	9	C161-OCC
40	CLMD 53 -525 / 50 - 40	44	63	346 x 152 x 310	11	C161-OCD
50	CLMD 63 -525 / 50 - 50	55	80	346 x 152 x 485	15	C161-OCE
60	CLMD 63 -525 / 50 - 60	66	100	346 x 152 x 485	17	C161-OCF
80	CLMD 63 -525 / 50 - 80	88	160	346 x 152 x 485	23	C161-OCG
100	CLMD 83 -525 / 50 - 100	110	160	346 x 152 x 670	25	C161-OCH
120	CLMD 83 -525 / 50 - 120	132	200	346 x 152 x 670	27	C161-OCK
<b>Rated voltage 690 V, 50 Hz three-phase system</b>						
5	CLMD 13 -690 / 50 - 5	4	16	182 x 80 x 262	2	K049-351
10	CLMD 13 -690 / 50 - 10	8	16	182 x 80 x 262	2	K049-352
15	CLMD 13 -690 / 50 - 15	13	20	182 x 80 x 262	2	K049-353
20	CLMD 43 -690 / 50 - 20	17	25	176 x 152 x 275	9	C161-OED
30	CLMD 53 -690 / 50 - 30	25	50	346 x 152 x 310	11	C161-OEE
40	CLMD 53 -690 / 50 - 40	33	50	346 x 152 x 310	19	C161-OEF
50	CLMD 63 -690 / 50 - 50	42	63	346 x 152 x 485	23	C161-OEG
70	CLMD 63 -690 / 50 - 70	59	100	346 x 152 x 485	25	C161-OEH
80	CLMD 63 -690 / 50 - 80	67	100	346 x 152 x 485	27	C161-OEK
100	CLMD 83 -690 / 50 - 100	84	125	346 x 152 x 670	29	C161-OEL

\* For connection cross-sections see catalogue page 79.

\*\* Dimensions without base brackets

Other voltages, frequencies and rated powers on request.

# Fixed capacitor CLMD

## Types and order specifications

Protection degree: IP 54

Rated power kvar	Order description	Rated current* A	HRC fuses slow A	Dimensions** (W x D x H) mm	Weight approx. kg	Article number
<b>Rated voltage 400 V, 50 Hz three-phase system</b>						
2,5	CLMD 45 -400 / 50 - 2,5	4	16	176 x 152 x 275	5	C161-OKA
5	CLMD 45 -400 / 50 - 5	7	16	176 x 152 x 275	5	C161-OKB
6,7	CLMD 45 -400 / 50 - 6,7	10	16	176 x 152 x 275	6	C161-OKC
8	CLMD 45 -400 / 50 - 8	12	20	176 x 152 x 275	6	C161-OKD
10	CLMD 45 -400 / 50 - 10	14	25	176 x 152 x 275	6	C161-OKE
12,5	CLMD 45 -400 / 50 - 12,5	18	35	176 x 152 x 275	7	C161-OKF
16,7	CLMD 45 -400 / 50 - 16,7	24	35	176 x 152 x 275	7	C161-OKG
20	CLMD 45 -400 / 50 - 20	29	50	175 x 152 x 275	7	C161-OKH
25	CLMD 45 -400 / 50 - 25	36	63	176 x 152 x 275	8	C161-OKK
30	CLMD 55 -400 / 50 - 30	43	63	346 x 152 x 310	9	C161-OKL
35	CLMD 55 -400 / 50 - 35	51	80	346 x 152 x 310	10	C161-OKM
40	CLMD 55 -400 / 50 - 40	58	100	346 x 152 x 310	11	C161-OKN
50	CLMD 65 -400 / 50 - 50	72	125	346 x 152 x 485	15	C161-OKP
60	CLMD 65 -400 / 50 - 60	87	125	346 x 152 x 485	17	C161-OKR
70	CLMD 65 -400 / 50 - 70	101	160	346 x 152 x 485	18	C161-OKS
80	CLMD 65 -400 / 50 - 80	115	200	346 x 152 x 485	23	C161-OKT
100	CLMD 85 -400 / 50 - 100	144	200	346 x 152 x 670	25	C161-OKU
120	CLMD 85 -400 / 50 - 120	173	250	346 x 152 x 670	27	C161-OKV
<b>Rated voltage 525 V, 50 Hz three-phase system</b>						
10	CLMD 45 -525 / 50 - 10	11	16	176 x 152 x 275	4	C161-OMA
20	CLMD 45 -525 / 50 - 20	22	35	176 x 152 x 275	6	C161-OMB
30	CLMD 55 -525 / 50 - 30	33	50	346 x 152 x 310	9	C161-OMC
40	CLMD 55 -525 / 50 - 40	44	63	346 x 152 x 310	11	C161-OMD
50	CLMD 65 -525 / 50 - 50	55	80	346 x 152 x 485	15	C161-OME
60	CLMD 65 -525 / 50 - 60	66	100	346 x 152 x 485	17	C161-OMF
80	CLMD 65 -525 / 50 - 80	88	160	346 x 152 x 485	23	C161-OMG
100	CLMD 85 -525 / 50 - 100	110	160	346 x 152 x 670	25	C161-OMH
120	CLMD 85 -525 / 50 - 120	132	200	346 x 152 x 670	27	C161-OMK
<b>Rated voltage 690 V, 50 Hz three-phase system</b>						
5	CLMD 45 -690 / 50 - 5	4	16	176 x 152 x 275	4	C161-OPA
10	CLMD 45 -690 / 50 - 10	8	16	176 x 152 x 275	6	C161-OPB
15	CLMD 45 -690 / 50 - 15	13	20	176 x 152 x 275	9	C161-OPC
20	CLMD 45 -690 / 50 - 20	17	25	176 x 152 x 275	11	C161-OPD
30	CLMD 55 -690 / 50 - 30	25	50	346 x 152 x 310	19	C161-OPE
40	CLMD 55 -690 / 50 - 40	33	50	346 x 152 x 310	23	C161-OPF
50	CLMD 65 -690 / 50 - 50	42	63	346 x 152 x 485	25	C161-OPG
70	CLMD 65 -690 / 50 - 70	59	100	346 x 152 x 485	27	C161-OPH
80	CLMD 65 -690 / 50 - 80	67	100	346 x 152 x 485	29	C161-OPK
100	CLMD 85 -690 / 50 - 100	84	125	346 x 152 x 670	29	C161-OPL

\* For connection cross-sections see catalogue page 79

\*\* Dimensions without base brackets

Other voltages, frequencies and rated powers by request.

## Technical data of fixed capacitors

- Voltage range: 400 V ... 690 V, other voltages on request
- Frequency: 50 Hz, 60 Hz on request
- Capacitor terminals with discharge resistors. Discharge to 75 V within 3 minutes after disconnection, except CLMD-FC: discharge to 10 % of rated voltage within 40 seconds after disconnection
- Rating according to construction up to 120 kvar
- Capacitor element with built-in patented IPE winding protection
- Dielectric losses less than 0.2 W/kvar
- Losses including discharge resistors less than 0.5 W/kvar
- Capacitance tolerance -5 ... +10 %
- Overload capability and testing: EN 60831, IEC 60831, VDE 0560 Part 46
  - between terminals: 2.15  $U_N$ , 50 Hz for 10 sec.
  - between terminals and case: 3 kV, 50 Hz for 10 sec.
- Ambient temperature:
  - + 50°C maximum
  - 40°C minimum
- Earthing:
  - CLMD 43 - 85: Earthing bolts M 8
  - CLMD 13: Screw connection to fixing bracket for max. wire cross-section 10 mm<sup>2</sup>
- Protection degree: IP 42 or IP 54, indoor use
- Enclosure material: electrolytically galvanized sheet steel
- Colour: RAL 7035 light grey
- Cable opening:
  - CLMD 63-85: 2 pieces Ø 47 mm, with rubber gland
  - CLMD 43-55: 2 pieces Ø 37 mm, with rubber gland
  - CLMD 13: 2 pieces Ø 22.5 mm, with rubber gland
- Installation: see dimensional drawings
- Mounting position:
  - IP42: any,
  - IP54 and CLMD-H: vertical standing

### NOTE:

When used in automatic systems, the ambient temperatures must be observed and if necessary quick discharge devices must be installed!

Particular care must be taken in networks with harmonic loads. In this case, it may be necessary to install capacitors with a higher rated voltage than network voltage and to use filter reactors. Further information is available on request.