



# CAPACITORS



## TECHNOLOGY

### Capacitors' technology

DUCATI was the first company in Italy, and among the first in the world, to introduce capacitors for the radiobroadcasting equipment designed by Guglielmo Marconi.

Building upon this tradition, which has always seen DUCATI in the forefront of capacitor technology, the company has developed the innovative PPM and PPMh film with 4In capacitor.

Superior performance and reduced dimensions compared to the by now obsolete paper and oil and gas solutions make PPM/PPMh capacitors the new standard of reference for industrial power factor correction systems.

All the capacitors manufactured by DUCATI Energia feature a protection device conforming to standards EN 60831-1/2. This protection has been achieved by means of a special engineering technology: if a fault occurs the connections will be broken due to overpressure, leaving the insulation of the case intact and preventing the capacitor from exploding or burning.

### Technology Long Life 4I<sub>N</sub>

The Continuous research conducted in DUCATI Energia laboratories has led to the development of a polypropylene film with a special metallization, whose purpose is to favour the self-healing process and reduce dielectric losses.

Thanks to this innovative metallization treatment, the polypropylene is subjected to less stress during operation. Therefore it maintains its dielectric properties for a significantly longer time while delivering significantly better performance in terms of both 4In current and voltage.

The above-described characteristics make these capacitors especially suitable for Continuous duty under highly demanding conditions in harmonic rich environments.

The **Long Life 4I<sub>N</sub>** series of single phase capacitors for industrial PFC, with winded elements made of PPMh film, is the top notch in terms of reliability, performances and reduced size.

The **MONO Long Life 4I<sub>N</sub>** series, equipped in every DUCATI PFC units, use this kind of technology.

### EXTRA DUTY (XD) and STANDARD LIFE series

Metallized polypropylene technology (PPM / MKP) utilizes a vacuum evaporation technique to deposit an extremely thin layer of metal on one side of the polypropylene film.

The capacitor elements built using this technology are obtained by winding two polypropylene films. The capacitor plates consist in the metallized surface of the two films and the dielectric is the propylene film itself.

The main advantage of capacitors with metallized plates is their self-healing capacity. This means that they are capable of restoring their electrical properties following the occurrence of a short circuit between the plates.

In these capacitors the impregnating agent is a special type of resin. DUCATI Energia has developed an ecofriendly resin composition displaying high dielectric stability, which completely eliminates every possible risk of air and water molecules being present inside the capacitor.

The capacitors which use this kind of technology are:

- Three phases capacitors EXTRA DUTY **MODULO XD** series
- Three phases capacitors EXTRA DUTY **MODULO XD MINI** series
- Mono phase capacitors STANDARD LIFE **FLOPPY CAP** series

For further information about the usage of the capacitors, please check the **reference notes** and the **installation notes** at page 36.

#### Single phase capacitors

	Technology	Power Range (kVA <sub>r</sub> )	Voltage Range (V)
MONO	4 I <sub>N</sub>	1.67 - 8.33	400 - 525
FLOPPY CAP	Standard Life	1.67 - 4.17	400 - 550

#### Three phase capacitors

	Technology	Power Range (kVA <sub>r</sub> )	Voltage Range (V)
MODULO XD	Extra Duty	1.5 - 50	240 - 800
MODULO XD Mini	Extra Duty	0.5 - 10	400 - 550
F50	4 I <sub>N</sub>	5 - 60	415 - 525


## MONO Long Life 4I<sub>N</sub>

### Single phase capacitors

The capacitors making up the series **MONO Long Life 4I<sub>N</sub>** are manufactured using elements wound with the PPMh film and housed in metal cases with metal lids. The parts are assembled by crimping to ensure perfect airtightness of the system and efficient operation of the overpressure safety device. The use of resin impregnation technology greatly enhances the capacitor's performance in terms of heat dissipation as well as ensuring a long life and excellent ground insulation.

These characteristics make these capacitors especially suitable for Continuous duty under highly demanding condition in harmonic rich environments.

#### General Characteristics

Power Range	1.67 – 8.33 kVAr
Voltage range	400 ÷ 525 V
Rated frequency	50 Hz/60 Hz
Capacitance tolerance	-5 +10%
Duty	Continuous
Dielectric losses	≤ 0.2 W/kVAr
Life expectancy	≥ 110000h – 25/D ≥ 130000h – 25/C
Max dV/dt	≤ 100 V /μs
Temperature class	-25/D
Max overload I <sub>n</sub>	4 x I <sub>n</sub>
Max inrush current	200 I <sub>n</sub>
Terminals	Double faston M5 bolt for Q= 8.33 kVAr
Protection rating	IP 00
Discharge resistance	NO
Impregnating material	Eco-friendly resin
Altitude	≤ 2000 m s.l.m.
Test voltage (AC) between terminals	2.15 U <sub>n</sub> x 2 s
Test voltage (AC) between terminals and case	3kV x 10 s
Standards	IEC 831 - 1/2
Approvals	 * with modified PN 416.84.

Un (V)	Qn (kVAr)	In (A)	C (μF)	DxH (mm)	Pcs x box	Part n. 416.53
400	1.67	4.2	33.2	45x115	40	<b>1100</b>
	2.5	6.3	49.8	50x115	28	<b>1150</b>
	3.33	8.3	66.3	50x150	28	<b>1200</b>
	4.17	10.4	83	55x150	28	<b>1250</b>
	5	12.5	99.5	60x150	25	<b>1300</b>
	6.66	16.7	132.6	60x165	18	<b>1350</b>
	8.33	20.8	165.8	65x165	16	<b>1400</b>
415	1.67	4	30.9	45x115	40	<b>2100</b>
	2.5	6	46.2	50x115	28	<b>2150</b>
	3.33	8	61.6	50x150	28	<b>2200</b>
	4.17	10	77.1	55x150	28	<b>2250</b>
	5	12	92.5	60x150	25	<b>2300</b>
	6.66	16	123.2	60x165	18	<b>2350</b>
	8.33	20	154	65x165	16	<b>2400</b>
450	1.67	3.7	26.3	45x115	40	<b>3100</b>
	2.5	5.6	39.3	50x115	28	<b>3150</b>
	3.33	7.4	52.4	50x150	28	<b>3200</b>
	4.17	9.3	65.6	55x150	28	<b>3250</b>
	5	11.1	78.6	60x150	25	<b>3300</b>
	6.66	18.8	104.7	60x165	18	<b>3350</b>
	8.33	18.5	131	65x165	16	<b>3400</b>
525	1.67	3.2	19.3	45x115	40	<b>4100</b>
	2.5	4.8	28.9	50x115	28	<b>4150</b>
	3.33	6.3	38.5	50x150	28	<b>4200</b>
	4.17	7.9	48.2	55x150	28	<b>4250</b>
	5	9.5	57.8	60x150	25	<b>4300</b>
	6.66	12.7	77	60x165	18	<b>4350</b>
	8.33	15.9	96.2	65x165	16	<b>4400</b>

Standard box dimensions: 195x390x255 mm  
Weight: 9 Kg.

#### Terminal cover IP54

Code	Diam. (mm)	Packages n. pz. per box
<b>316.</b>		
23.0860	45	100
23.1070	50	200
52.3350	55	72
52.3355	60	60
52.3360	65	60

To enable the overpressure protection device to operate efficiently, it is necessary to leave a gap of at least 30 mm. above the element and use flexible leads for the connection.







## FLOPPY CAP

### Single phase capacitors

The capacitors making up the **FLOPPY CAP - STANDARD LIFE** series are housed in metal cases. The lids are made of self-extinguishing plastic (Class V2 under the inflammability classification of standard UL 94). The capacitor is sealed closed by reading the case over the lid, a solution that guarantees perfect airtightness, which is necessary to ensure the efficiency of the overpressure safety device.

The placement of an insulating container between the capacitor element and the metal case, combined with the embedding of the capacitor element in resin, makes the capacitor extremely safe from an electrical point of view (ground insulation) and insensitive to vibrations.

#### General Characteristics

Power Range	1.67 – 4.17 kVAr
Voltage range	230 ÷ 550 V
Rated frequency	50 Hz /60 Hz
Capacitance tolerance	-5 +10%
Duty	Continuous
Dielectric losses	≤ 0.3 W/kVAr
Life expectancy	≥ 50000h – 25/D ≥ 80000h – 25/C
Max dV/dt	≤ 25 V /μs
Temperature class	-25/D
Max overload In	2 x In
Max inrush current	100 I <sub>n</sub>
Terminals	Double faston
Protection rating	IP 00
Discharge resistance	NO
Impregnating material	Eco-friendly resin
Altitude	≤ 2000 m s.l.m.
Test voltage (AC) between terminals	2.15 U <sub>n</sub> x 2 s
Test voltage (AC) between terminals and case	3kV x 10 s
Standards	IEC 831 - 1/2
Approvals	 (excluding 500-550 V models)  (excluding Un >440 V models)

Un (V)	Qn (kVAr)	In (A)	Cn (μF)	DxH (mm)	Pcs x box	Part n. 416.30	Dim. Box
230	0.83	3.6	50.2	45x122	25	<b>0764</b>	A
	1.67	7.2	100	60x137	25	<b>0564</b>	A
400	1.67	4.2	33.2	50x122	25	<b>3964</b>	B
	2.5	6.3	50	55x132	25	<b>4064</b>	A
	3.33	8.3	66.3	60x137	25	<b>3764</b>	A
	4.17	10.4	83	60x137	25	<b>5064</b>	A
415	1.67	4	30.9	50x122	25	<b>3264</b>	A
	2.5	6	46.2	55x132	25	<b>3464</b>	A
	3.33	8	61.6	60x137	25	<b>3664</b>	A
	4.17	10	77	60x137	25	<b>5264</b>	A
450	1.67	3.7	26.3	50x132	25	<b>6464</b>	A
	2.5	5.6	39.3	55x132	25	<b>6164</b>	A
	3.33	7.4	52.4	60x137	25	<b>6264</b>	A
	4.17	9.3	65.5	60x137	25	<b>5364</b>	A
500	1.67	3.3	21.3	50x132	25	<b>8664</b>	A
	2.5	5	31.8	55x132	25	<b>7664</b>	A
	3.33	6.6	42.4	60x137	25	<b>7964</b>	A
	4.17	8.3	53.1	60x137	25	<b>5664</b>	A
550	1.67	3	17.6	45x132	25	<b>8164</b>	B
	2.5	4.5	26.3	55x132	25	<b>7464</b>	A
	3.33	6.1	35.1	60x137	25	<b>7764</b>	A
	4.17	7.6	43.4	60x137	25	<b>8064</b>	A

Standard box dimensions: A= 195x390x255 mm. B= 195x390x200 mm.  
Weight: 9 Kg.

#### Terminal cover IP54

Code 316.	Diam. (mm)	Packages n. pz. per box
23.0860	45	100
23.1070	50	200
52.3350	55	72
52.3355	60	60

To enable the overpressure protection device to operate efficiently, it is necessary to leave a gap of at least 20 mm. above the element and use flexible leads for the connection.



## MODULO XD

### Three phase capacitors

**MODULO XD** capacitors are used for the fixed and automatic PFC systems in a wide range of industrial applications.


The three elements are housed in a plastic container which, together with the impregnating agents, assures dual insulation between the wound cores and metal enclosure.

To guarantee perfect filling during the resin impregnation process, the process itself is carried out prior to the elements being placed in the enclosure; in this way the distribution and uniformity of the impregnation can be subjected to a complete visual and dimensional inspection.

The overpressure protection system is specifically dimensioned so as to constantly ensure maximum safety in terms of ground protection and protection against the risk of arcing, even in conditions where there is a high energy density.

The characteristics of these capacitors are especially suitable for continuous duty under highly demanding conditions in harmonic rich environments.

#### General Characteristics

Power Range	1.5 ÷ 50 kVAr
Voltage range	230 ÷ 800 V
Rated frequency	50 Hz/60 Hz
Capacitance tolerance	-5 +10%
Duty	Continuous
Dielectric losses	≤ 0.2 W/kVAr
Life expectancy	≥ 110000h -25/D ≥ 130000h -25/C
Max dV/dt	100 V /μs
Temperature class	-25/D
Max overload In	4 x I <sub>n</sub>
Max inrush current	200 I <sub>n</sub>
Terminals	Screw clamps
Protection rating	IP20 (IP54 on request)
Internal connection	Delta
Discharge resistance	External (50 V after 60'')
Impregnating material	Eco-friendly resin
Altitude	≤ 4000 m s.l.m.
Storage Temperature	-40 +80 °C
Test voltage (AC) between terminals	2.15 Un x 2''
Test voltage between terminals and case	3kV x 10'' (UN≤660 V)
Standards	IEC 831 - 1/2
Approvals	 US Excluding Ø 125 mm

Un (V)	Qn (kVAr)	In (A)	C (μF)	DxH (mm)	Type	Pcs x box	Part n. 41646.	Dim. Box
240 (60Hz)	1.5	3.6	3x23	65x165	A	14	<b>0020</b>	E
	2.5	6	3x28	65x165	A	14	<b>0030</b>	E
	5	12	3x77	75x255	A	6	<b>0050</b>	F
	7.5	18	3x115	85x255	A	6	<b>0080</b>	F
	10	24	3x154	100x255	A	6	<b>0100</b>	G
	12.5	30	3x192	100x255	A	6	<b>0150</b>	H
	15	36	3x230	116x255	A	6	<b>0200</b>	H
400	1.5	2.2	3x9.9	65x165	A	14	<b>1020</b>	E
	2.5	3.6	3x17	65x165	A	14	<b>1030</b>	E
	5	7.2	3x33	75x165	A	6	<b>1050</b>	C
	7.5	10.8	3x50	75x255	A	6	<b>1080</b>	F
	10	14.4	3x66	75x255	A	6	<b>1100</b>	F
	12.5	18.0	3x83	85x255	A	6	<b>1150</b>	F
	15	21.7	3x99	90x255	A	6	<b>1200</b>	F
	20	28.9	3x133	100x255	A	6	<b>1260</b>	G
	25	36.1	3x166	116x255	A	4	<b>1310</b>	H
	30	43.3	3x199	116x290	A	4	<b>1360</b>	H
	40	57.7	3x265	116x370	A	4	<b>1370</b>	I
	45	65	3x298	125x370	B	4	<b>1375</b>	I
50	72.2	3x332	125x370	B	4	<b>1380</b>	I	
415	1.5	2.1	3x9.2	65x165	A	14	<b>2020</b>	E
	2.5	3.5	3x15	65x165	A	14	<b>2030</b>	E
	5	7.0	3x31	75x165	A	6	<b>2050</b>	C
	7.5	10.4	3x46	75x255	A	6	<b>2080</b>	F
	10	13.9	3x62	75x255	A	6	<b>2100</b>	F
	12	17.4	3x77	85x255	A	6	<b>2150</b>	F
	15	20.9	3x92	90x255	A	6	<b>2200</b>	F
	20	27.8	3x123	100x255	A	6	<b>2260</b>	G
	25	34.8	3x154	116x255	A	4	<b>2310</b>	H
	30	41.7	3x185	116x290	A	4	<b>2360</b>	H
	40	55.6	3x246	116x370	A	4	<b>2370</b>	I
	45	62.6	3x277	116x370	A	4	<b>2375</b>	I
50	69.6	3x308	125x370	B	4	<b>2380</b>	I	

Standard box dimensions: C= 190x285x325 mm G= 225x340x270 mm  
E= 195x390x255 mm H= 330x340x225 mm F= 185x290x270 mm  
I= 270x270x450 mm  
Weight: 10+12 kg

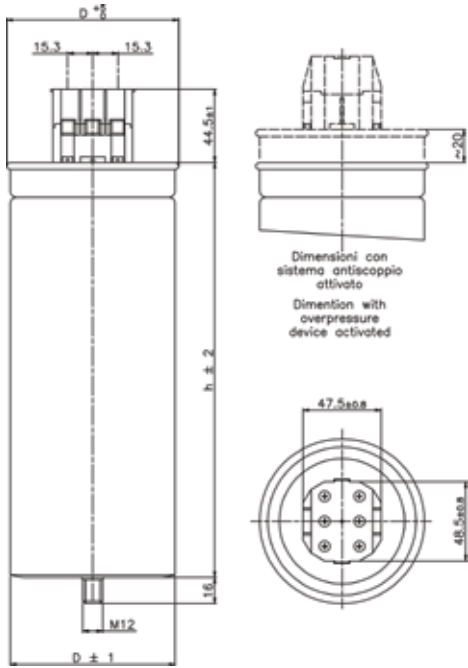




## MODULO XD

### Three phase capacitors

#### TECHNICAL DRAWING TYPE A



Un (V)	Qn (kVAr)	In (A)	Cn (µF)	DxH (mm)	Type	Pcs x box	Part n. 41646.	Dim. Box
440	1.5	2	3x8.2	65x165	A	14	<b>3023</b>	E
	2.5	3.3	3x14	65x165	A	14	<b>3033</b>	E
	5	6.6	3x27	75x165	A	6	<b>3053</b>	C
	7.5	9.8	3x41	75x255	A	6	<b>3083</b>	F
	10	13.1	3x55	75x255	A	6	<b>3103</b>	F
	12.5	16.4	3x69	85x255	A	6	<b>3153</b>	F
	15	19.7	3x82	90x255	A	6	<b>3203</b>	F
	20	26.2	3x110	100x255	A	6	<b>3263</b>	G
	25	32.8	3x137	116x255	A	4	<b>3313</b>	H
	30	39.4	3x164	116x290	A	4	<b>3363</b>	H
	40	52.5	3x219	116x370	A	4	<b>3373</b>	I
45	59.0	3x247	116x370	A	4	<b>3378</b>	I	
50	65.6	3x274	125x370	A	4	<b>3383</b>	I	
450	1.5	1.9	3x7.9	65x165	A	14	<b>3020</b>	E
	2.5	3.2	3x13	65x165	A	14	<b>3030</b>	E
	5	6.4	3x26	75x165	A	6	<b>3050</b>	C
	7.5	9.6	3x39	75x255	A	6	<b>3080</b>	F
	10	12.8	3x52	75x255	A	6	<b>3100</b>	F
	12.5	16.0	3x65	85x255	A	6	<b>3150</b>	F
	15	19.2	3x79	90x255	A	6	<b>3200</b>	F
	20	25.7	3x105	100x255	A	6	<b>3260</b>	G
	25	32.1	3x131	116x255	A	4	<b>3310</b>	H
	30	38.5	3x157	116x290	A	4	<b>3360</b>	H
	40	51.3	3x210	116x370	A	4	<b>3370</b>	I
45	57.7	3x236	116x370	A	4	<b>3375</b>	I	
50	64.2	3x262	125x370	A	4	<b>3380</b>	I	
500	1.5	1.7	3x6.4	65x165	A	14	<b>4020</b>	E
	2.5	2.9	3x11	65x165	A	14	<b>4030</b>	E
	5	5.8	3x21	75x165	A	6	<b>4050</b>	C
	7.5	8.7	3x32	75x255	A	6	<b>4080</b>	F
	10	11.5	3x42	75x255	A	6	<b>4100</b>	F
	12.5	14.4	3x53	85x255	A	6	<b>4150</b>	F
	15	17.3	3x64	90x255	A	6	<b>4200</b>	F
	20	23.1	3x85	100x255	A	6	<b>4260</b>	G
	25	28.9	3x106	116x255	A	4	<b>4310</b>	H
	30	34.6	3x127	116x290	A	4	<b>4360</b>	H
	40	46.2	3x170	116x370	A	4	<b>4370</b>	I
45	52.0	3x191	116x370	A	4	<b>4375</b>	I	
50	57.7	3x212	125x370	A	4	<b>4380</b>	I	

Terminals and stud	Fixing torque
Screw terminals	1.5 Nm
M10**	6 Nm
M12	10 Nm

(\*\*) Complete the tightening using two wrenches.

Standard box dimensions:  
C= 190x285x325 mm G= 225x340x270 mm E= 195x390x255 mm H= 330x340x225 mm  
F= 185x290x270 mm I= 270x270x450 mm

Weight: 10÷12 kg



Un (V)	Qn (kVAr)	In (A)	Cn (µF)	DxH (mm)	Type	Pcs x box	Part n. 41646.	Dim. Box
525	10	11	3x38	85x255	A	6	<b>5130</b>	F
	12.5	13.7	3x48	85x255	A	6	<b>5170</b>	F
	15	16.5	3x58	100x255	A	6	<b>5230</b>	G
	20	22	3x77	116x255	A	4	<b>5270</b>	H
	25	27.5	3x96	116x255	A	4	<b>5330</b>	H
	30	33	3x115	116x290	A	4	<b>5370</b>	H
	40	44	3x154	116x370	A	4	<b>5373</b>	I
	45	49.5	3x173	116x370	A	4	<b>5377</b>	I
50	55	3x192	125x370	A	4	<b>5385</b>	I	
550	1.5	1.6	3x5.3	65x165	A	14	<b>5020</b>	E
	2.5	2.6	3x8.8	65x165	A	14	<b>5030</b>	E
	5	5.2	3x18	75x165	A	6	<b>5050</b>	C
	7.5	7.9	3x26	75x255	A	6	<b>5080</b>	F
	10	10.5	3x35	75x255	A	6	<b>5100</b>	F
	12.5	13.1	3x44	85x255	A	6	<b>5150</b>	F
	15	15.7	3x53	90x255	A	6	<b>5200</b>	F
	20	21	3x70	100x255	A	6	<b>5260</b>	G
	25	26.2	3x88	116x255	A	4	<b>5310</b>	H
	30	31.5	3x105	116x290	A	4	<b>5360</b>	H
	40	42	3x140	116x370	A	4	<b>5372</b>	I
45	47.2	3x158	116x370	A	4	<b>5375</b>	I	
50	52.5	3x175	125x370	A	4	<b>5380</b>	I	
690 (*)	10	8.4	3x22	75x255	A	6	<b>6100</b>	F
	12.5	10.5	3x28	85x255	A	6	<b>6150</b>	F
	15	12.6	3x33	90x255	A	6	<b>6200</b>	F
	20	16.7	3x45	100x255	A	6	<b>6260</b>	G
	25	20.9	3x56	116x255	A	4	<b>6310</b>	H
	30	25.1	3x67	116x290	A	4	<b>6360</b>	H
	40	33.5	3x89	116x370	A	4	<b>6370</b>	I
	45	37.7	3x100	116x370	A	4	<b>6375</b>	I
50	41.8	3x111	125x370	A	4	<b>6380</b>	I	
800 (*)	10	7.2	3x17	75x255	A	6	<b>8100</b>	F
	12.5	9.0	3x21	85x255	A	6	<b>8150</b>	F
	15	10.8	3x25	90x255	A	6	<b>8200</b>	F
	20	14.4	3x33	100x255	A	6	<b>8260</b>	G
	25	18.0	3x41	116x255	A	4	<b>8310</b>	H
	30	21.7	3x50	116x290	A	4	<b>8360</b>	H
	40	28.9	3x66	116x370	A	4	<b>8370</b>	I
	45	32.5	3x75	116x370	A	4	<b>8375</b>	I
50	36.1	3x83	125x370	A	4	<b>8380</b>	I	

(\*) Without discharge resistance.

Standard box dimensions:

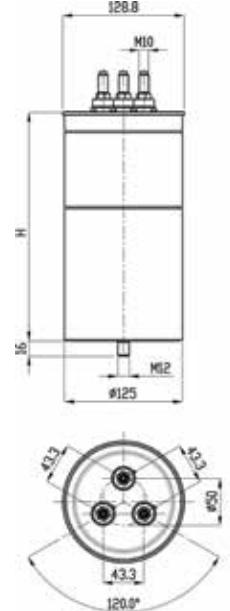
C= 190x285x325 mm G= 225x340x270 mm E= 195x390x255 mm H= 330x340x225 mm

F= 185x290x270 mm I= 270x270x450 mm

Weight: 10 ÷ 12 kg

To enable the overpressure protection device to operate efficiently, it is necessary to leave a gap of at least 30 mm. above the element and use flexible leads for the connection.

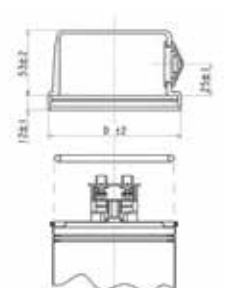
TECHNICAL DRAWING TYPE B



Terminals and stud	Fixing torque
Screw terminals	1.5 Nm
M10**	6 Nm**
M12 stud	10 Nm

(\*\*) Complete the tightening using two wrenches.

Terminal cover IP54



Code	Diam. (mm)	Packages n. pz. per box
316.52		
.3338	85	30
.3339	90	30
.3340	100	30
.3341	116	30



## MODULO XD MINI

Three phase capacitors

**MODULO XD Mini** – COMPACT PERFORMANCE capacitors integrate the excellent MODULO XD technology with an innovative mechanical construction, which has been optimized for the 0,5 ÷ 10 kVAr/400 ÷ 550 V power/voltage ranges. Thanks to their mechanical construction and a particularly effective dry-resin impregnation process, **MODULO XD mini** capacitors deliver excellent performance in a very compact package. The faston connections, integrated discharge resistors and IP20 protection cap simplify their installation and maintenance in every type of application.



### General Characteristics

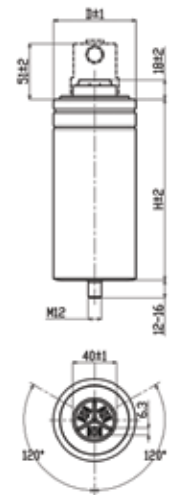
Power Range	0.5 ÷ 10 kVAr
Voltage range	400 ÷ 550 V
Rated frequency	50 Hz/60 Hz
Capacitance tolerance	-5 +10%
Duty	Continuous
Dielectric losses	≤ 0.2 W/kVAr
Life expectancy	≥ 110000h -25/D ≥ 130000h -25/C
Max dV/dt	100 V /μs
Temperature class	-25/D
Max overload I <sub>n</sub>	3 x I <sub>n</sub>
Max inrush current	200 I <sub>n</sub>
Terminals	Faston 6.3x0.8 mm
Protection rating	IP20 (with included protection cap)
Internal connection	Delta
Discharge resistance	Internal (50 V after 60")
Impregnating material	Eco-friendly resin
Altitude	≤ 4000 m s.l.m.
Storage Temperature	-40 +80 °C
Test voltage (AC) between terminals	2.15 U <sub>n</sub> x 2"
Test voltage between terminals and case	3 kV x 10"
Standards	IEC 831 - 1/2





Un (V)	Qn (kVAr) 50 Hz	In (A)	Cn (µF)	DxH (mm)	Pcs x box	Part n. 416.12.	Dim. Box
400	0.5	0.7	3x3.32	50x150	21	<b>1010</b>	E
	1	1.4	3x6.63	50x150	21	<b>1020</b>	E
	1.5	2.2	3x9.95	50x150	21	<b>1040</b>	E
	2.5	3.6	3x16.6	60x150	18	<b>1060</b>	E
	5	7.2	3x33.2	75x175	6	<b>1130</b>	C
	7.5	10.8	3x49.7	75x265	12	<b>1150</b>	D
	10	14.4	3x66.3	75x265	12	<b>1170</b>	D
415	0.5	0.7	3x3.08	50x150	21	<b>2010</b>	E
	1	1.4	3x6.16	50x150	21	<b>2020</b>	E
	1.5	2.1	3x9.24	50x150	21	<b>2040</b>	E
	2.5	3.5	3x15.4	60x150	18	<b>2060</b>	E
	5	7.0	3x30.8	75x175	6	<b>2130</b>	C
	7.5	10.4	3x46.2	75x265	12	<b>2150</b>	D
	10	13.9	3x61.6	75x265	12	<b>2170</b>	D
440	0.5	0.7	3x2.74	50x150	21	<b>3010</b>	E
	1	1.3	3x5.48	50x150	21	<b>3020</b>	E
	1.5	2.0	3x8.22	50x150	21	<b>3040</b>	E
	2.5	3.3	3x13.7	60x150	18	<b>3060</b>	E
	5	6.6	3x27.4	75x175	6	<b>3130</b>	C
	7.5	9.8	3x41.1	75x265	12	<b>3150</b>	D
	10	13.1	3x54.8	75x265	12	<b>3170</b>	D
450	0.5	0.6	3x2.62	50x150	21	<b>4010</b>	E
	1	1.3	3x5.24	50x150	21	<b>4020</b>	E
	1.5	1.9	3x7.86	50x150	21	<b>4040</b>	E
	2.5	3.2	3x13.1	60x150	18	<b>4060</b>	E
	5	6.4	3x26.2	75x175	6	<b>4130</b>	C
	7.5	9.6	3x39.3	75x265	12	<b>4150</b>	D
	10	12.8	3x52.4	75x265	12	<b>4170</b>	D
525	0.5	0.6	3x1.92	50x150	21	<b>5010</b>	E
	1	1.3	3x3.85	50x150	21	<b>5020</b>	E
	1.5	1.9	3x5.77	50x150	21	<b>5040</b>	E
	2.5	3.2	3x9.62	60x150	18	<b>5060</b>	E
	5	6.4	3x19.2	75x175	6	<b>5130</b>	C
	7.5	9.6	3x28.9	75x265	12	<b>5150</b>	D
	10	12.8	3x38.5	75x265	12	<b>5170</b>	D
550	0.5	0.6	3x1.75	50x150	21	<b>6010</b>	E
	1	1.3	3x3.51	50x150	21	<b>6020</b>	E
	1.5	1.9	3x5.26	50x150	21	<b>6040</b>	E
	2.5	3.2	3x8.77	60x150	18	<b>6060</b>	E
	5	6.4	3x17.5	75x175	6	<b>6130</b>	C
	7.5	9.6	3x26.3	75x265	12	<b>6150</b>	D
	10	12.8	3x35.1	75x265	12	<b>6170</b>	D

TECHNICAL DRAWING



Terminals and stud	Fixing torque
Screw terminals	1.5 Nm
M12	11 Nm

Standard box dimensions: C= 190x285x325 mm D= 250x360x345 mm E= 195x390x255 mm.

To enable the overpressure protection device to operate efficiently, it is necessary to leave a gap of at least 30 mm. above the element and use flexible leads for the connection.



## DUCATI F50 MONO Long Life 4I<sub>N</sub>

*Three phase capacitors*

The modular design of **DUCATI F50** units makes them especially suitable for fixed transformer power factor correction systems and local power factor correction of motors. The **DUCATI F50** three-phase capacitor consists of 3

delta connected single-phase capacitors of the **MONO Long Life 4I<sub>N</sub>** series.

### General Characteristics

Power Range	5 ÷ 60 kVAr
Voltage range	415 ÷ 525 V
Rated frequency	50 Hz/60 Hz
Capacitance tolerance	-5 +10%
Duty	Continuous
Dielectric losses	≤ 0.2 W/kVAr
Life expectancy <sup>a</sup>	≥ 110000h -25/D ≥ 130000h -25/C
Max dV/dt	≤ 100 V / μs
Temperature class	-25/D
Max overload I <sub>n</sub>	4 x I <sub>n</sub>
Max inrush current	≤ 200 I <sub>n</sub>
Terminals	Pins 3 x M8
Protection rating	IP40
Connection	Delta
Discharge resistance	Internal (50 V after 60'')
External case material	Insulating V2 class
Altitude	≤ 2000 m s.l.m.
Test voltage (AC) between terminals	2.15 U <sub>n</sub> x 2''
Test voltage between terminals and case	3 kV x 10''
Standards	EN 60831 – 1/2

U <sub>n</sub> (V)	Q <sub>n</sub> (kVAr)	Q (400 V) (kVAr)	I <sub>n</sub> (A)	C <sub>n</sub> (μF)	L (mm)	Part n. 415.04.	
415	5	4.7	7.0	3x31	79 (1)	<b>7010</b>	
	10	9.3	3.9	3x62	79 (1)	<b>7015</b>	
	12.5	11.6	17.4	3x77	79 (1)	<b>7018</b>	
	15	13.9	20.9	3x92	79 (1)	<b>7020</b>	
	20	18.6	27.9	3x123	79 (1)	<b>7025</b>	
	25	23.2	34.8	3x154	148 (2)	<b>7030</b>	
	30	27.9	41.8	3x185	148 (2)	<b>7035</b>	
450	40	37.2	55.7	3x247	148 (2)	<b>7040</b>	
	50	46.7	69.6	3x308	217 (3)	<b>7045</b>	
	525	5	4.0	6.4	3x26	79 (1)	<b>7110</b>
		10	7.9	12.8	3x52	79 (1)	<b>7115</b>
		12.5	9.9	16.1	3x66	79 (1)	<b>7118</b>
		15	11.9	19.3	3x79	79 (1)	<b>7120</b>
		20	15.8	25.7	3x105	79 (1)	<b>7125</b>
25		19.8	32.1	3x131	148 (2)	<b>7130</b>	
30		23.7	38.5	3x157	148 (2)	<b>7135</b>	
525	40	31.6	51.4	3x210	148 (2)	<b>7140</b>	
	50	39.5	64.2	3x262	217 (3)	<b>7145</b>	
	525	5	2.9	5.5	3x19	79 (1)	<b>7210</b>
		10	5.8	11.0	3x39	79 (1)	<b>7215</b>
		12.5	7.3	13.8	3x48	79 (1)	<b>7218</b>
		15	8.7	16.5	3x58	79 (1)	<b>7220</b>
		20	11.6	22.0	3x77	79 (1)	<b>7225</b>
25		14.5	27.5	3x96	148 (2)	<b>7230</b>	
30		17.4	33.0	3x116	148 (2)	<b>7235</b>	
525	40	23.2	44.0	3x154	148 (2)	<b>7240</b>	
	50	29.0	50.1	3x193	217 (3)	<b>7245</b>	
	60	34.8	66.1	3x231	217 (3)	<b>7250</b>	

### TECHNICAL DRAWING F50

