CAPACITORS

GRUPPO ENERGIA

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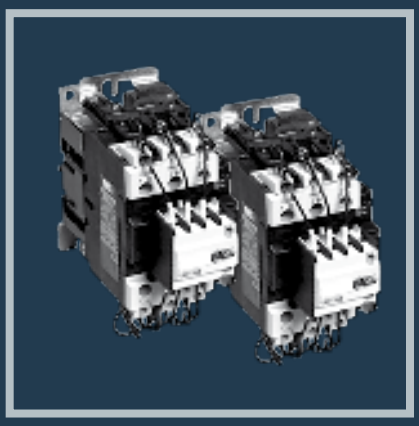
Power Factor Correction Capacitors and Components

LV



MADE IN ITALY

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Power Factor Correction Capacitors
Three Phase

Gruppo Energia Capacitors Family

INTACT BASE (Standard): RCM-INB-3: designed to be used in standard conditions, where there are no significant non-linear loads.
NLL<10%

INTACT PLUS (Heavy Duty) RCM-INP-3: these capacitors function optimally also in difficult conditions, since they are resistant to voltage overloads and to a limited quantity of non-linear loads.
NLL<20%

INTACT AllPOWER (Extra Heavy Duty) RCM-INA-3: highly reliable, these capacitors can operate in harsh environments. They are resistant to a significant quantity of non-linear loads and to high overloads in current and voltage.
Intact AllPower capacitors are also resistant to high temperatures.
NLL<25%.

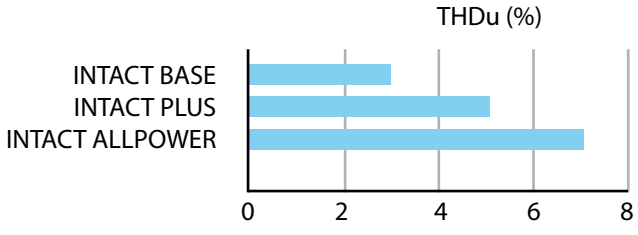
Important Notice:

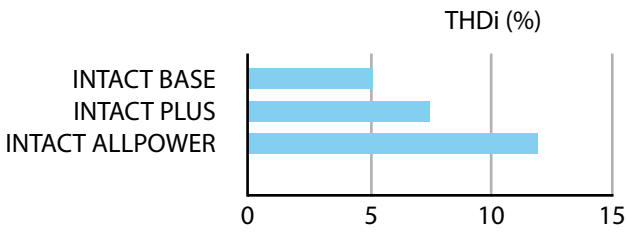
In order to choose the suitable capacitor family correctly, it is highly recommended to determine the harmonic level in your electrical network and to analyze the loads in detail.
An incorrect choice of capacitors may lead to malfunctions and shortening of the product lifespan.

Capacitor Selection Table

Capacitor Family	Type	Applications	Max. Conditions
Intact Base RCM - INB - 3	Standard Capacitor	• Networks with non-significant non-linear loads • Standard overcurrent • Standard operating temperature • Standard switching frequency • Standard life expectancy	• NLL< 10% • 1,5 In • -40 °C /+55 °C • 5000 / year • Up to 100000 h*
Intact Plus RCM - INP - 3	Heavy Duty Capacitor	• Few non-linear loads • Significant overcurrent • Standard operating temperature • Moderate switching frequency • Long life expectancy	• NLL< 20% • 1,8 In • -40 °C /+55 °C • 7000 / year • Up to 160000 h*
Intact AllPower RCM - INA - 3	Extra Heavy Duty Capacitor	• High amount of non-linear loads (up to 25%) • Significant overcurrent • Extreme temperature conditions • High switching frequency • Extra-long life expectancy	• NLL< 25% • 2,5 In • - 45 °C /+60 °C • 10000 / year • Up to 180000 h*

Selection of THDu (%) & THDi (%) level





* The maximum life expectancy is given considering standard operating conditions as rated voltage (Un), rated current (In), 35 °C ambient temperature.
* Attention: The life expectancy will be reduced if capacitors are used at maximum working conditions.

SELECTION OF CAPACITORS ACCORDING TO THE AMOUNT OF NLL AND THD LEVELS

Capacitors are very sensitive to non-linear loads and in particular to voltage and current harmonics.

Since harmonics are caused by non-linear loads, an indicator of their magnitude is the proportion between the total power of non-linear loads and the power supply transformer rating.

This ratio is called NLL and must be measured carefully.

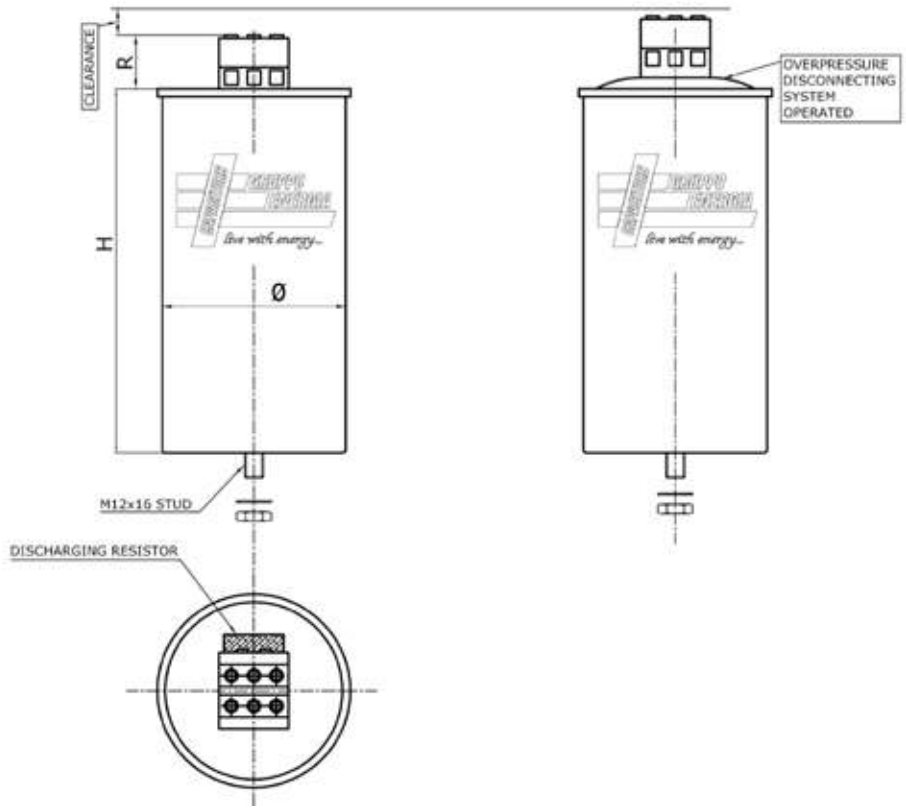
$$N_{LL} = \frac{Total\ Power\ of\ Non-Linear\ Loads}{Instaled\ Transformer\ Rating}$$

It is recommended to use detuned reactors with harmonic rated capacitors for NLL > 20% and up to 50%.

IMPORTANT NOTICE:

NLL are an important parameter to take into account when selecting capacitors.
However, this parameter is not sufficient since harmonics in grid may also cause current amplification.
Current amplification can only be detected by an in-depth analysis of the grid.

CONSTRUCTION DIAGRAM



CASE

- Expansion: Maximum 12 mm.
- Clearance: Minimum 15 mm.

MOUNTING

- M12 threaded bolt
- Tightening torque: T= 10 Nm.
- Toothed washer: DIN 6789.
- Hexagonal nut: DIN 439.

TERMINALS

- Finger-proof terminal: Yes.
- **MT 16**
  - For 16 sq mm cable.
  - M4 terminal screw.
  - Tightening torque: T= 1,3 Nm
  - R = 33 ±2
- **MT 25**
  - For 25 sq mm cable.
  - M5 terminal screw.
  - Tightening torque: T= 2,5 Nm
  - R = 33 ±2
- **MT 35**
  - For 35 sq mm cable.
  - M6 terminal screw.
  - Tightening torque: T= 3,0 Nm
  - R = 43 ±2

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INTACT BASE - STANDARD
CAPACITORS NLL <10%

TECHNICAL SPECIFICATION INTACT BASE RCM-INB

General	
Standards:	IEC 60831-1:2014, UL810, VDE 0560-46:2014-11
Origin:	100% made in Italy
Voltage range:	220 V to 1000 V
Frequency:	50 Hz / 60 Hz
Power range:	1 kVar to 62,5 kVar
Dielectric losses:	< 0,2 W/kVar
Total losses:	< 0,5 W/kVar
Capacitance tolerance:	± 5%
Voltage test between terminals:	2,15 Un, 50 Hz, 10 seconds (routine test)
Voltage test between terminals:	3,00 Un, 50 Hz, 60 seconds (type test)
Voltage test terminal / case:	≤ 525 V 3000 V, 50 Hz for 10 seconds or > 525 V 3660 V, 50 Hz for 10 seconds
Insulation level:	3 / 8 kV
External discharge resistor:	50 V in 1 min. 1 kVar - 30 kVar or 75 V in 3 min. 30,5 kVar - 62,5 kVar
Cooling:	Natural air or forced ventilation
Operating Conditions	
Ambient temperature:	-40 °C / 55 °C
Humidity:	up to 95%
Altitude above sea level:	2000 m.
Overvoltage:	Un+10% for 8 hrs. daily Un+15% for 30 min. daily Un+20% for 5 min. daily Un+30% for 1 min. daily
Overcurrent*:	up to 1,5 x In (Including Harmonics)
Inrush current:	up to 180 x In
Service life:	up to 100.000 hrs.
Harmonic presence:	NLL < 10%
Safety Features	
Safety:	Overpressure disconnector on 3 phase + Incorporated fuses + Self-healing + Discharge resistor
Protection degree:	IP20
Construction	
Casing:	Sealed metal (aluminum) enclosure
Dielectric:	Al/Zn slope metalized polypropylene film, wave-cut
Filling:	Gel-type polyurethane resin, Non-PCB
Installation	
Mounting position:	Preferably vertical for a better cooling
Fastening & Earthing:	Through 1 point, screw M12 at the bottom

* This maximum value may vary with each capacitor.

Scan this QR code to download the complete catalogue.

3 Phase RCM-INB Capacitors - 400 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A400INB16(X)	1,25	8,3	1,8	MT 16	75x185
3PF2,5A400INB16(X)	2,5	16,6	3,6	MT 16	75x185
3PF5A400INB16(X)	5	33,2	7,2	MT 16	75x185
3PF6,25A400INB16(X)	6,25	41,4	9,0	MT 16	75x185
3PF7,5A400INB16(X)	7,5	49,7	10,8	MT 16	85x185
3PF10A400INB16(X)	10	66,3	14,4	MT 16	75x260
3PF12,5A400INB16(X)	12,5	82,9	18,0	MT 16	75x260
3PF15A400INB16(X)	15	99,5	21,7	MT 16	85x260
3PF20A400INB25(X)	20	132,6	28,9	MT 25	100x260
3PF25A400INB25(X)	25	165,8	36,1	MT 25	100x285
3PF30A400INB25(X)	30	198,9	43,3	MT 25	116x285
3PF33,3A400INB25(X)	33,3	220,8	48,1	MT 25	116x285
3PF40A400INB25(X)	40	265,3	57,7	MT 25	136x300
3PF50A400INB35(X)	50	331,6	72,2	MT 35	136x300
3PF62,5A400INB35(X)	62,5	414,5	90,2	MT 35	136x375

3 Phase RCM-INB Capacitors - 415 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A415INB16(X)	1,25	7,7	1,7	MT 16	75x185
3PF2,5A415INB16(X)	2,5	15,4	3,5	MT 16	75x185
3PF5A415INB16(X)	5	30,8	7,0	MT 16	75x185
3PF6,25A415INB16(X)	6,25	38,5	8,7	MT 16	75x185
3PF7,5A415INB16(X)	7,5	46,2	10,4	MT 16	75x185
3PF10A415INB16(X)	10	61,6	13,9	MT 16	85x185
3PF12,5A415INB16(X)	12,5	77,0	17,4	MT 16	85x225
3PF15A415INB16(X)	15	92,4	20,9	MT 16	85x260
3PF20A415INB25(X)	20	123,2	27,8	MT 25	85x285
3PF25A415INB25(X)	25	154,0	34,8	MT 25	100x260
3PF30A415INB25(X)	30	184,8	41,7	MT 25	100x285
3PF33,3A415INB25(X)	33,3	205,2	46,3	MT 25	116x285
3PF40A415INB25(X)	40	246,4	55,6	MT 25	136x300
3PF50A415INB35(X)	50	308,0	69,6	MT 35	136x300
3PF62,5A415INB35(X)	62,5	385,0	87,0	MT 35	136x375

3 Phase RCM-INB Capacitors - 440 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A440INB16(X)	1,25	6,9	1,6	MT 16	75 x 185
3PF2,5A440INB16(X)	2,5	13,7	3,3	MT 16	75 x 185
3PF5A440INB16(X)	5	27,4	6,6	MT 16	75 x 185
3PF5,6A440INB16(X)	5,6	30,7	7,3	MT 16	75 x 185
3PF6,25A440INB16(X)	6,25	34,3	8,2	MT 16	75 x 185
3PF7A440INB16(X)	7	38,4	9,2	MT 16	75 x 185
3PF7,5A440INB16(X)	7,5	41,1	9,8	MT 16	85 x 185
3PF10A440INB16(X)	10	54,8	13,1	MT 16	85 x 225
3PF11,3A440INB16(X)	11,3	61,9	14,8	MT 16	85 x 225
3PF12,5A440INB16(X)	12,5	68,5	16,4	MT 16	85 x 225
3PF14,1A440INB16(X)	14,1	77,3	18,5	MT 16	85 x 260
3PF15A440INB16(X)	15	82,2	19,7	MT 16	85 x 260
3PF20A440INB25(X)	20	109,6	26,2	MT 25	85 x 285
3PF22,5A440INB25(X)	22,5	123,3	29,5	MT 25	100 x 260
3PF25A440INB25(X)	25	137,0	32,8	MT 25	100 x 260
3PF28,1A440INB25(X)	28,1	154,0	36,9	MT 25	100 x 285
3PF30A440INB25(X)	30	164,4	39,4	MT 25	100 x 285
3PF33,3A440INB25(X)	33,3	182,5	43,7	MT 25	116 x 285
3PF40A440INB25(X)	40	219,2	52,5	MT 25	136 x 300
3PF50A440INB35(X)	50	274,0	65,6	MT 35	136 x 300
3PF62,5A440INB35(X)	62,5	342,5	82,0	MT 35	136 x 375

3 Phase RCM-INB Capacitors - 480 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A480INB16(X)	1,25	5,8	1,5	MT 16	75 x 185
3PF2,5A480INB16(X)	2,5	11,5	3,0	MT 16	75 x 185
3PF5A480INB16(X)	5	23,0	6,0	MT 16	75 x 185
3PF6,25A480INB16(X)	6,25	28,8	7,5	MT 16	75 x 185
3PF6,7A480INB16(X)	6,7	30,9	8,1	MT 16	85 x 185
3PF7,5A480INB16(X)	7,5	34,5	9,0	MT 16	85 x 185
3PF8,4A480INB16(X)	8,4	38,7	10,1	MT 16	85 x 185
3PF10A480INB16(X)	10	46,1	12,0	MT 16	75 x 260
3PF12,5A480INB16(X)	12,5	57,6	15,0	MT 16	85 x 285
3PF13,4A480INB16(X)	13,4	61,7	16,1	MT 16	85 x 285
3PF15A480INB16(X)	15	69,1	18,0	MT 16	85 x 285
3PF16,7A480INB16(X)	16,7	76,9	20,1	MT 16	85 x 285
3PF20A480INB25(X)	20	92,1	24,1	MT 25	100 x 260
3PF25A480INB25(X)	25	115,1	30,1	MT 25	100 x 285
3PF26,8A480INB25(X)	26,8	123,4	32,2	MT 25	100 x 285
3PF30A480INB25(X)	30	138,2	36,1	MT 25	116 x 285
3PF33,3A480INB25(X)	33,3	153,4	40,1	MT 25	116 x 285
3PF33,5A480INB25(X)	33,5	154,3	40,3	MT 25	116 x 285
3PF40A480INB25(X)	40	184,2	48,1	MT 25	136 x 300
3PF50A480INB35(X)	50	230,3	60,1	MT 35	136 x 300
3PF62,5A480INB35(X)	62,5	287,8	75,2	MT 35	136 x 375

3 Phase RCM-INB Capacitors - 525 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A525INB16(X)	1,25	4,8	1,4	MT 16	75 x 185
3PF2,5A525INB16(X)	2,5	9,6	2,7	MT 16	75 x 185
3PF5A525INB16(X)	5	19,2	5,5	MT 16	75 x 185
3PF6,25A525INB16(X)	6,25	24,1	6,9	MT 16	75 x 185
3PF7,4A525INB16(X)	7,4	28,5	8,1	MT 16	75 x 185
3PF7,5A525INB16(X)	7,5	28,9	8,2	MT 16	75 x 185
3PF9,3A525INB16(X)	9,3	35,8	10,2	MT 16	85 x 185
3PF10A525INB16(X)	10	38,5	11,0	MT 16	85 x 185
3PF12,5A525INB16(X)	12,5	48,1	13,7	MT 16	75 x 260
3PF14,8A525INB16(X)	14,8	57,0	16,3	MT 16	85 x 260
3PF15A525INB16(X)	15	57,7	16,5	MT 16	85 x 260
3PF18,5A525INB16(X)	18,5	71,2	20,3	MT 16	85 x 285
3PF20A525INB25(X)	20	77,0	22,0	MT 25	100 x 260
3PF25A525INB25(X)	25	96,2	27,5	MT 25	100 x 260
3PF29,6A525INB25(X)	29,6	113,9	32,6	MT 25	100 x 285
3PF30A525INB25(X)	30	115,5	33,0	MT 25	100 x 285
3PF33,3A525INB25(X)	33,3	128,2	36,6	MT 25	116 x 285
3PF37A525INB25(X)	37	142,4	40,7	MT 25	116 x 285
3PF40A525INB25(X)	40	154,0	44,0	MT 25	116 x 285
3PF50A525INB35(X)	50	192,5	55,0	MT 35	136 x 300
3PF62,5A525INB35(X)	62,5	240,6	68,7	MT 35	136 x 300

3 Phase RCM-INB Capacitors - 690 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF5A690INB16(X)	5	11,1	4,2	MT 16	85 x 185
3PF6,25A690INB16(X)	6,25	13,9	5,2	MT 16	75 x 260
3PF7,5A690INB16(X)	7,5	16,7	6,3	MT 16	75 x 260
3PF10A690INB16(X)	10	22,3	8,4	MT 16	85 x 260
3PF12,5A690INB16(X)	12,5	27,9	10,5	MT 16	85 x 285
3PF15A690INB25(X)	15	33,4	12,6	MT 25	100 x 260
3PF20A690INB25(X)	20	44,6	16,7	MT 25	100 x 285
3PF25A690INB25(X)	25	55,7	20,9	MT 25	116 x 285
3PF30A690INB25(X)	30	66,9	25,1	MT 25	136 x 300
3PF40A690INB25(X)	40	89,1	33,5	MT 25	136 x 300
3PF50A690INB35(X)	50	111,4	41,8	MT 35	136 x 375

3 Phase RCM-INB Capacitors - 780 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF12,5A780INB16(X)	12,5	21,8	9,3	MT 16	85 x 285
3PF20A780INB25(X)	20	34,9	14,8	MT 25	116 x 285
3PF25A780INB25(X)	25	43,6	18,5	MT 25	116 x 285
3PF40A780INB25(X)	40	69,8	29,6	MT 25	136 x 375
3PF50A780INB35(X)	50	87,2	37,0	MT 35	136 x 375

* The last alphanumeric symbol is supplied at the time of order by Gruppo Energia once the desired capacitor size has been selected.
** All dimensions will be confirmed at the time of order.

3 Phase RCM-INB Capacitors - 400 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B400INB16(X)	1,25	6,9	1,8	MT 16	75 x 185
3PF2,5B400INB16(X)	2,5	13,8	3,6	MT 16	75 x 185
3PF5B400INB16(X)	5	27,6	7,2	MT 16	75 x 185
3PF6,25B400INB16(X)	6,25	34,5	9,0	MT 16	75 x 185
3PF7,5B400INB16(X)	7,5	41,4	10,8	MT 16	75 x 185
3PF10B400INB16(X)	10	55,3	14,4	MT 16	85 x 185
3PF12,5B400INB16(X)	12,5	69,1	18,0	MT 16	75 x 260
3PF15B400INB16(X)	15	82,9	21,7	MT 16	85 x 225
3PF20B400INB25(X)	20	110,5	28,9	MT 25	100 x 225
3PF25B400INB25(X)	25	138,2	36,1	MT 25	100 x 260
3PF30B400INB25(X)	30	165,8	43,3	MT 25	100 x 285
3PF33,3B400INB25(X)	33,3	184,0	48,1	MT 25	100 x 285
3PF40B400INB25(X)	40	221,0	57,7	MT 25	116 x 285
3PF50B400INB35(X)	50	276,3	72,2	MT 35	136 x 300
3PF62,5B400INB35(X)	62,5	345,4	90,2	MT 35	136 x 375

3 Phase RCM-INB Capacitors - 415 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B415INB16(X)	1,25	6,4	1,7	MT 16	75 x 185
3PF2,5B415INB16(X)	2,5	12,8	3,5	MT 16	75 x 185
3PF5B415INB16(X)	5	25,7	7,0	MT 16	75 x 185
3PF6,25B415INB16(X)	6,25	32,1	8,7	MT 16	75 x 185
3PF7,5B415INB16(X)	7,5	38,5	10,4	MT 16	75 x 185
3PF10B415INB16(X)	10	51,3	13,9	MT 16	85 x 185
3PF12,5B415INB16(X)	12,5	64,2	17,4	MT 16	75 x 260
3PF15B415INB16(X)	15	77,0	20,9	MT 16	75 x 260
3PF20B415INB25(X)	20	102,7	27,8	MT 25	85 x 260
3PF25B415INB25(X)	25	128,3	34,8	MT 25	100 x 260
3PF30B415INB25(X)	30	154,0	41,7	MT 25	100 x 260
3PF33,3B415INB25(X)	33,3	171,0	46,3	MT 25	100 x 285
3PF40B415INB25(X)	40	205,4	55,6	MT 25	116 x 285
3PF50B415INB35(X)	50	256,7	69,6	MT 35	136 x 300
3PF62,5B415INB35(X)	62,5	320,9	87,0	MT 35	136 x 300

3 Phase RCM-INB Capacitors - 440 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B440INB16(X)	1,25	5,7	1,6	MT 16	75 x 185
3PF2,5B440INB16(X)	2,5	11,4	3,3	MT 16	75 x 185
3PF5B440INB16(X)	5	22,8	6,6	MT 16	75 x 185
3PF5,6B440INB16(X)	5,6	25,6	7,3	MT 16	75 x 185
3PF6,25B440INB16(X)	6,25	28,5	8,2	MT 16	75 x 185
3PF7B440INB16(X)	7	32,0	9,2	MT 16	75 x 185
3PF7,5B440INB16(X)	7,5	34,3	9,8	MT 16	75 x 185
3PF10B440INB16(X)	10	45,7	13,1	MT 16	85 x 185
3PF11,3B440INB16(X)	11,3	51,6	14,8	MT 16	75 x 260
3PF12,5B440INB16(X)	12,5	57,1	16,4	MT 16	75 x 260
3PF14,1B440INB16(X)	14,1	64,4	18,5	MT 16	75 x 260
3PF15B440INB16(X)	15	68,5	19,7	MT 16	85 x 225
3PF20B440INB25(X)	20	91,3	26,2	MT 25	100 x 225
3PF22,5B440INB25(X)	22,5	102,8	29,5	MT 25	100 x 225
3PF25B440INB25(X)	25	114,2	32,8	MT 25	100 x 260
3PF28,1B440INB25(X)	28,1	128,3	36,9	MT 25	100 x 260
3PF30B440INB25(X)	30	137,0	39,4	MT 25	100 x 285
3PF33,3B440INB25(X)	33,3	152,1	43,7	MT 25	116 x 285
3PF40B440INB25(X)	40	182,7	52,5	MT 25	116 x 285
3PF50B440INB35(X)	50	228,4	65,6	MT 35	136 x 300
3PF62,5B440INB35(X)	62,5	285,4	82,0	MT 35	136 x 375

3 Phase RCM-INB Capacitors - 480 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B480INB16(X)	1,25	4,8	1,5	MT 16	75 x 185
3PF2,5B480INB16(X)	2,5	9,6	3,0	MT 16	75 x 185
3PF5B480INB16(X)	5	19,2	6,0	MT 16	75 x 185
3PF6,25B480INB16(X)	6,25	24,0	7,5	MT 16	75 x 185
3PF6,7B480INB16(X)	6,7	25,7	8,1	MT 16	75 x 185
3PF7,5B480INB16(X)	7,5	28,8	9,0	MT 16	75 x 185
3PF8,4B480INB16(X)	8,4	32,2	10,1	MT 16	85 x 185
3PF10B480INB16(X)	10	38,4	12,0	MT 16	85 x 185
3PF12,5B480INB16(X)	12,5	48,0	15,0	MT 16	75 x 260
3PF13,4B480INB16(X)	13,4	51,4	16,1	MT 16	75 x 260
3PF15B480INB16(X)	15	57,6	18,0	MT 16	85 x 260
3PF16,7B480INB16(X)	16,7	64,1	20,1	MT 16	85 x 260
3PF20B480INB25(X)	20	76,8	24,1	MT 25	100 x 260
3PF25B480INB25(X)	25	95,9	30,1	MT 25	100 x 260
3PF26,8B480INB25(X)	26,8	102,8	32,2	MT 25	100 x 285
3PF30B480INB25(X)	30	115,1	36,1	MT 25	100 x 285
3PF33,3B480INB25(X)	33,3	127,8	40,1	MT 25	116 x 285
3PF33,5B480INB25(X)	33,5	128,6	40,3	MT 25	116 x 285
3PF40B480INB25(X)	40	153,5	48,1	MT 25	116 x 285
3PF50B480INB35(X)	50	191,9	60,1	MT 35	136 x 300
3PF62,5B480INB35(X)	62,5	239,9	75,2	MT 35	136 x 300

3 Phase RCM-INB Capacitors - 525 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B525INB16(X)	1,25	4,0	1,4	MT 16	75 x 185
3PF2,5B525INB16(X)	2,5	8,0	2,7	MT 16	75 x 185
3PF5B525INB16(X)	5	16,0	5,5	MT 16	75 x 185
3PF6,25B525INB16(X)	6,25	20,0	6,9	MT 16	75 x 185
3PF7,4B525INB16(X)	7,4	23,7	8,1	MT 16	75 x 185
3PF7,5B525INB16(X)	7,5	24,1	8,2	MT 16	75 x 185
3PF9,3B525INB16(X)	9,3	29,8	10,2	MT 16	85 x 185
3PF10B525INB16(X)	10	32,1	11,0	MT 16	85 x 185
3PF12,5B525INB16(X)	12,5	40,1	13,7	MT 16	85 x 185
3PF14,8B525INB16(X)	14,8	47,5	16,3	MT 16	75 x 260
3PF15B525INB16(X)	15	48,1	16,5	MT 16	75 x 260
3PF18,5B525INB16(X)	18,5	59,3	20,3	MT 16	85 x 260
3PF20B525INB16(X)	20	64,2	22,0	MT 16	85 x 260
3PF25B525INB25(X)	25	80,2	27,5	MT 25	100 x 260
3PF29,6B525INB25(X)	29,6	95,0	32,6	MT 25	100 x 260
3PF30B525INB25(X)	30	96,2	33,0	MT 25	100 x 285
3PF33,3B525INB25(X)	33,3	106,8	36,6	MT 25	100 x 285
3PF37B525INB25(X)	37	118,7	40,7	MT 25	100 x 285
3PF40B525INB25(X)	40	128,3	44,0	MT 25	116 x 285
3PF50B525INB35(X)	50	160,4	55,0	MT 35	136 x 300
3PF62,5B525INB35(X)	62,5	200,5	68,7	MT 35	136 x 300

3 Phase RCM-INB Capacitors - 690 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF5B690INB16(X)	5	9,3	4,2	MT 16	75 x 185
3PF6,25B690INB16(X)	6,25	11,6	5,2	MT 16	85 x 185
3PF7,5B690INB16(X)	7,5	13,9	6,3	MT 16	85 x 185
3PF10B690INB16(X)	10	18,6	8,4	MT 16	75 x 260
3PF12,5B690INB16(X)	12,5	23,2	10,5	MT 16	85 x 260
3PF15B690INB16(X)	15	27,9	12,6	MT 16	85 x 285
3PF20B690INB25(X)	20	37,1	16,7	MT 25	100 x 285
3PF25B690INB25(X)	25	46,4	20,9	MT 25	100 x 285
3PF30B690INB25(X)	30	55,7	25,1	MT 25	116 x 300
3PF40B690INB25(X)	40	74,3	33,5	MT 25	136 x 300
3PF50B690INB35(X)	50	92,9	41,8	MT 35	136 x 375

3 Phase RCM-INB Capacitors - 780 V 60 Hz3 Phase RCM-INB Capacitors - 780 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF12,5B780INB16(X)	12,5	18,2	9,3	MT 16	85 x 300
3PF20B780INB25(X)	20	29,1	14,8	MT 25	100 x 285
3PF25B780INB25(X)	25	36,3	18,5	MT 25	116 x 285
3PF40B780INB25(X)	40	58,1	29,6	MT 25	136 x 300
3PF50B780INB35(X)	50	72,7	37,0	MT 35	136 x 375

* The last alphanumeric symbol is supplied at the time of order by Gruppo Energia once the desired capacitor size has been selected.
** All dimensions will be confirmed at the time of order.

Intact PLUS - Heavy Duty Capacitors Nll <20%

Technical Specification Intact PLUS RCM-INP

General	
Standards:	IEC 60831-1:2014, UL810, VDE 0560-46:2014-11
Origin:	100% made in Italy
Voltage range:	220 V to 1000 V
Frequency:	50 Hz / 60 Hz
Power range:	1 kVar to 50 kVar
Dielectric losses:	< 0,2 W/kVar
Total losses:	< 0,5 W/kVar
Capacitance tolerance:	± 5%
Voltage test between terminals:	2,15 Un, 50 Hz, 10 seconds (routine test)
Voltage test between terminals:	3,00 Un, 50 Hz, 60 seconds (type test)
Voltage test terminal / case:	≤ 525 V 3000 V, 50 Hz for 10 seconds or > 525 V 3660 V, 50 Hz for 10 seconds
Insulation level:	3 / 8 kV
External discharge resistor:	50 V in 1 min. 1 kVar - 30 kVar or 75 V in 3 min. 30,5 kVar - 62,5 kVar
Cooling:	Natural air or forced ventilation

Operating Conditions	
Ambient temperature:	-40 °C / 55 °C
Humidity:	up to 95%
Altitude above sea level:	2000 m.
Overvoltage:	Un+10% for 8 hrs. daily Un+15% for 30 min. daily Un+20% for 5 min. daily Un+30% for 1 min. daily
Overcurrent*:	up to 1,8 x In (Including Harmonics)
Inrush current:	up to 250 x In
Service life:	up to 160.000 hrs.
Harmonic presence:	NLL < 20%

Safety Features	
Safety:	Overpressure disconnector on 3 phase + Incorporated fuses + Self-healing + Discharge resistor
Protection degree:	IP20

Construction	
Casing:	Sealed metal (aluminum) enclosure
Dielectric:	Al/Zn slope metalized polypropylene film, wave-cut
Filling:	Gel-type polyurethane resin, Non-PCB

Installation	
Mounting position:	Preferably vertical for a better cooling
Fastening & Earthing:	Through 1 point, screw M12 at the bottom

* This maximum value may vary with each capacitor.

Scan this QR code to download the complete catalogue.

Intact PLUS - Heavy Duty Capacitors Nll <20%

3 Phase RCM-INP Capacitors - 400 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A400INP16(X)	1,25	8,3	1,8	MT 16	75 x 185
3PF2,5A400INP16(X)	2,5	16,6	3,6	MT 16	75 x 185
3PF5A400INP16(X)	5	33,2	7,2	MT 16	75 x 185
3PF6,25A400INP16(X)	6,25	41,4	9,0	MT 16	85 x 185
3PF7,5A400INP16(X)	7,5	49,7	10,8	MT 16	85 x 185
3PF10A400INP16(X)	10	66,3	14,4	MT 16	75 x 260
3PF12,5A400INP16(X)	12,5	82,9	18,0	MT 16	85 x 260
3PF15A400INP16(X)	15	99,5	21,7	MT 16	85 x 285
3PF20A400INP25(X)	20	132,6	28,9	MT 25	100 x 260
3PF25A400INP25(X)	25	165,8	36,1	MT 25	100 x 285
3PF30A400INP25(X)	30	198,9	43,3	MT 25	116 x 285
3PF33,3A400INP25(X)	33,3	220,8	48,1	MT 25	116 x 285
3PF40A400INP35(X)	40	265,3	57,7	MT 35	136 x 300
3PF50A400INP35(X)	50	331,6	72,2	MT 35	136 x 375

3 Phase RCM-INP Capacitors - 415 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A415INP16(X)	1,25	7,7	1,7	MT 16	75 x 185
3PF2,5A415INP16(X)	2,5	15,4	3,5	MT 16	75 x 185
3PF5A415INP16(X)	5	30,8	7,0	MT 16	75 x 185
3PF6,25A415INP16(X)	6,25	38,5	8,7	MT 16	75 x 185
3PF7,5A415INP16(X)	7,5	46,2	10,4	MT 16	85 x 185
3PF10A415INP16(X)	10	61,6	13,9	MT 16	75 x 260
3PF12,5A415INP16(X)	12,5	77,0	17,4	MT 16	85 x 260
3PF15A415INP16(X)	15	92,4	20,9	MT 16	85 x 260
3PF20A415INP25(X)	20	123,2	27,8	MT 25	100 x 260
3PF25A415INP25(X)	25	154,0	34,8	MT 25	100 x 285
3PF30A415INP25(X)	30	184,8	41,7	MT 25	116 x 285
3PF33,3A415INP25(X)	33,3	205,2	46,3	MT 25	116 x 285
3PF40A415INP35(X)	40	246,4	55,6	MT 35	136 x 300
3PF50A415INP35(X)	50	308,0	69,6	MT 35	136 x 375

3 Phase RCM-INP Capacitors - 440 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A440INP16(X)	1,25	6,9	1,6	MT 16	75 x 185
3PF2,5A440INP16(X)	2,5	13,7	3,3	MT 16	75 x 185
3PF5A440INP16(X)	5	27,4	6,6	MT 16	75 x 185
3PF6,25A440INP16(X)	6,25	34,3	8,2	MT 16	75 x 185
3PF7,5A440INP16(X)	7,5	41,1	9,8	MT 16	85 x 185
3PF10A440INP16(X)	10	54,8	13,1	MT 16	85 x 225
3PF12,5A440INP16(X)	12,5	68,5	16,4	MT 16	85 x 260
3PF15A440INP16(X)	15	82,2	19,7	MT 16	85 x 260
3PF20A440INP25(X)	20	109,6	26,2	MT 25	100 x 260
3PF25A440INP25(X)	25	137,0	32,8	MT 25	100 x 285
3PF30A440INP25(X)	30	164,4	39,4	MT 25	116 x 285
3PF33,3A440INP25(X)	33,3	182,5	43,7	MT 25	116 x 285
3PF40A440INP35(X)	40	219,2	52,5	MT 35	136 x 300
3PF50A440INP35(X)	50	274,0	65,6	MT 35	136 x 375

3 Phase RCM-INP Capacitors - 480 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A480INP16(X)	1,25	5,8	1,5	MT 16	75 x 185
3PF2,5A480INP16(X)	2,5	11,5	3,0	MT 16	75 x 185
3PF5A480INP16(X)	5	23,0	6,0	MT 16	85 x 185
3PF6,25A480INP16(X)	6,25	28,8	7,5	MT 16	85 x 185
3PF7,5A480INP16(X)	7,5	34,5	9,0	MT 16	75 x 260
3PF10A480INP16(X)	10	46,1	12,0	MT 16	85 x 260
3PF12,5A480INP16(X)	12,5	57,6	15,0	MT 16	85 x 285
3PF15A480INP16(X)	15	69,1	18,0	MT 16	85 x 285
3PF20A480INP25(X)	20	92,1	24,1	MT 25	100 x 285
3PF25A480INP25(X)	25	115,1	30,1	MT 25	116 x 285
3PF30A480INP25(X)	30	138,2	36,1	MT 25	116 x 285
3PF33,3A480INP25(X)	33,3	153,4	40,1	MT 25	136 x 300
3PF40A480INP25(X)	40	184,2	48,1	MT 25	136 x 300
3PF50A480INP35(X)	50	230,3	60,1	MT 35	136 x 375

3 Phase RCM-INP Capacitors - 525 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A525INP16(X)	1,25	4,8	1,4	MT 16	75 x 185
3PF2,5A525INP16(X)	2,5	9,6	2,7	MT 16	75 x 185
3PF5A525INP16(X)	5	19,2	5,5	MT 16	75 x 185
3PF6,25A525INP16(X)	6,25	24,1	6,9	MT 16	85 x 185
3PF7,5A525INP16(X)	7,5	28,9	8,2	MT 16	85 x 185
3PF10A525INP16(X)	10	38,5	11,0	MT 16	75 x 260
3PF12,5A525INP16(X)	12,5	48,1	13,7	MT 16	85 x 285
3PF15A525INP16(X)	15	57,7	16,5	MT 16	85 x 285
3PF20A525INP25(X)	20	77,0	22,0	MT 25	100 x 260
3PF25A525INP25(X)	25	96,2	27,5	MT 25	100 x 285
3PF30A525INP25(X)	30	115,5	33,0	MT 25	116 x 285
3PF33,3A525INP25(X)	33,3	128,2	36,6	MT 25	116 x 285
3PF40A525INP35(X)	40	154,0	44,0	MT 35	136 x 300
3PF50A525INP35(X)	50	192,5	55,0	MT 35	136 x 300

3 Phase RCM-INP Capacitors - 690 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A690INP16(X)	1,25	2,8	1,0	MT 16	75 x 185
3PF2,5A690INP16(X)	2,5	5,6	2,1	MT 16	75 x 185
3PF5A690INP16(X)	5	11,1	4,2	MT 16	85 x 185
3PF6,25A690INP16(X)	6,25	13,9	5,2	MT 16	75 x 260
3PF7,5A690INP16(X)	7,5	16,7	6,3	MT 16	75 x 260
3PF10A690INP16(X)	10	22,3	8,4	MT 16	85 x 260
3PF12,5A690INP16(X)	12,5	27,9	10,5	MT 16	85 x 285
3PF15A690INP25(X)	15	33,4	12,6	MT 25	100 x 285
3PF20A690INP25(X)	20	44,6	16,7	MT 25	116 x 285
3PF25A690INP25(X)	25	55,7	20,9	MT 25	116 x 285
3PF30A690INP25(X)	30	66,9	25,1	MT 25	136 x 300
3PF33,3A690INP25(X)	33,3	74,2	27,9	MT 25	136 x 300
3PF40A690INP25(X)	40	89,1	33,5	MT 25	136 x 375
3PF50A690INP35(X)	50	111,4	41,8	MT 35	136 x 375

* The last alphanumeric symbol is supplied at the time of order by Gruppo Energia once the desired capacitor size has been selected.
** All dimensions will be confirmed at the time of order.

Intact PLUS - Heavy Duty
Capacitors Nll <20%

3 Phase RCM-INP Capacitors - 400 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B400INP16(X)	1,25	6,9	1,8	MT 16	75 x 185
3PF2,5B400INP16(X)	2,5	13,8	3,6	MT 16	75 x 185
3PF5B400INP16(X)	5	27,6	7,2	MT 16	75 x 185
3PF6,25B400INP16(X)	6,25	34,5	9,0	MT 16	75 x 185
3PF7,5B400INP16(X)	7,5	41,4	10,8	MT 16	85 x 185
3PF10B400INP16(X)	10	55,3	14,4	MT 16	75 x 260
3PF12,5B400INP16(X)	12,5	69,1	18,0	MT 16	75 x 260
3PF15B400INP16(X)	15	82,9	21,7	MT 16	85 x 260
3PF20B400INP25(X)	20	110,5	28,9	MT 25	100 x 260
3PF25B400INP25(X)	25	138,2	36,1	MT 25	100 x 285
3PF30B400INP25(X)	30	165,8	43,3	MT 25	116 x 285
3PF33,3B400INP25(X)	33,3	184,0	48,1	MT 25	116 x 285
3PF40B400INP35(X)	40	221,0	57,7	MT 35	136 x 300
3PF50B400INP35(X)	50	276,3	72,2	MT 35	136 x 375

3 Phase RCM-INP Capacitors - 415 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B415INP16(X)	1,25	6,4	1,7	MT 16	75 x 185
3PF2,5B415INP16(X)	2,5	12,8	3,5	MT 16	75 x 185
3PF5B415INP16(X)	5	25,7	7,0	MT 16	75 x 185
3PF6,25B415INP16(X)	6,25	32,1	8,7	MT 16	75 x 185
3PF7,5B415INP16(X)	7,5	38,5	10,4	MT 16	85 x 185
3PF10B415INP16(X)	10	51,3	13,9	MT 16	75 x 260
3PF12,5B415INP16(X)	12,5	64,2	17,4	MT 16	75 x 260
3PF15B415INP16(X)	15	77,0	20,9	MT 16	85 x 260
3PF20B415INP25(X)	20	102,7	27,8	MT 25	100 x 260
3PF25B415INP25(X)	25	128,3	34,8	MT 25	100 x 285
3PF30B415INP25(X)	30	154,0	41,7	MT 25	100 x 285
3PF33,3B415INP25(X)	33,3	171,0	46,3	MT 25	116 x 285
3PF40B415INP35(X)	40	205,4	55,6	MT 35	136 x 300
3PF50B415INP35(X)	50	256,7	69,6	MT 35	136 x 300

3 Phase RCM-INP Capacitors - 440 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B440INP16(X)	1,25	5,7	1,6	MT 16	75 x 185
3PF2,5B440INP16(X)	2,5	11,4	3,3	MT 16	75 x 185
3PF5B440INP16(X)	5	22,8	6,6	MT 16	75 x 185
3PF6,25B440INP16(X)	6,25	28,5	8,2	MT 16	75 x 185
3PF7,5B440INP16(X)	7,5	34,3	9,8	MT 16	85 x 185
3PF10B440INP16(X)	10	45,7	13,1	MT 16	85 x 185
3PF12,5B440INP16(X)	12,5	57,1	16,4	MT 16	75 x 260
3PF15B440INP16(X)	15	68,5	19,7	MT 16	85 x 260
3PF20B440INP25(X)	20	91,3	26,2	MT 25	100 x 260
3PF25B440INP25(X)	25	114,2	32,8	MT 25	100 x 260
3PF30B440INP25(X)	30	137,0	39,4	MT 25	100 x 285
3PF33,3B440INP25(X)	33,3	152,1	43,7	MT 25	116 x 285
3PF40B440INP35(X)	40	182,7	52,5	MT 35	136 x 300
3PF50B440INP35(X)	50	228,4	65,6	MT 35	136 x 300

3 Phase RCM-INP Capacitors - 480 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B480INP16(X)	1,25	4,8	1,5	MT 16	75 x 185
3PF2,5B480INP16(X)	2,5	9,6	3,0	MT 16	75 x 185
3PF5B480INP16(X)	5	19,2	6,0	MT 16	75 x 185
3PF6,25B480INP16(X)	6,25	24,0	7,5	MT 16	85 x 185
3PF7,5B480INP16(X)	7,5	28,8	9,0	MT 16	85 x 185
3PF10B480INP16(X)	10	38,4	12,0	MT 16	75 x 260
3PF12,5B480INP16(X)	12,5	48,0	15,0	MT 16	85 x 260
3PF15B480INP16(X)	15	57,6	18,0	MT 16	85 x 260
3PF20B480INP25(X)	20	76,8	24,1	MT 25	100 x 285
3PF25B480INP25(X)	25	95,9	30,1	MT 25	100 x 285
3PF30B480INP25(X)	30	115,1	36,1	MT 25	116 x 285
3PF33,3B480INP25(X)	33,3	127,8	40,1	MT 25	116 x 285
3PF40B480INP25(X)	40	153,5	48,1	MT 25	136 x 300
3PF50B480INP35(X)	50	191,9	60,1	MT 35	136 x 300

3 Phase RCM-INP Capacitors - 525 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B525INP16(X)	1,25	4,0	1,4	MT 16	75 x 185
3PF2,5B525INP16(X)	2,5	8,0	2,7	MT 16	75 x 185
3PF5B525INP16(X)	5	16,0	5,5	MT 16	75 x 185
3PF6,25B525INP16(X)	6,25	20,0	6,9	MT 16	75 x 185
3PF7,5B525INP16(X)	7,5	24,1	8,2	MT 16	85 x 185
3PF10B525INP16(X)	10	32,1	11,0	MT 16	85 x 185
3PF12,5B525INP16(X)	12,5	40,1	13,7	MT 16	75 x 260
3PF15B525INP16(X)	15	48,1	16,5	MT 16	85 x 260
3PF20B525INP25(X)	20	64,2	22,0	MT 25	100 x 260
3PF25B525INP25(X)	25	80,2	27,5	MT 25	100 x 260
3PF30B525INP25(X)	30	96,2	33,0	MT 25	100 x 285
3PF33,3B525INP25(X)	33,3	106,8	36,6	MT 25	116 x 285
3PF40B525INP35(X)	40	128,3	44,0	MT 35	136 x 300
3PF50B525INP35(X)	50	160,4	55,0	MT 35	136 x 300

3 Phase RCM-INP Capacitors - 690 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B690INP16(X)	1,25	2,3	1,0	MT 16	75 x 185
3PF2,5B690INP16(X)	2,5	4,6	2,1	MT 16	75 x 185
3PF5B690INP16(X)	5	9,3	4,2	MT 16	75 x 185
3PF6,25B690INP16(X)	6,25	11,6	5,2	MT 16	85 x 185
3PF7,5B690INP16(X)	7,5	13,9	6,3	MT 16	85 x 185
3PF10B690INP16(X)	10	18,6	8,4	MT 16	85 x 225
3PF12,5B690INP16(X)	12,5	23,2	10,5	MT 16	85 x 260
3PF15B690INP16(X)	15	27,9	12,6	MT 16	85 x 285
3PF20B690INP25(X)	20	37,1	16,7	MT 25	100 x 285
3PF25B690INP25(X)	25	46,4	20,9	MT 25	116 x 285
3PF30B690INP25(X)	30	55,7	25,1	MT 25	116 x 285
3PF33,3B690INP25(X)	33,3	61,8	27,9	MT 25	136 x 300
3PF40B690INP25(X)	40	74,3	33,5	MT 25	136 x 300
3PF50B690INP35(X)	50	92,9	41,8	MT 35	136 x 375

Intact PLUS - Extra Heavy Duty
Capacitors Nll <25%

Technical Specification Intact allpower RCM-INA

General	
Standards:	IEC 60831-1:2014, UL810, VDE 0560-46:2014-11
Origin:	100% made in Italy
Voltage range:	220 V to 1000 V
Frequency:	50 Hz / 60 Hz
Power range:	1 kVar to 50 kVar
Dielectric losses:	< 0,2 W/kVar
Total losses:	< 0,5 W/kVar
Capacitance tolerance:	± 5%
Voltage test between terminals:	2,15 Un, 50 Hz, 10 seconds (routine test)
Voltage test between terminals:	3,00 Un, 50 Hz, 60 seconds (type test)
Voltage test terminal / case:	≤ 525 V 3000 V, 50 Hz for 10 seconds or > 525 V 3660 V, 50 Hz for 10 seconds
Insulation level:	3 / 8 kV
External discharge resistor:	50 V in 1 min. 1 kVar - 30 kVar or 75 V in 3 min. 30,5 kVar - 62,5 kVar
Cooling:	Natural air or forced ventilation

Operating Conditions	
Ambient temperature:	- 45 °C / 60 °C
Humidity:	up to 95%
Altitude above sea level:	2000 m.
Overvoltage:	Un+10% continuous operation Un+15% for 30 min. daily Un+20% for 5 min. daily Un+30% for 1 min. daily
Overcurrent*:	up to 2,5 x In (Including Harmonics)
Inrush current:	up to 280 x In
Service life:	up to 180.000 hrs.
Harmonic presence:	Nll < 25%

Safety Features	
Safety:	Overpressure disconnector on 3 phase + Incorporated fuses + Self-healing + Discharge resistor
Protection degree:	IP20

Construction	
Casing:	Sealed metal (aluminum) enclosure
Dielectric:	Al/Zn slope metalized polypropylene film, wave-cut
Filling:	Gel-type polyurethane resin, Non-PCB

Installation	
Mounting position:	Preferably vertical for a better cooling
Fastening & Earthing:	Through 1 point, screw M12 at the bottom

* This maximum value may vary with each capacitor.

Scan this QR code to download the complete catalogue.

Intact PLUS - Extra Heavy Duty
Capacitors Nll <25%

3 Phase RCM-INA Capacitors - 400 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A400INA16(X)	1,25	8,3	1,8	MT 16	75 x 185
3PF2,5A400INA16(X)	2,5	16,6	3,6	MT 16	75 x 185
3PF5A400INA16(X)	5	33,2	7,2	MT 16	75 x 185
3PF6,25A400INA16(X)	6,25	41,4	9,0	MT 16	85 x 185
3PF7,5A400INA16(X)	7,5	49,7	10,8	MT 16	85 x 225
3PF10A400INA25(X)	10	66,3	14,4	MT 25	100 x 225
3PF12,5A400INA25(X)	12,5	82,9	18,0	MT 25	100 x 225
3PF15A400INA25(X)	15	99,5	21,7	MT 25	116 x 225
3PF20A400INA35(X)	20	132,6	28,9	MT 35	136 x 225
3PF25A400INA35(X)	25	165,8	36,1	MT 35	136 x 225
3PF30A400INA35(X)	30	198,9	43,3	MT 35	136 x 300
3PF33,3A400INA35(X)	33,3	220,8	48,1	MT 35	136 x 300
3PF40A400INA35(X)	40	265,3	57,7	MT 35	136 x 375
3PF50A400INA35(X)	50	331,6	72,2	MT 35	136 x 375

3 Phase RCM-INA Capacitors - 415 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A415INA16(X)	1,25	7,7	1,7	MT 16	75 x 185
3PF2,5A415INA16(X)	2,5	15,4	3,5	MT 16	75 x 185
3PF5A415INA16(X)	5	30,8	7,0	MT 16	75 x 185
3PF6,25A415INA16(X)	6,25	38,5	8,7	MT 16	85 x 185
3PF7,5A415INA16(X)	7,5	46,2	10,4	MT 16	85 x 225
3PF10A415INA16(X)	10	61,6	13,9	MT 16	85 x 225
3PF12,5A415INA25(X)	12,5	77,0	17,4	MT 25	100 x 225
3PF15A415INA25(X)	15	92,4	20,9	MT 25	116 x 225
3PF20A415INA25(X)	20	123,2	27,8	MT 25	136 x 225
3PF25A415INA35(X)	25	154,0	34,8	MT 35	136 x 225
3PF30A415INA35(X)	30	184,8	41,7	MT 35	136 x 300
3PF33,3A415INA35(X)	33,3	205,2	46,3	MT 35	136 x 300
3PF40A415INA35(X)	40	246,4	55,6	MT 35	136 x 375
3PF50A415INA35(X)	50	308,0	69,6	MT 35	136 x 375

3 Phase RCM-INA Capacitors - 440 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A440INA16(X)	1,25	6,9	1,6	MT 16	75 x 185
3PF2,5A440INA16(X)	2,5	13,7	3,3	MT 16	75 x 185
3PF5A440INA16(X)	5	27,4	6,6	MT 16	75 x 185
3PF6,25A440INA16(X)	6,25	34,3	8,2	MT 16	85 x 185
3PF7,5A440INA16(X)	7,5	41,1	9,8	MT 16	85 x 185
3PF10A440INA16(X)	10	54,8	13,1	MT 16	85 x 225
3PF12,5A440INA25(X)	12,5	68,5	16,4	MT 25	100 x 225
3PF15A440INA25(X)	15	82,2	19,7	MT 25	116 x 225
3PF20A440INA25(X)	20	109,6	26,2	MT 25	116 x 225
3PF25A440INA35(X)	25	137,0	32,8	MT 35	136 x 225
3PF30A440INA35(X)	30	164,4	39,4	MT 35	136 x 300
3PF33,3A440INA35(X)	33,3	182,5	43,7	MT 35	136 x 300
3PF40A440INA35(X)	40	219,2	52,5	MT 35	136 x 375
3PF50A440INA35(X)	50	274,0	65,6	MT 35	136 x 375

3 Phase RCM-INA Capacitors - 480 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A480INA16(X)	1,25	5,8	1,5	MT 16	75 x 185
3PF2,5A480INA16(X)	2,5	11,5	3,0	MT 16	75 x 185
3PF5A480INA16(X)	5	23,0	6,0	MT 16	85 x 185
3PF6,25A480INA16(X)	6,25	28,8	7,5	MT 16	85 x 185
3PF7,5A480INA16(X)	7,5	34,5	9,0	MT 16	75 x 260
3PF10A480INA16(X)	10	46,1	12,0	MT 16	85 x 260
3PF12,5A480INA25(X)	12,5	57,6	15,0	MT 25	85 x 285
3PF15A480INA25(X)	15	69,1	18,0	MT 25	85 x 285
3PF20A480INA25(X)	20	92,1	24,1	MT 25	100 x 285
3PF25A480INA35(X)	25	115,1	30,1	MT 35	136 x 225
3PF30A480INA35(X)	30	138,2	36,1	MT 35	136 x 300
3PF33,3A480INA35(X)	33,3	153,4	40,1	MT 35	136 x 300
3PF40A480INA35(X)	40	184,2	48,1	MT 35	136 x 300
3PF50A480INA35(X)	50	230,3	60,1	MT 35	136 x 375

3 Phase RCM-INA Capacitors - 525 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A525INA16(X)	1,25	4,8	1,4	MT 16	75 x 185
3PF2,5A525INA16(X)	2,5	9,6	2,7	MT 16	75 x 185
3PF5A525INA16(X)	5	19,2	5,5	MT 16	85 x 185
3PF6,25A525INA16(X)	6,25	24,1	6,9	MT 16	85 x 185
3PF7,5A525INA16(X)	7,5	28,9	8,2	MT 16	75 x 260
3PF10A525INA16(X)	10	38,5	11,0	MT 16	85 x 260
3PF12,5A525INA16(X)	12,5	48,1	13,7	MT 16	85 x 285
3PF15A525INA25(X)	15	57,7	16,5	MT 25	85 x 285
3PF20A525INA25(X)	20	77,0	22,0	MT 25	100 x 285
3PF25A525INA25(X)	25	96,2	27,5	MT 25	116 x 285
3PF30A525INA35(X)	30	115,5	33,0	MT 35	136 x 300
3PF33,3A525INA35(X)	33,3	128,2	36,6	MT 35	136 x 300
3PF40A525INA35(X)	40	154,0	44,0	MT 35	136 x 300
3PF50A525INA35(X)	50	192,5	55,0	MT 35	136 x 375

3 Phase RCM-INA Capacitors - 690 V 50 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25A690INA16(X)	1,25	2,8	1,0	MT 16	75 x 185
3PF2,5A690INA16(X)	2,5	5,6	2,1	MT 16	75 x 185
3PF5A690INA16(X)	5	11,1	4,2	MT 16	75 x 260
3PF6,25A690INA16(X)	6,25	13,9	5,2	MT 16	75 x 260
3PF7,5A690INA16(X)	7,5	16,7	6,3	MT 16	85 x 260
3PF10A690INA25(X)	10	22,3	8,4	MT 25	100 x 260
3PF12,5A690INA25(X)	12,5	27,9	10,5	MT 25	100 x 285
3PF15A690INA25(X)	15	33,4	12,6	MT 25	100 x 285
3PF20A690INA25(X)	20	44,6	16,7	MT 25	116 x 285
3PF25A690INA25(X)	25	55,7	20,9	MT 25	136 x 300
3PF30A690INA25(X)	30	66,9	25,1	MT 25	136 x 375

* The last alphanumeric symbol is supplied at the time of order by Gruppo Energia once the desired capacitor size has been selected.
** All dimensions will be confirmed at the time of order.

Intact PLUS - Extra Heavy Duty
Capacitors Nll <25%

3 Phase RCM-INA Capacitors - 400 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B400INA16(X)	1,25	6,9	1,8	MT 16	75 x 185
3PF2,5B400INA16(X)	2,5	13,8	3,6	MT 16	75 x 185
3PF5B400INA16(X)	5	27,6	7,2	MT 16	75 x 185
3PF6,25B400INA16(X)	6,25	34,5	9,0	MT 16	85 x 185
3PF7,5B400INA16(X)	7,5	41,4	10,8	MT 16	85 x 185
3PF10B400INA16(X)	10	55,3	14,4	MT 16	85 x 225
3PF12,5B400INA25(X)	12,5	69,1	18,0	MT 25	100 x 225
3PF15B400INA25(X)	15	82,9	21,7	MT 25	100 x 225
3PF20B400INA25(X)	20	110,5	28,9	MT 25	116 x 225
3PF25B400INA35(X)	25	138,2	36,1	MT 35	136 x 225
3PF30B400INA35(X)	30	165,8	43,3	MT 35	136 x 225
3PF33,3B400INA35(X)	33,3	184,0	48,1	MT 35	136 x 300
3PF40B400INA35(X)	40	221,0	57,7	MT 35	136 x 300
3PF50B400INA35(X)	50	276,3	72,2	MT 35	136 x 375

3 Phase RCM-INA Capacitors - 415 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B415INA16(X)	1,25	6,4	1,7	MT 16	75 x 185
3PF2,5B415INA16(X)	2,5	12,8	3,5	MT 16	75 x 185
3PF5B415INA16(X)	5	25,7	7,0	MT 16	75 x 185
3PF6,25B415INA16(X)	6,25	32,1	8,7	MT 16	75 x 185
3PF7,5B415INA16(X)	7,5	38,5	10,4	MT 16	85 x 185
3PF10B415INA16(X)	10	51,3	13,9	MT 16	85 x 225
3PF12,5B415INA25(X)	12,5	64,2	17,4	MT 25	100 x 225
3PF15B415INA25(X)	15	77,0	20,9	MT 25	100 x 225
3PF20B415INA25(X)	20	102,7	27,8	MT 25	116 x 225
3PF25B415INA35(X)	25	128,3	34,8	MT 35	136 x 225
3PF30B415INA35(X)	30	154,0	41,7	MT 35	136 x 225
3PF33,3B415INA35(X)	33,3	171,0	46,3	MT 35	136 x 225
3PF40B415INA35(X)	40	205,4	55,6	MT 35	136 x 300
3PF50B415INA35(X)	50	256,7	69,6	MT 35	136 x 300

3 Phase RCM-INA Capacitors - 440 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B440INA16(X)	1,25	5,7	1,6	MT 16	75 x 185
3PF2,5B440INA16(X)	2,5	11,4	3,3	MT 16	75 x 185
3PF5B440INA16(X)	5	22,8	6,6	MT 16	75 x 185
3PF6,25B440INA16(X)	6,25	28,5	8,2	MT 16	75 x 185
3PF7,5B440INA16(X)	7,5	34,3	9,8	MT 16	85 x 185
3PF10B440INA16(X)	10	45,7	13,1	MT 16	85 x 225
3PF12,5B440INA25(X)	12,5	57,1	16,4	MT 25	100 x 225
3PF15B440INA25(X)	15	68,5	19,7	MT 25	100 x 225
3PF20B440INA25(X)	20	91,3	26,2	MT 25	116 x 225
3PF25B440INA35(X)	25	114,2	32,8	MT 35	136 x 225
3PF30B440INA35(X)	30	137,0	39,4	MT 35	136 x 225
3PF33,3B440INA35(X)	33,3	152,1	43,7	MT 35	136 x 225
3PF40B440INA35(X)	40	182,7	52,5	MT 35	136 x 300
3PF50B440INA35(X)	50	228,4	65,6	MT 35	136 x 375

3 Phase RCM-INA Capacitors - 480 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B480INA16(X)	1,25	4,8	1,5	MT 16	75 x 185
3PF2,5B480INA16(X)	2,5	9,6	3,0	MT 16	75 x 185
3PF5B480INA16(X)	5	19,2	6,0	MT 16	75 x 185
3PF6,25B480INA16(X)	6,25	24,0	7,5	MT 16	85 x 185
3PF7,5B480INA16(X)	7,5	28,8	9,0	MT 16	85 x 185
3PF10B480INA16(X)	10	38,4	12,0	MT 16	85 x 225
3PF12,5B480INA25(X)	12,5	48,0	15,0	MT 25	100 x 225
3PF15B480INA25(X)	15	57,6	18,0	MT 25	100 x 225
3PF20B480INA25(X)	20	76,8	24,1	MT 25	116 x 225
3PF25B480INA35(X)	25	95,9	30,1	MT 35	136 x 225
3PF30B480INA35(X)	30	115,1	36,1	MT 35	136 x 225
3PF33,3B480INA35(X)	33,3	127,8	40,1	MT 35	136 x 225
3PF40B480INA35(X)	40	153,5	48,1	MT 35	136 x 300
3PF50B480INA35(X)	50	191,9	60,1	MT 35	136 x 300

3 Phase RCM-INA Capacitors - 440 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B525INA16(X)	1,25	4,0	1,4	MT 16	75 x 185
3PF2,5B525INA16(X)	2,5	8,0	2,7	MT 16	75 x 185
3PF5B525INA16(X)	5	16,0	5,5	MT 16	75 x 185
3PF6,25B525INA16(X)	6,25	20,0	6,9	MT 16	85 x 185
3PF7,5B525INA16(X)	7,5	24,1	8,2	MT 16	85 x 185
3PF10B525INA16(X)	10	32,1	11,0	MT 16	85 x 225
3PF12,5B525INA25(X)	12,5	40,1	13,7	MT 25	100 x 225
3PF15B525INA25(X)	15	48,1	16,5	MT 25	100 x 225
3PF20B525INA25(X)	20	64,2	22,0	MT 25	116 x 225
3PF25B525INA25(X)	25	80,2	27,5	MT 25	136 x 225
3PF30B525INA35(X)	30	96,2	33,0	MT 35	136 x 225
3PF33,3B525INA35(X)	33,3	106,8	36,6	MT 35	136 x 300
3PF40B525INA35(X)	40	128,3	44,0	MT 35	136 x 300
3PF50B525INA35(X)	50	160,4	55,0	MT 35	136 x 300

3 Phase RCM-INA Capacitors - 690 V 60 Hz

Order Code*	Qc	Cn	In	Terminal	ø x H**
	kVar	3 x µF	A	sq mm	mm
3PF1,25B690INA16(X)	1,25	2,3	1,0	MT 16	75 x 185
3PF2,5B690INA16(X)	2,5	4,6	2,1	MT 16	75 x 185
3PF5B690INA16(X)	5	9,3	4,2	MT 16	85 x 185
3PF6,25B690INA16(X)	6,25	11,6	5,2	MT 16	85 x 225
3PF7,5B690INA16(X)	7,5	13,9	6,3	MT 16	85 x 225
3PF10B690INA25(X)	10	18,6	8,4	MT 25	100 x 225
3PF12,5B690INA25(X)	12,5	23,2	10,5	MT 25	116 x 225
3PF15B690INA25(X)	15	27,9	12,6	MT 25	116 x 225
3PF20B690INA25(X)	20	37,1	16,7	MT 25	136 x 225
3PF25B690INA25(X)	25	46,4	20,9	MT 25	136 x 300
3PF30B690INA25(X)	30	55,7	25,1	MT 25	136 x 300

Harmonic Detuned Reactors

The use of several power electronic devices and non-linear devices contributes to the generation of harmonics, which adversely affect the operation of capacitors.
Harmonic reactors are designed to protect capacitors and reduce the overall level of harmonics in the network.
Capacitors and reactors form a resonant circuit. The resonance frequency of which is lower than the frequency of the higher harmonic present in the network.
Therefore, the use of harmonic detuned reactors prevents harmonic resonance, capacitor overload and reduces harmonic distortion in the network.
The most common reactor tuning frequencies are 210 Hz (P = 5.67%), 189 Hz (P = 7%) and 134 Hz (P = 14%). P = 14% is used at a high voltage level of the third harmonic.

Selection of harmonic detuned reactors

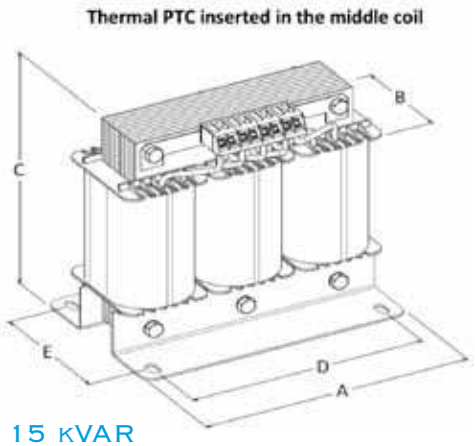
Adjusted rating: Consists of achieving a predefined power, by preselecting several matching reactors and capacitors. This ensures the required power compensation, considering the voltage increase within the resonant circuit.

Non-adjusted rating: This method consists of choosing matching reactors to existing capacitors, considering capacitor values, such as capacitance and voltage.
Be careful: mismatched capacitors are not protected against voltage overloads.
Excessive voltage loading may lead to failure of the capacitors and/or shortening of their service life.

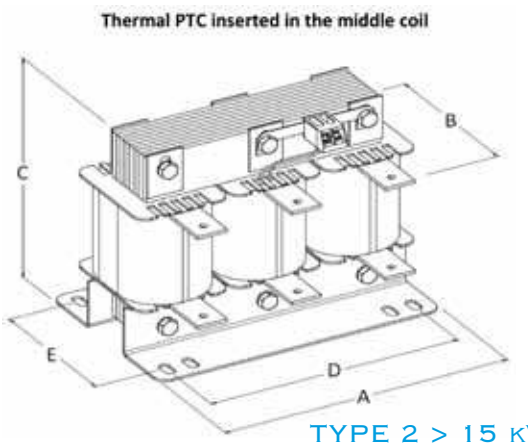
Attention: if you need to install harmonic detuned reactors in an existing system, please contact a specialist who will check the capacitance of the capacitors and confirm that they are not damaged.
This may occur when the capacitors operate without detuned reactors.

General	GE-RT3 Detuned Harmonic Reactors General specification
Standards:	IEC 61558-2-20 EN 61558-2-20
Origin:	100% made in Italy
Voltage range:	220 V to 1000 V
Frequency:	50 Hz — 60 Hz
Relative impedance:	5,67% ; 7% ; 14% (Other on request)
Tuning frequency:	189 Hz / 230 Hz, 134 Hz / 160 Hz, 210 Hz / 250 Hz (at 50 Hz / 60 Hz)
Power range:	2,5 kVar to 100 kVAR (other on request)
Insulation class:	Class H (Other on request)
Winding material:	Al (Cu on request)
Working class:	Class F (Other on request)
Protection degree:	IP00
Test voltage:	3kV/1'
Maximum ambient temperature:	Ta 40 °C / (50 °C or higher on request)

Construction Diagram



TYPE 1 ≤ 15 kVAR



TYPE 2 > 15 kVAR

Harmonic Detuned Reactors GE-RTM3
Adjusted Rating

3 Phase GE-RTM3 Reactors 210 Hz - 400 V P=5,67% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.400R210	2,5	12,2	3,6	180 x 90 x 173	3PF2,9A440INB(XXX)	2,5
GE3RTM5.400R210	5	6,1	7,2	180 x 90 x 173	3PF5.7A440INB(XXX)	5
GE3RTM6,25.400R210	6,25	4,9	9,0	180 x 90 x 173	3PF7,1A440INB(XXX)	6,25
GE3RTM7,5.400R210	7,5	4,1	10,8	180 x 90 x 173	3PF8,6A440INB(XXX)	7,5
GE3RTM10.400R210	10	3,1	14,4	180 x 102 x 173	3PF11,4A440INB(XXX)	10
GE3RTM12,5.400R210	12,5	2,4	18,0	180 x 113 x 173	3PF14,3A440INB(XXX)	12,5
GE3RTM15.400R210	15	2,0	21,7	180 x 128 x 173	3PF17,1A440INB(XXX)	15
GE3RTM20.400R210	20	1,5	28,9	240 x 160 x 185	3PF22,8A440INB(XXX)	20
GE3RTM25.400R210	25	1,2	36,1	240 x 160 x 185	3PF28,5A440INB(XXX)	25
GE3RTM30.400R210	30	1,0	43,3	250 x 165 x 205	3PF34,2A440INB(XXX)	30
GE3RTM40.400R210	40	0,8	57,7	250 x 175 x 205	2 x 3PF22,8A440INB(XXX)	40
GE3RTM50.400R210	50	0,6	72,2	250 x 175 x 205	2 x 3PF28,5A440INB(XXX)	50
GE3RTM75.400R210	75	0,4	108,3	300 x 175 x 260	3 x 3PF28,5A440INB(XXX)	75
GE3RTM100.400R210	100	0,3	144,3	300 x 200 x 260	4 x 3PF28,5A440INB(XXX)	100

3 Phase GE-RTM3 Reactors 210 Hz - 415 V P=5,67% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.415R210	2,5	13,2	3,5	180 x 90 x 173	3PF2,7A440INB(XXX)	2,5
GE3RTM5.415R210	5	6,6	7,0	180 x 90 x 173	3PF5,3A440INB(XXX)	5
GE3RTM6,25.415R210	6,25	5,3	8,7	180 x 90 x 173	3PF6,6A440INB(XXX)	6,25
GE3RTM7,5.415R210	7,5	4,4	10,4	180 x 90 x 173	3PF8A440INB(XXX)	7,5
GE3RTM10.415R210	10	3,3	13,9	180 x 102 x 173	3PF10,6A440INB(XXX)	10
GE3RTM12,5.415R210	12,5	2,6	17,4	180 x 113 x 173	3PF13,3A440INB(XXX)	12,5
GE3RTM15.415R210	15	2,2	20,9	180 x 128 x 173	3PF15,9A440INB(XXX)	15
GE3RTM20.415R210	20	1,6	27,8	240 x 160 x 185	3PF21,2A440INB(XXX)	20
GE3RTM25.415R210	25	1,3	34,8	240 x 160 x 185	3PF26,5A440INB(XXX)	25
GE3RTM30.415R210	30	1,1	41,7	250 x 165 x 205	3PF31,8A440INB(XXX)	30
GE3RTM40.415R210	40	0,8	55,6	250 x 175 x 205	2 x 3PF21,2A440INB(XXX)	40
GE3RTM50.415R210	50	0,7	69,6	250 x 175 x 205	2 x 3PF26,5A440INB(XXX)	50
GE3RTM75.415R210	75	0,4	104,3	300 x 175 x 260	3 x 3PF26,5A440INB(XXX)	75
GE3RTM100.415R210	100	0,3	139,1	300 x 200 x 260	4 x 3PF26,5A440INB(XXX)	100

3 Phase GE-RTM3 Reactors 189 Hz - 400 V P=7% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.400R189	2,5	15,3	3,6	180 x 90 x 173	3PF2,8A440INB(XXX)	2,5
GE3RTM5.400R189	5	7,7	7,2	180 x 90 x 173	3PF5,6A440INB(XXX)	5
GE3RTM6,25.400R189	6,25	6,1	9,0	180 x 90 x 173	3PF7A440INB(XXX)	6,25
GE3RTM7,5.400R189	7,5	5,1	10,8	180 x 90 x 173	3PF8,4A440INB(XXX)	7,5
GE3RTM10.400R189	10	3,8	14,4	180 x 102 x 173	3PF11,3A440INB(XXX)	10
GE3RTM12,5.400R189	12,5	3,1	18,0	180 x 113 x 173	3PF14,1A440INB(XXX)	12,5
GE3RTM15.400R189	15	2,6	21,7	180 x 128 x 173	3PF16,9A440INB(XXX)	15
GE3RTM20.400R189	20	1,9	28,9	240 x 160 x 185	3PF22,5A440INB(XXX)	20
GE3RTM25.400R189	25	1,5	36,1	240 x 160 x 185	3PF28,1A440INB(XXX)	25
GE3RTM30.400R189	30	1,3	43,3	250 x 165 x 205	3PF33,8A440INB(XXX)	30
GE3RTM40.400R189	40	1,0	57,7	250 x 175 x 205	2 x 3PF22,5A440INB(XXX)	40
GE3RTM50.400R189	50	0,8	72,2	250 x 175 x 205	2 x 3PF28,1A440INB(XXX)	50
GE3RTM75.400R189	75	0,5	108,3	300 x 175 x 260	3 x 3PF28,1A440INB(XXX)	75
GE3RTM100.400R189	100	0,4	144,3	300 x 200 x 260	4 x 3PF28,1A440INB(XXX)	100

3 Phase GE-RTM3 Reactors 189 Hz - 415 V P=7% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.415R189	2,5	16,5	3,5	180 x 90 x 173	3PF3,1A480INB(XXX)	2,5
GE3RTM5.415R189	5	8,3	7,0	180 x 90 x 173	3PF6,2A480INB(XXX)	5
GE3RTM6,25.415R189	6,25	6,6	8,7	180 x 90 x 173	3PF7,8A480INB(XXX)	6,25
GE3RTM7,5.415R189	7,5	5,5	10,4	180 x 90 x 173	3PF9,3A480INB(XXX)	7,5
GE3RTM10.415R189	10	4,1	13,9	180 x 102 x 173	3PF12,4A480INB(XXX)	10
GE3RTM12,5.415R189	12,5	3,3	17,4	180 x 113 x 173	3PF15,6A480INB(XXX)	12,5
GE3RTM15.415R189	15	2,8	20,9	180 x 128 x 173	3PF18,7A480INB(XXX)	15
GE3RTM20.415R189	20	2,1	27,8	240 x 160 x 185	3PF24,9A480INB(XXX)	20
GE3RTM25.415R189	25	1,7	34,8	240 x 160 x 185	3PF31,1A480INB(XXX)	25
GE3RTM30.415R189	30	1,4	41,7	250 x 165 x 205	3PF37,3A480INB(XXX)	30
GE3RTM40.415R189	40	1,0	55,6	250 x 175 x 205	2 x 3PF24,9A480INB(XXX)	40
GE3RTM50.415R189	50	0,8	69,6	250 x 175 x 205	2 x 3PF31,1A480INB(XXX)	50
GE3RTM75.415R189	75	0,6	104,3	300 x 175 x 260	3 x 3PF31,1A480INB(XXX)	75
GE3RTM100.415R189	100	0,4	139,1	300 x 200 x 260	4 x 3PF31,1A480INB(XXX)	100

3 Phase GE-RTM3 Reactors 134 Hz - 400 V P=14% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.400R134	2,5	33,2	3,6	180 x 110 x 173	3PF3,7A525INB(XXX)	2,5
GE3RTM5.400R134	5	16,6	7,2	180 x 110 x 173	3PF7,4A525INB(XXX)	5
GE3RTM6,25.400R134	6,25	13,3	9,0	180 x 110 x 173	3PF9,3A525INB(XXX)	6,25
GE3RTM7,5.400R134	7,5	11,1	10,8	180 x 110 x 173	3PF11,1A525INB(XXX)	7,5
GE3RTM10.400R134	10	8,3	14,4	240 x 120 x 220	3PF14,8A525INB(XXX)	10
GE3RTM12,5.400R134	12,5	6,6	18,0	240 x 130 x 220	3PF18,5A525INB(XXX)	12,5
GE3RTM15.400R134	15	5,5	21,7	240 x 130 x 220	3PF22,2A525INB(XXX)	15
GE3RTM20.400R134	20	4,1	28,9	240 x 145 x 240	3PF29,6A525INB(XXX)	20
GE3RTM25.400R134	25	3,3	36,1	280 x 175 x 205	3PF37A525INB(XXX)	25
GE3RTM30.400R134	30	2,8	43,3	300 x 170 x 260	3PF44,4A525INB(XXX)	30
GE3RTM40.400R134	40	2,1	57,7	300 x 180 x 260	2 x 3PF29,6A525INB(XXX)	40
GE3RTM50.400R134	50	1,7	72,2	300 x 200 x 260	2 x 3PF37A525INB(XXX)	50
GE3RTM75.400R134	75	1,1	108,3	360 x 230 x 305	3 x 3PF37A525INB(XXX)	75
GE3RTM100.400R134	100	0,8	144,3	360 x 250 x 305	4 x 3PF37A525INB(XXX)	100

3 Phase GE-RTM3 Reactors 134 Hz - 415 V P=14% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.415R134	2,5	35,7	3,5	180 x 110 x 173	3PF3,4A525INB(XXX)	2,5
GE3RTM5.415R134	5	17,8	7,0	180 x 110 x 173	3PF6,9A525INB(XXX)	5
GE3RTM6,25.415R134	6,25	14,3	8,7	180 x 110 x 173	3PF8,6A525INB(XXX)	6,25
GE3RTM7,5.415R134	7,5	11,9	10,4	180 x 110 x 173	3PF10,3A525INB(XXX)	7,5
GE3RTM10.415R134	10	8,9	13,9	240 x 120 x 220	3PF13,8A525INB(XXX)	10
GE3RTM12,5.415R134	12,5	7,1	17,4	240 x 130 x 220	3PF17,2A525INB(XXX)	12,5
GE3RTM15.415R134	15	5,9	20,9	240 x 130 x 220	3PF20,6A525INB(XXX)	15
GE3RTM20.415R134	20	4,5	27,8	240 x 145 x 240	3PF27,5A525INB(XXX)	20
GE3RTM25.415R134	25	3,6	34,8	280 x 175 x 205	3PF34,4A525INB(XXX)	25
GE3RTM30.415R134	30	3,0	41,7	300 x 170 x 260	3PF41,3A525INB(XXX)	30
GE3RTM40.415R134	40	2,2	55,6	300 x 180 x 260	2 x 3PF27,5A525INB(XXX)	40
GE3RTM50.415R134	50	1,8	69,6	300 x 200 x 260	2 x 3PF34,4A525INB(XXX)	50
GE3RTM75.415R134	75	1,2	104,3	360 x 230 x 305	3 x 3PF34,4A525INB(XXX)	75
GE3RTM100.415R134	100	0,9	139,1	360 x 250 x 305	4 x 3PF34,4A525INB(XXX)	100

* All dimensions will be confirmed at the time of order.

**The last alphanumeric symbols is supplied at the time of order by Gruppo Energia once the desired capacitor size has been selected.

Harmonic Detuned Reactors GE-RTM3
Adjusted Rating

3 Phase GE-RT3 Reactors 252 Hz - 400 V P=5,67% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.400R252	2,5	10,2	3,6	180 x 90 x 173	3PF2,9B440INB(XXX)	2,5
GE3RTM5.400R252	5	5,1	7,2	180 x 90 x 173	3PF5.7B440INB(XXX)	5
GE3RTM6,25.400R252	6,25	4,1	9,0	180 x 90 x 173	3PF7,1B440INB(XXX)	6,25
GE3RTM7,5.400R252	7,5	3,4	10,8	180 x 90 x 173	3PF8,6B440INB(XXX)	7,5
GE3RTM10.400R252	10	2,6	14,4	180 x 102 x 173	3PF11,4B440INB(XXX)	10
GE3RTM12,5.400R252	12,5	2,0	18,0	180 x 113 x 173	3PF14,3B440INB(XXX)	12,5
GE3RTM15.400R252	15	1,7	21,7	180 x 128 x 173	3PF17,1B440INB(XXX)	15
GE3RTM20.400R252	20	1,3	28,9	240 x 160 x 185	3PF22,8B440INB(XXX)	20
GE3RTM25.400R252	25	1,0	36,1	240 x 160 x 185	3PF28,5B440INB(XXX)	25
GE3RTM30.400R252	30	0,9	43,3	250 x 165 x 205	3PF34,2B440INB(XXX)	30
GE3RTM40.400R252	40	0,6	57,7	250 x 175 x 205	2 x 3PF22,8B440INB(XXX)	40
GE3RTM50.400R252	50	0,5	72,2	250 x 175 x 205	2 x 3PF28,5B440INB(XXX)	50
GE3RTM75.400R252	75	0,3	108,3	300 x 175 x 260	3 x 3PF28,5B440INB(XXX)	75
GE3RTM100.400R252	100	0,3	144,3	300 x 200 x 260	4 x 3PF28,5B440INB(XXX)	100

3 Phase GE-RT3 Reactors 252 Hz - 415 V P=5,67% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.415R252	2,5	11,0	3,5	180 x 90 x 173	3PF2,7B440INB(XXX)	2,5
GE3RTM5.415R252	5	5,5	7,0	180 x 90 x 173	3PF5,3B440INB(XXX)	5
GE3RTM6,25.415R252	6,25	4,4	8,7	180 x 90 x 173	3PF6,6B440INB(XXX)	6,25
GE3RTM7,5.415R252	7,5	3,7	10,4	180 x 90 x 173	3PF8B440INB(XXX)	7,5
GE3RTM10.415R252	10	2,7	13,9	180 x 102 x 173	3PF10,6B440INB(XXX)	10
GE3RTM12,5.415R252	12,5	2,2	17,4	180 x 113 x 173	3PF13,3B440INB(XXX)	12,5
GE3RTM15.415R252	15	1,8	20,9	180 x 128 x 173	3PF15,9B440INB(XXX)	15
GE3RTM20.415R252	20	1,4	27,8	240 x 160 x 185	3PF21,2B440INB(XXX)	20
GE3RTM25.415R252	25	1,1	34,8	240 x 160 x 185	3PF26,5B440INB(XXX)	25
GE3RTM30.415R252	30	0,9	41,7	250 x 165 x 205	3PF31,8B440INB(XXX)	30
GE3RTM40.415R252	40	0,7	55,6	250 x 175 x 205	2 x 3PF21,2B440INB(XXX)	40
GE3RTM50.415R252	50	0,5	69,6	250 x 175 x 205	2 x 3PF26,5B440INB(XXX)	50
GE3RTM75.415R252	75	0,4	104,3	300 x 175 x 260	3 x 3PF26,5B440INB(XXX)	75
GE3RTM100.415R252	100	0,3	139,1	300 x 200 x 260	4 x 3PF26,5B440INB(XXX)	100

3 Phase GE-RT3 Reactors 227 Hz - 400 V P=7% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.400R227	2,5	12,8	3,6	180 x 90 x 173	3PF2,8B440INB(XXX)	2,5
GE3RTM5.400R227	5	6,4	7,2	180 x 90 x 173	3PF5,6B440INB(XXX)	5
GE3RTM6,25.400R227	6,25	5,1	9,0	180 x 90 x 173	3PF7B440INB(XXX)	6,25
GE3RTM7,5.400R227	7,5	4,3	10,8	180 x 90 x 173	3PF8,4B440INB(XXX)	7,5
GE3RTM10.400R227	10	3,2	14,4	180 x 102 x 173	3PF11,3B440INB(XXX)	10
GE3RTM12,5.400R227	12,5	2,6	18,0	180 x 113 x 173	3PF14,1B440INB(XXX)	12,5
GE3RTM15.400R227	15	2,1	21,7	180 x 128 x 173	3PF16,9B440INB(XXX)	15
GE3RTM20.400R227	20	1,6	28,9	240 x 160 x 185	3PF22,5B440INB(XXX)	20
GE3RTM25.400R227	25	1,3	36,1	240 x 160 x 185	3PF28,1B440INB(XXX)	25
GE3RTM30.400R227	30	1,1	43,3	250 x 165 x 205	3PF33,8B440INB(XXX)	30
GE3RTM40.400R227	40	0,8	57,7	250 x 175 x 205	2 x 3PF22,5B440INB(XXX)	40
GE3RTM50.400R227	50	0,6	72,2	250 x 175 x 205	2 x 3PF28,1B440INB(XXX)	50
GE3RTM75.400R227	75	0,4	108,3	300 x 175 x 260	3 x 3PF28,1B440INB(XXX)	75
GE3RTM100.400R227	100	0,3	144,3	300 x 200 x 260	4 x 3PF28,1B440INB(XXX)	100

3 Phase GE-RT3 Reactors 227 Hz - 415 V P=7% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.415R227	2,5	13,8	3,5	180 x 90 x 173	3PF3,1B480INB(XXX)	2,5
GE3RTM5.415R227	5	6,9	7,0	180 x 90 x 173	3PF6,2B480INB(XXX)	5
GE3RTM6,25.415R227	6,25	5,5	8,7	180 x 90 x 173	3PF7,8B480INB(XXX)	6,25
GE3RTM7,5.415R227	7,5	4,6	10,4	180 x 90 x 173	3PF9,3B480INB(XXX)	7,5
GE3RTM10.415R227	10	3,4	13,9	180 x 102 x 173	3PF12,4B480INB(XXX)	10
GE3RTM12,5.415R227	12,5	2,8	17,4	180 x 113 x 173	3PF15,6B480INB(XXX)	12,5
GE3RTM15.415R227	15	2,3	20,9	180 x 128 x 173	3PF18,7B480INB(XXX)	15
GE3RTM20.415R227	20	1,7	27,8	240 x 160 x 185	3PF24,9B480INB(XXX)	20
GE3RTM25.415R227	25	1,4	34,8	240 x 160 x 185	3PF31,1B480INB(XXX)	25
GE3RTM30.415R227	30	1,1	41,7	250 x 165 x 205	3PF37,3B480INB(XXX)	30
GE3RTM40.415R227	40	0,9	55,6	250 x 175 x 205	2 x 3PF24,9B480INB(XXX)	40
GE3RTM50.415R227	50	0,7	69,6	250 x 175 x 205	2 x 3PF31,1B480INB(XXX)	50
GE3RTM75.415R227	75	0,5	104,3	300 x 175 x 260	3 x 3PF31,1B480INB(XXX)	75
GE3RTM100.415R227	100	0,3	139,1	300 x 200 x 260	4 x 3PF31,1B480INB(XXX)	100

3 Phase GE-RT3 Reactors 160 Hz - 400 V P=14% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.400R160	2,5	27,6	3,6	180 x 110 x 173	3PF3,7B525INB(XXX)	2,5
GE3RTM5.400R160	5	13,8	7,2	180 x 110 x 173	3PF7,4B525INB(XXX)	5
GE3RTM6,25.400R160	6,25	11,1	9,0	180 x 110 x 173	3PF9,3B525INB(XXX)	6,25
GE3RTM7,5.400R160	7,5	9,2	10,8	180 x 110 x 173	3PF11,1B525INB(XXX)	7,5
GE3RTM10.400R160	10	6,9	14,4	240 x 120 x 220	3PF14,8B525INB(XXX)	10
GE3RTM12,5.400R160	12,5	5,5	18,0	240 x 130 x 220	3PF18,5B525INB(XXX)	12,5
GE3RTM15.400R160	15	4,6	21,7	240 x 130 x 220	3PF22,2B525INB(XXX)	15
GE3RTM20.400R160	20	3,5	28,9	240 x 145 x 240	3PF29,6B525INB(XXX)	20
GE3RTM25.400R160	25	2,8	36,1	280 x 175 x 205	3PF37B525INB(XXX)	25
GE3RTM30.400R160	30	2,3	43,3	300 x 170 x 260	3PF44,4B525INB(XXX)	30
GE3RTM40.400R160	40	1,7	57,7	300 x 180 x 260	2 x 3PF29,6B525INB(XXX)	40
GE3RTM50.400R160	50	1,4	72,2	300 x 200 x 260	2 x 3PF37B525INB(XXX)	50
GE3RTM75.400R160	75	0,9	108,3	360 x 230 x 305	3 x 3PF37B525INB(XXX)	75
GE3RTM100.400R160	100	0,7	144,3	360 x 250 x 305	4 x 3PF37B525INB(XXX)	100

3 Phase GE-RT3 Reactors 160 Hz - 415 V P=14% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.415R160	2,5	29,7	3,5	180 x 110 x 173	3PF3,4B525INB(XXX)	2,5
GE3RTM5.415R160	5	14,9	7,0	180 x 110 x 173	3PF6,9B525INB(XXX)	5
GE3RTM6,25.415R160	6,25	11,9	8,7	180 x 110 x 173	3PF8,6B525INB(XXX)	6,25
GE3RTM7,5.415R160	7,5	9,9	10,4	180 x 110 x 173	3PF10,3B525INB(XXX)	7,5
GE3RTM10.415R160	10	7,4	13,9	240 x 120 x 220	3PF13,8B525INB(XXX)	10
GE3RTM12,5.415R160	12,5	5,9	17,4	240 x 130 x 220	3PF17,2B525INB(XXX)	12,5
GE3RTM15.415R160	15	5,0	20,9	240 x 130 x 220	3PF20,6B525INB(XXX)	15
GE3RTM20.415R160	20	3,7	27,8	240 x 145 x 240	3PF27,5B525INB(XXX)	20
GE3RTM25.415R160	25	3,0	34,8	280 x 175 x 205	3PF34,4B525INB(XXX)	25
GE3RTM30.415R160	30	2,5	41,7	300 x 170 x 260	3PF41,3B525INB(XXX)	30
GE3RTM40.415R160	40	1,9	55,6	300 x 180 x 260	2 x 3PF27,5B525INB(XXX)	40
GE3RTM50.415R160	50	1,5	69,6	300 x 200 x 260	2 x 3PF34,4B525INB(XXX)	50
GE3RTM75.415R160	75	1,0	104,3	360 x 230 x 305	3 x 3PF34,4B525INB(XXX)	75
GE3RTM100.415R160	100	0,7	139,1	360 x 250 x 305	4 x 3PF34,4B525INB(XXX)	100

* All dimensions will be confirmed at the time of order.

**The last alphanumeric symbols is supplied at the time of order by Gruppo Energia once the desired capacitor size has been selected.

Harmonic Detuned Reactors GE-RT3
Non-Adjusted Rating

3 Phase GE-RT3 Reactors 189 Hz - 400/440 V P=7% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.400/440/189	2,5	17,3	3,2	180 x 90 x 173	3PF2,5A440INB(XXX)	2,2
RT5.400/440/189	5	8,6	6,4	180 x 90 x 173	3PF5A440INB(XXX)	4,4
RT6,25.400/440/189	6,25	6,9	8,0	180 x 90 x 173	3PF6,25A440INB(XXX)	5,6
RT7,5.400/440/189	7,5	5,8	9,6	180 x 90 x 173	3PF7,5A440INB(XXX)	6,7
RT10.400/440/189	10	4,3	12,8	180 x 102 x 173	3PF10A440INB(XXX)	8,9
RT12,5.400/440/189	12,5	3,5	16,0	180 x 113 x 173	3PF12,5A440INB(XXX)	11,1
RT15.400/440/189	15	2,9	19,2	180 x 128 x 173	3PF15A440INB(XXX)	13,3
RT20.400/440/189	20	2,2	25,7	240 x 160 x 185	3PF20A440INB(XXX)	17,8
RT25.400/440/189	25	1,7	32,1	240 x 160 x 185	3PF25A440INB(XXX)	22,2
RT30.400/440/189	30	1,4	38,5	250 x 165 x 205	3PF30A440INB(XXX)	26,7
RT40.400/440/189	40	1,1	51,3	250 x 175 x 205	2 x 3PF20A440INB(XXX)	35,5
RT50.400/440/189	50	0,9	64,1	250 x 175 x 205	2 x 3PF25A440INB(XXX)	44,4
RT75.400/440/189	75	0,6	96,2	300 x 175 x 260	3 x 3PF25A440INB(XXX)	66,6
RT100.400/440/189	100	0,4	128,3	300 x 200 x 260	4 x 3PF25A440INB(XXX)	88,9

3 Phase GE-RT3 Reactors 189 Hz - 415/450 V P=7% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.415/450/189	2,5	18,0	3,2	180 x 90 x 173	3PF2,5A450INB(XXX)	2,29
RT5.415/450/189	5	9,0	6,4	180 x 90 x 173	3PF5A450INB(XXX)	4,57
RT6,25.415/450/189	6,25	7,2	8,0	180 x 90 x 173	3PF6,25A450INB(XXX)	5,72
RT7,5.415/450/189	7,5	6,0	9,5	180 x 90 x 173	3PF7,5A450INB(XXX)	6,86
RT10.415/450/189	10	4,5	12,7	180 x 102 x 173	3PF10A450INB(XXX)	9,15
RT12,5.415/450/189	12,5	3,6	15,9	180 x 113 x 173	3PF12,5A450INB(XXX)	11,43
RT15.415/450/189	15	3,0	19,1	180 x 128 x 173	3PF15A450INB(XXX)	13,72
RT20.415/450/189	20	2,3	25,4	240 x 160 x 185	3PF20A450INB(XXX)	18,29
RT25.415/450/189	25	1,8	31,8	240 x 160 x 185	3PF25A450INB(XXX)	22,86
RT30.415/450/189	30	1,5	38,2	250 x 165 x 205	3PF30A450INB(XXX)	27,44
RT40.415/450/189	40	1,1	50,9	250 x 175 x 205	2 x 3PF20A450INB(XXX)	36,58
RT50.415/450/189	50	0,9	63,6	250 x 175 x 205	2 x 3PF25A450INB(XXX)	45,73
RT75.415/450/189	75	0,6	95,4	300 x 175 x 260	3 x 3PF25A450INB(XXX)	68,59
RT100.415/450/189	100	0,5	127,2	300 x 200 x 260	4 x 3PF25A450INB(XXX)	91,45

3 Phase GE-RT3 Reactors 134 Hz - 400/480 V P=14% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.400/480/134	2,5	41,1	2,9	180 x 110 x 173	3PF2,5A480INB(XXX)	2,0
RT5.400/480/134	5	20,5	5,8	180 x 110 x 173	3PF5A480INB(XXX)	4,0
RT6,25.400/480/134	6,25	16,4	7,3	180 x 110 x 173	3PF6,25A480INB(XXX)	5,0
RT7,5.400/480/134	7,5	13,7	8,7	180 x 110 x 173	3PF7,5A480INB(XXX)	6,1
RT10.400/480/134	10	10,3	11,7	240 x 120 x 220	3PF10A480INB(XXX)	8,1
RT12,5.400/480/134	12,5	8,2	14,6	240 x 130 x 220	3PF12,5A480INB(XXX)	10,1
RT15.400/480/134	15	6,8	17,5	240 x 130 x 220	3PF15A480INB(XXX)	12,1
RT20.400/480/134	20	5,1	23,3	240 x 145 x 240	3PF20A480INB(XXX)	16,1
RT25.400/480/134	25	4,1	29,1	280 x 175 x 205	3PF25A480INB(XXX)	20,2
RT30.400/480/134	30	3,4	35,0	300 x 170 x 260	3PF30A480INB(XXX)	24,2
RT40.400/480/134	40	2,6	46,6	300 x 180 x 260	2 x 3PF20A480INB(XXX)	32,3
RT50.400/480/134	50	2,1	58,3	300 x 200 x 260	2 x 3PF25A480INB(XXX)	40,4
RT75.400/480/134	75	1,4	87,4	360 x 230 x 305	3 x 3PF25A480INB(XXX)	60,6
RT100.400/480/134	100	1,0	116,6	360 x 250 x 305	4 x 3PF25A480INB(XXX)	80,7

3 Phase GE-RT3 Reactors 134 Hz - 415/525 V P=14% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.415/525/134	2,5	49,1	2,5	180 x 110 x 173	3PF2,5A525INB(XXX)	1,8
RT5.415/525/134	5	24,6	5,1	180 x 110 x 173	3PF5A525INB(XXX)	3,6
RT6,25.415/525/134	6,25	19,7	6,3	180 x 110 x 173	3PF6,25A525INB(XXX)	4,5
RT7,5.415/525/134	7,5	16,4	7,6	180 x 110 x 173	3PF7,5A525INB(XXX)	5,4
RT10.415/525/134	10	12,3	10,1	240 x 120 x 220	3PF10A525INB(XXX)	7,3
RT12,5.415/525/134	12,5	9,8	12,6	240 x 130 x 220	3PF12,5A525INB(XXX)	9,1
RT15.415/525/134	15	8,2	15,2	240 x 130 x 220	3PF15A525INB(XXX)	10,9
RT20.415/525/134	20	6,1	20,2	240 x 145 x 240	3PF20A525INB(XXX)	14,5
RT25.415/525/134	25	4,9	25,3	280 x 175 x 205	3PF25A525INB(XXX)	18,2
RT30.415/525/134	30	4,1	30,3	300 x 170 x 260	3PF30A525INB(XXX)	21,8
RT40.415/525/134	40	3,1	40,4	300 x 180 x 260	2 x 3PF20A525INB(XXX)	29,1
RT50.415/525/134	50	2,5	50,5	300 x 200 x 260	2 x 3PF25A525INB(XXX)	36,3
RT75.415/525/134	75	1,6	75,8	360 x 230 x 305	3 x 3PF25A525INB(XXX)	54,5
RT100.415/525/134	100	1,2	101,1	360 x 250 x 305	4 x 3PF25A525INB(XXX)	72,7

3 Phase GE-RT3 Reactors 189 Hz - 690/780 V P=7% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.690/780/189	2,5	54,2	1,8	On request	3PF2,5A780INB(XXX)	2,1
RT5.690/780/189	5	27,1	3,5	On request	3PF5A780INB(XXX)	4,2
RT6,25.690/780/189	6,25	21,7	4,4	On request	3PF6,25A780INB(XXX)	5,3
RT7,5.690/780/189	7,5	18,1	5,3	On request	3PF7,5A780INB(XXX)	6,3
RT10.690/780/189	10	13,6	7,0	On request	3PF10A780INB(XXX)	8,4
RT12,5.690/780/189	12,5	10,8	8,8	On request	3PF12,5A780INB(XXX)	10,5
RT15.690/780/189	15	9,0	10,6	On request	3PF15A780INB(XXX)	12,6
RT20.690/780/189	20	6,8	14,1	On request	3PF20A780INB(XXX)	16,8
RT25.690/780/189	25	5,4	17,6	240 x 145 x 240	3PF25A780INB(XXX)	21,0
RT30.690/780/189	30	4,5	21,1	On request	3PF30A780INB(XXX)	25,2
RT40.690/780/189	40	3,4	28,2	On request	2 x 3PF20A780INB(XXX)	33,7
RT50.690/780/189	50	2,7	35,2	300 x 160 x 300	2 x 3PF25A780INB(XXX)	42,1
RT75.690/780/189	75	1,8	52,8	On request	3 x 3PF25A780INB(XXX)	63,1
RT100.690/780/189	100	1,4	70,4	On request	4 x 3PF25A780INB(XXX)	84,1

3 Phase GE-RT3 Reactors 189 Hz - 690 V P=7% 50 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.690R189	2,5	45,6	2,1	On request	3PF2,9A776INB(XXX)	2,5
GE3RTM5.690R189	5	22,8	4,2	On request	3PF5,9A777INB(XXX)	5
GE3RTM6,25.690R189	6,25	18,3	5,2	On request	3PF7,4A778INB(XXX)	6,25
GE3RTM7,5.690R189	7,5	15,2	6,3	On request	3PF8,9A779INB(XXX)	7,5
GE3RTM10.690R189	10	11,4	8,4	On request	3PF11,9A780INB(XXX)	10
GE3RTM12,5.690R189	12,5	9,1	10,5	On request	3PF14,9A780INB(XXX)	12,5
GE3RTM15.690R189	15	7,6	12,6	On request	3PF17,8A780INB(XXX)	15
GE3RTM20.690R189	20	5,7	16,7	On request	3PF23,8A780INB(XXX)	20
GE3RTM25.690R189	25	4,6	20,9	240 x 145 x 240	3PF29,7A780INB(XXX)	25
GE3RTM30.690R189	30	3,8	25,1	On request	3PF35.7A780INB(XXX)	30
GE3RTM40.690R189	40	2,9	33,5	On request	2 x 3PF23,8A780INB(XXX)	40
GE3RTM50.690R189	50	2,3	41,8	300 x 160 x 300	2 x 3PF29,7A780INB(XXX)	50
GE3RTM75.690R189	75	1,5	62,8	On request	3 x 3PF29,7A780INB(XXX)	75
GE3RTM100.690R189	100	1,1	83,7	On request	4 x 3PF29,7A780INB(XXX)	100

* All dimensions will be confirmed at the time of order.

**The last alphanumeric symbols is supplied at the time of order by Gruppo Energia once the desired capacitor size has been selected.

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Harmonic Detuned Reactors GE-RT3
Non-Adjusted Rating

3 Phase GE-RT3 Reactors 227 Hz - 400/440 V P=7% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.400/440/227	2,5	14,4	3,2	180 x 90 x 173	3PF2,5B440INB(XXX)	2,2
RT5.400/440/227	5	7,2	6,4	180 x 90 x 173	3PF5B440INB(XXX)	4,4
RT6,25.400/440/227	6,25	5,8	8,0	180 x 90 x 173	3PF6,25B440INB(XXX)	5,6
RT7,5.400/440/227	7,5	4,8	9,6	180 x 90 x 173	3PF7,5B440INB(XXX)	6,7
RT10.400/440/227	10	3,6	12,8	180 x 102 x 173	3PF10B440INB(XXX)	8,9
RT12,5.400/440/227	12,5	2,9	16,0	180 x 113 x 173	3PF12,5B440INB(XXX)	11,1
RT15.400/440/227	15	2,4	19,2	180 x 128 x 173	3PF15B440INB(XXX)	13,3
RT20.400/440/227	20	1,8	25,7	240 x 160 x 185	3PF20B440INB(XXX)	17,8
RT25.400/440/227	25	1,4	32,1	240 x 160 x 185	3PF25B440INB(XXX)	22,2
RT30.400/440/227	30	1,2	38,5	250 x 165 x 205	3PF30B440INB(XXX)	26,7
RT40.400/440/227	40	0,9	51,3	250 x 175 x 205	2 x 3PF20B440INB(XXX)	35,5
RT50.400/440/227	50	0,7	64,1	250 x 175 x 205	2 x 3PF25B440INB(XXX)	44,4
RT75.400/440/227	75	0,5	96,2	300 x 175 x 260	3 x 3PF25B440INB(XXX)	66,6
RT100.400/440/227	100	0,4	128,3	300 x 200 x 260	4 x 3PF25B440INB(XXX)	88,9

3 Phase GE-RT3 Reactors 227 Hz - 415/450 V P=7% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.415/450/227	2,5	15,0	3,2	180 x 90 x 173	3PF2,5B450INB(XXX)	2,29
RT5.415/450/227	5	7,5	6,4	180 x 90 x 173	3PF5B450INB(XXX)	4,57
RT6,25.415/450/227	6,25	6,0	8,0	180 x 90 x 173	3PF6,25B450INB(XXX)	5,72
RT7,5.415/450/227	7,5	5,0	9,5	180 x 90 x 173	3PF7,5B450INB(XXX)	6,86
RT10.415/450/227	10	3,8	12,7	180 x 102 x 173	3PF10B450INB(XXX)	9,15
RT12,5.415/450/227	12,5	3,0	15,9	180 x 113 x 173	3PF12,5B450INB(XXX)	11,43
RT15.415/450/227	15	2,5	19,1	180 x 128 x 173	3PF15B450INB(XXX)	13,72
RT20.415/450/227	20	1,9	25,4	240 x 160 x 185	3PF20B450INB(XXX)	18,29
RT25.415/450/227	25	1,5	31,8	240 x 160 x 185	3PF25B450INB(XXX)	22,86
RT30.415/450/227	30	1,3	38,2	250 x 165 x 205	3PF30B450INB(XXX)	27,44
RT40.415/450/227	40	0,9	50,9	250 x 175 x 205	2 x 3PF20B450INB(XXX)	36,58
RT50.415/450/227	50	0,8	63,6	250 x 175 x 205	2 x 3PF25B450INB(XXX)	45,73
RT75.415/450/227	75	0,5	95,4	300 x 175 x 260	3 x 3PF25B450INB(XXX)	68,59
RT100.415/450/227	100	0,4	127,2	300 x 200 x 260	4 x 3PF25B450INB(XXX)	91,45

3 Phase GE-RT3 Reactors 160 Hz - 400/480 V P=14% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.400/480/160	2,5	34,2	2,9	180 x 110 x 173	3PF2,5B480INB(XXX)	2,0
RT5.400/480/160	5	17,1	5,8	180 x 110 x 173	3PF5B480INB(XXX)	4,0
RT6,25.400/480/160	6,25	13,7	7,3	180 x 110 x 173	3PF6,25B480INB(XXX)	5,0
RT7,5.400/480/160	7,5	11,4	8,7	180 x 110 x 173	3PF7,5B480INB(XXX)	6,1
RT10.400/480/160	10	8,6	11,7	240 x 120 x 220	3PF10B480INB(XXX)	8,1
RT12,5.400/480/160	12,5	6,8	14,6	240 x 130 x 220	3PF12,5B480INB(XXX)	10,1
RT15.400/480/160	15	5,7	17,5	240 x 130 x 220	3PF15B480INB(XXX)	12,1
RT20.400/480/160	20	4,3	23,3	240 x 145 x 240	3PF20B480INB(XXX)	16,1
RT25.400/480/160	25	3,4	29,1	280 x 175 x 205	3PF25B480INB(XXX)	20,2
RT30.400/480/160	30	2,9	35,0	300 x 170 x 260	3PF30B480INB(XXX)	24,2
RT40.400/480/160	40	2,1	46,6	300 x 180 x 260	2 x 3PF20B480INB(XXX)	32,3
RT50.400/480/160	50	1,7	58,3	300 x 200 x 260	2 x 3PF25B480INB(XXX)	40,4
RT75.400/480/160	75	1,1	87,4	360 x 230 x 305	3 x 3PF25B480INB(XXX)	60,6
RT100.400/480/160	100	0,9	116,6	360 x 250 x 305	4 x 3PF25B480INB(XXX)	80,7

3 Phase GE-RT3 Reactors 160 Hz - 415/525 V P=14% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.415/525/160	2,5	40,9	2,5	180 x 110 x 173	3PF2,5B525INB(XXX)	1,8
RT5.415/525/160	5	20,5	5,1	180 x 110 x 173	3PF5B525INB(XXX)	3,6
RT6,25.415/525/160	6,25	16,4	6,3	180 x 110 x 173	3PF6,25B525INB(XXX)	4,5
RT7,5.415/525/160	7,5	13,6	7,6	180 x 110 x 173	3PF7,5B525INB(XXX)	5,4
RT10.415/525/160	10	10,2	10,1	240 x 120 x 220	3PF10B525INB(XXX)	7,3
RT12,5.415/525/160	12,5	8,2	12,6	240 x 130 x 220	3PF12,5B525INB(XXX)	9,1
RT15.415/525/160	15	6,8	15,2	240 x 130 x 220	3PF15B525INB(XXX)	10,9
RT20.415/525/160	20	5,1	20,2	240 x 145 x 240	3PF20B525INB(XXX)	14,5
RT25.415/525/160	25	4,1	25,3	280 x 175 x 205	3PF25B525INB(XXX)	18,2
RT30.415/525/160	30	3,4	30,3	300 x 170 x 260	3PF30B525INB(XXX)	21,8
RT40.415/525/160	40	2,6	40,4	300 x 180 x 260	2 x 3PF20B525INB(XXX)	29,1
RT50.415/525/160	50	2,0	50,5	300 x 200 x 260	2 x 3PF25B525INB(XXX)	36,3
RT75.415/525/160	75	1,4	75,8	360 x 230 x 305	3 x 3PF25B525INB(XXX)	54,5
RT100.415/525/160	100	1,0	101,1	360 x 250 x 305	4 x 3PF25B525INB(XXX)	72,7

3 Phase GE-RT3 Reactors 227 Hz - 690/780 V P=7% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
RT2,5.690/780/227	2,5	45,2	1,8	On request	3PF2,5B780INB(XXX)	2,1
RT5.690/780/227	5	22,6	3,5	On request	3PF5B780INB(XXX)	4,2
RT6,25.690/780/227	6,25	18,1	4,4	On request	3PF6,25B780INB(XXX)	5,3
RT7,5.690/780/227	7,5	15,1	5,3	On request	3PF7,5B780INB(XXX)	6,3
RT10.690/780/227	10	11,3	7,0	On request	3PF10B780INB(XXX)	8,4
RT12,5.690/780/227	12,5	9,0	8,8	On request	3PF12,5B780INB(XXX)	10,5
RT15.690/780/227	15	7,5	10,6	On request	3PF15B780INB(XXX)	12,6
RT20.690/780/227	20	5,6	14,1	On request	3PF20B780INB(XXX)	16,8
RT25.690/780/227	25	4,5	17,6	240 x 145 x 240	3PF25B780INB(XXX)	21,0
RT30.690/780/227	30	3,8	21,1	On request	3PF30B780INB(XXX)	25,2
RT40.690/780/227	40	2,8	28,2	On request	2 x 3PF20B780INB(XXX)	33,7
RT50.690/780/227	50	2,3	35,2	300 x 160 x 300	2 x 3PF25B780INB(XXX)	42,1
RT75.690/780/227	75	1,5	52,8	On request	3 x 3PF25B780INB(XXX)	63,1
RT100.690/780/227	100	1,1	70,4	On request	4 x 3PF25B780INB(XXX)	84,1

3 Phase GE-RT3 Reactors 227 Hz - 690 V P=7% 60 Hz

Order Code	Qr	Hn	In	AxBxC*	Suitable Capacitor**	Q(L-C)
	kVar	3 x µF	A	mm		kVar
GE3RTM2,5.690R227	2,5	38,0	2,1	On request	3PF2,9B776INB(XXX)	2,5
GE3RTM5.690R227	5	19,0	4,2	On request	3PF5,9B777INB(XXX)	5
GE3RTM6,25.690R227	6,25	15,2	5,2	On request	3PF7,4B778INB(XXX)	6,25
GE3RTM7,5.690R227	7,5	12,7	6,3	On request	3PF8,9B779INB(XXX)	7,5
GE3RTM10.690R227	10	9,5	8,4	On request	3PF11,9B780INB(XXX)	10
GE3RTM12,5.690R227	12,5	7,6	10,5	On request	3PF14,9B780INB(XXX)	12,5
GE3RTM15.690R227	15	6,3	12,6	On request	3PF17,8B780INB(XXX)	15
GE3RTM20.690R227	20	4,8	16,7	On request	3PF23,8B780INB(XXX)	20
GE3RTM25.690R227	25	3,8	20,9	240 x 145 x 240	3PF29,7B780INB(XXX)	25
GE3RTM30.690R227	30	3,2	25,1	On request	3PF35.7B780INB(XXX)	30
GE3RTM40.690R227	40	2,4	33,5	On request	2 x 3PF23,8B780INB(XXX)	40
GE3RTM50.690R227	50	1,9	41,8	300 x 160 x 300	2 x 3PF29,7B780INB(XXX)	50
GE3RTM75.690R227	75	1,3	62,8	On request	3 x 3PF29,7B780INB(XXX)	75
GE3RTM100.690R227	100	1,0	83,7	On request	4 x 3PF29,7B780INB(XXX)	100

Power Analyzer and Data Logger
DPA007L2K

DPA007L2K power analyzer is perfect solution for the control and analyzing of the single and three phase LV and MV energy distribution systems.
Thanks to its wide range of measurements in all four quadrants, the advanced multimeter is able to detect problems in your electrical which otherwise could put the quality and availability of electricity at risk.
It monitors and records, thanks to internal 512 MB memory, all common parameters like frequency, line and phase voltages, currents, unbalances, active and reactive powers, power factors and up to 50 harmonics as well as the total harmonic distortion.
The large color LCD display allows you to conveniently and directly control the actual waveshapes (oscillograms) of all measured voltages and currents, phasor diagram and harmonic graphic of THDi and THDu directly from the device.

Technical Specifications

General specification	
Standards:	IEC 61557-12
Origin:	100% made in Italy
Supply voltage:	110 ÷ 250 Vac/dc
Working frequency:	50/60 Hz
Measured Voltage:	180÷250VAC (L-N)/312 ÷ 433VAC (L-L)
Current Inputs:	1 ÷ 5 A AC
Internal memory:	512MB for recording
Communication:	USB, Modbus TCP, USB
Dimension:	96×58x96 mm (WxDxH)
Installation cutout:	92+1 x 92+1 mm
Protection rating:	IP40 (optional IP54) front panel
Operating temperature:	-25 °C +60 °C

Metering	
Voltage (ULN, ULL):	U1, U2, U3, U12, U23, U31 [act, avg, avg max, avg min]
Current (I):	IL1, IL2, IL3 [act, avg, avg max, avg min]
Power (P):	P1, P2, P3, 3P (import, export, total, 1st harmonic) [act, avg, avg max, avg min]
Reactive Power:	Q1, Q2, Q3, 3Q (import, export, total, 1st harmonic) [act, avg, avg max, avg min]
Apparent Power (S):	S1, S2, S3, 3S [act, avg, avgmax, avgmin]
Harm. Distortion Power (D):	D1, D2, D3 [act, avg, avg max, avg min]
Power Factor (PF), cosφ:	PF1, PF2, PF3, 3PF, cosφ1, cosφ2, cosφ3, 3cosφ [act, avg, avg max, avg min]
Symmetrical Components:	zero, negative and positive sequence components of voltage and current
Unbalance factor:	unbI, unbU, φnsl
Voltage THD (THDU):	THDU1, THDU2, THDU3, THDU12, THDU23, THDU31
Current THD (THDI):	THDI1, THDI2, THDI3
Individual Harmonics:	Harmonics 1st to 50th of U and I, their angles and interharm subgroups (PQ S)
Fundament. Harmonic (Ufh, Ifh):	U1fh, U2fh, U3fh, I1fh, I2fh, I3fh
Active Energy:	class 0.5S (62053-22), import/export, per phase, per tariff, total
Reactive Energy:	class 1S (62053-24), 4 quadrants, per phase, per tariff, total

Data Logging	
Main Archive:	min., max., avg. values of ULN, ULL, I, P, Q, S, D, THDU, THDI, f, Avg. values of harmonics and their angles, Ufh, Ifh,Symmetrical components, Unb. factors, state of I/Os
Electricity Meter Readings:	Active and reactive imp. and exp. energy per phase (L1, L2, L3) and per tariff (T1, T2, T3)

Alarms:	Logical functions, under/over limit of U, I, P, Q, S, unbl, THD, cos, f
Inputs/Outputs:	1 relay output (RO), 1 digital output (DO) and 1 digital input (DI)
RTC:	seconds, minutes, hours, days, months, years

Power Factor Controllers
EDR - ERDS series

Power Controllers ERD - ERDS series are fully automatic, starting can be done manually by parameters settings before connecting or in automatic mode without any preliminary configuration using a standard connection.

The simplicity and intuitiveness of this reliable equipment are its advantages.

Common characteristics of power controllers ERD / ERDS series

- Flush-mount type
- Programming from front panel
- Possible connection in single or three phase lines
- Measurement of harmonics (THD) up to 64-th order
- Measurement COS φ Inductive & Capacitive
- Measurement Phase to Phase Voltage & Current
- Measurement Reactive Power needed
- Measurement COS φ Desired
- Measurement TOTAL HARMONIC DISTORSION
- Reactive power measurement per step installed
- Capacitor over-current protection
- Capacitors protection against harmonics
- Capacitors undervoltage protection
- Capacitors overvoltage protection
- Integrated temperature sensor
- Adjustable Alarms
- Anti-Hunting function
- Fixed step programmable
- Integrated temperature sensor
- Adjustable Alarms

Special features ERD 6 / ERD 12

- All more requested parameters are integrated in this essential model, with a very competitive price
- Designed for LV application
- Simple and intuitive connection

Special features ERDS 7 / ERDS 13

- Modern execution, LCD display with text in 4 languages, simple connection, intelligent software, system status instant view are the particularities of this equipment simultaneously with a attractive price
- Possible connection in single or three phase lines
- Power factor correction by single phase
- Possibility of use in cogeneration systems thanks to the power measurement in all four quadrants
- Communication ports RS 232 / RS 485 / Modbus RTU/ Ethernet
- LCD graphic dispaly 128x80

Power Factor Controllers
EDR - ERDS series

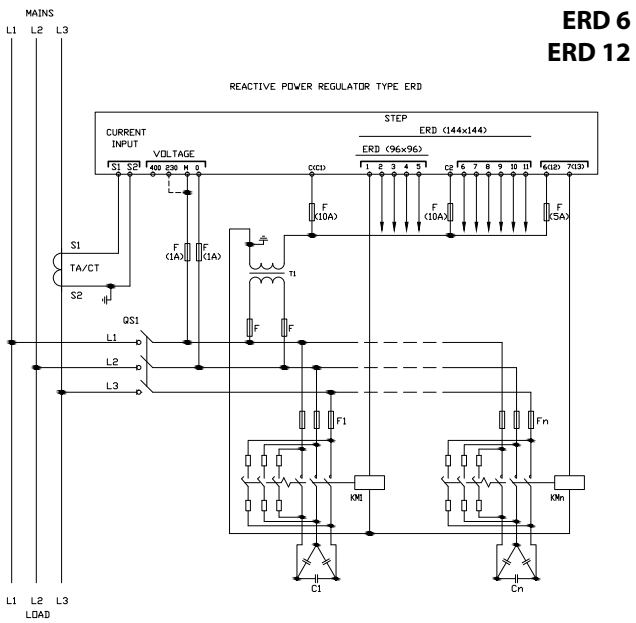
ERD / ERDS Technical Specifications

	ERD6	ERD12	ERDS7	ERDS13
Supply voltage	230 – 400 Vac (range 220 – 440 Vac)			
Operating limits (Ue)	-15% +10%			
Nominal frequency	50 – 60 Hz (range 47 – 63 Hz)			
Power consumption (max. AC)	5,8 VA	6,1 VA	5,5 VA	5,5 VA
Immunity time for microbreakings	<6 ms		<30 ms	
Display type	3 Digit - 7 Segment		LCD 64x128	
Rated current (CT)	5 A		1 A or 5 A	
Voltage Reading Limits (N/Lx)	180 – 485 Vac	195 – 460 Vac	10 – 460 Vac	
Current Reading Limits (CT)	0,125 – 5,5 A		0,020 – 5,5 A	
Measuring Values	True RMS			
Power Factor Correction	0,85 Inductive 0,95 Capacitive		0,85 Inductive 0,95 Capacitive (operates in all four-quadrantes)	
FFT - Harmonic Spectrum	THD% 64 st			
Number of Output	6	12	7 Expandable up to 47	13 Expandable up to 53

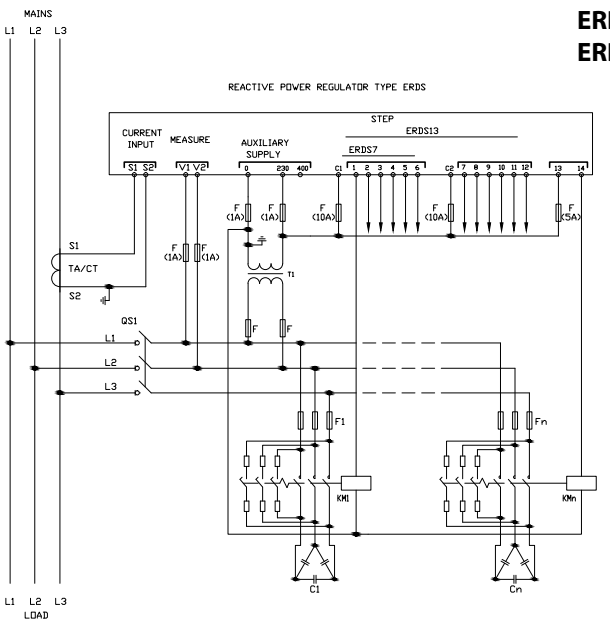
	ERD6	ERD12	ERDS7	ERDS13
Serial Interface	Optional	TTL-standard	RS-485 (not insulate)	
Communication Protocol	Optional	Owner Modbus RTU	Owner Modbus RTU or TCP/IP	
Connector type	Optional	RJ11	----	
Working temperature	- 40°C + 55° C			
Storage temperature	- 40°C + 55° C			
Electrical Insulation	4 kV			
Overvoltage Category	II			
Protection degree	IP41 front cover – IP20 terminal block connections			
Pollution degree	2			
Relative Humidity w/o cond.	RH% 90			
Altitude up to	2000 m			
Weight	0,37 Kg.	0,70 Kg.	0,65 Kg.	0,73 Kg.
Dimensions	96x96x74	144x144x68	144x144x68	

Wiring Diagram

ERD 6
ERD 12



ERDS 7
ERDS 13



*All dimensions are in "mm" and will be confirmed at the time of order.

Power Factor Controllers
ERN series

Power Controllers ERN series are fully automatic, this equipment does not need any preliminary configuration using a standard connection.

Smart operating algorithm ensures the durability and correct function of power factor correction equipment in order to improwe the power factor.

Common characteristics of power controllers ERN series

Flush-mount type
LED display 3 digits 7 segments
Programming from front panel
Possible connection in single or three phase lines
Possibility of use in cogeneration systems thanks to a power measurement in all four quadrants
Measurement of harmonics (THD) up to 19-th order
Displaying on the screen the CHL indicator (harmonic load of the capacitor)
Capacitors protection against harmonics (if the hazardous situation calculated on the basis of THD and CHL measurements is detected, shutdown of all capacitor sections)
Registration of critical indicators of the network condition at the time of section shutdown
Algorithm of step selection
Reactive power measurement per step installed
Balanced use of steps with same power rating
Adjustable reconnecting time of power steps
Registration in hours and in number the operations for each power steps
Step failure alarm
Capacitor over-current protection
Capacitors protection against harmonics
Capacitors undervoltage protection
Capacitors overvoltage protection
Integrated temperature sensor
Adjustable Alarms

Special features ERN 11005 / ERN 11007

Designed for LV application, smart software incorporated in a small size, favorable price - quality combination
Current measurement sensitivity 20 mA
Calculation of the main harmonic components of the active and reactive current and voltage

Special features ERN 11206 / ERN 11214

Designed for LV-MV-HV application, high reliability even under hurd network condition, smart protection of capacitors & reasonable price
Current measurement sensitivity 2 mA
Input for 2nd tariff
Instantaneous measurement of current & voltage, active, reactive and apparent power and current & voltage harmonic distortion
Communication ports RS 232 / RS 485 - Integrated
Adjustable reconnecting delay time of power steps

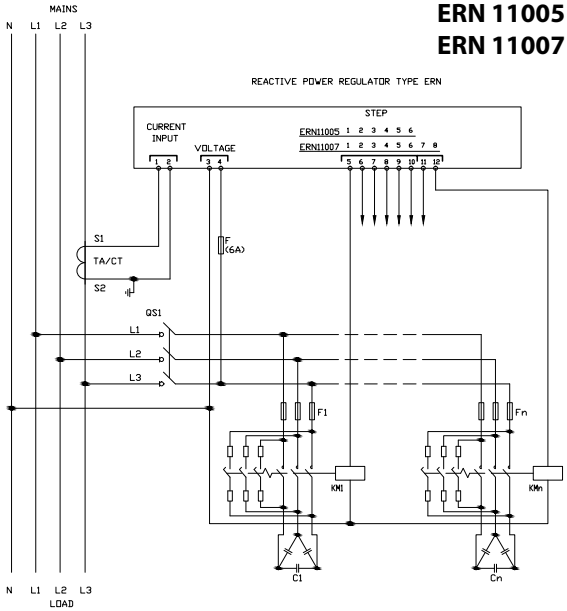
ERN TECHNICAL SPECIFICATIONS

	ERN 11005	ERN 11007	ERN 11206	ERN 11214
Power factor desired	0,80 ind. through 0,80 cap.			
Connection time	5 to 1200 seconds			
Smallest capacitor current	(0,02 A ÷ 2 A) x CT		(0,002 A ÷ 2 A) x CT ratio	
Compensation section values setting	Automatic or Manual			
Connection configuration setting	Automatic or Manual			
Power supply	80 ÷ 275 V AC 43 ÷ 67 Hz, 5VA		90 ÷ 275 V AC (43÷67 Hz) or 100÷300 V DC, 7VA	
Measurement voltage	The same as power supply voltage		57.7 ÷ 690 V AC, +10/-20%, 43 ÷ 67 Hz	
Operating temperature	-40 °C +60 °C			

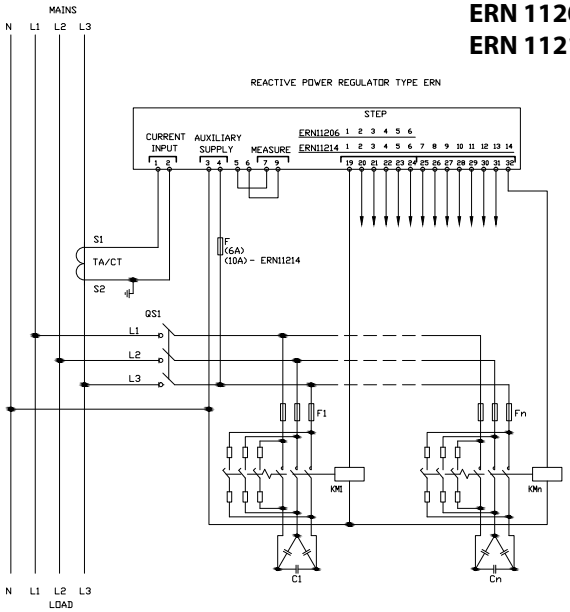
	ERN 11005	ERN 11007	ERN 11206	ERN 11214
Measurement current (galv. isolated)	0,02 ÷ 7 A		0,002 ÷ 7 A	
Peak overload	70 A / 1 second; maximum repetition frequency > 5 minutes			
Number of output relays	6	8	6	14
Output relay load rating	250 V AC / 4 A 110 V DC / 0.3 A			
Enclosure IP front panel	IP 40 (IP 54 option)			
Enclosure IP back panel	IP 20			
Dimensions*	96x96	96x96	144x144	144x144
Weight	0,3 kg max.	0,3 kg max.	0,7 kg max.	0,7 kg max.

WIRING DIAGRAM

ERN 11005
ERN 11007



ERN 11206
ERN 11214



*All dimensions are in "mm" and will be confirmed at the time of order.

Power Factor Controllers
ERP - ERGP series

The power controllers ERP-ERGP series are fully automatic.

This smart equipment can be easily connected: all you have to do is to set the parameters and everything else works automatically.

The new design, the expandable power steps and the various additional modules that enhance the performance make the Erp - Ergp controllers very attractive

Common characteristics of power controllers ERP-ERGP series

- Flush-mount type
- LCD display
- Programming from front panel
- Suitable for LV, MV and HV application (connection through VTs)
- Voltage input separated from power supply
- Possible connection in single or three phase lines
- Possibility of use in cogeneration systems thanks to the power measurement in all four quadrants
- Wide selection of electrical measurements, including voltage and current THD
- High accuracy TRMS measurements
- Reactive power measurement per step installed
- Balanced use of steps with same power rating
- Registration in hours and in number the operations for each power steps
- Step failure alarm
- Capacitor over-current protection
- Capacitors protection against harmonics
- Capacitors undervoltage protection
- Capacitors overvoltage protection
- Integrated temperature sensor
- Adjustable Alarms
- Expansion bus for MERP series expansion modules (additional relay outputs (steps)) – Communication ports RS 232 / RS 485, using additional Modules

Special features ERP3/ ERP5/ ERP8

- Modern execution, LCD display with text in 6 languages, simple connection, smart software and reasonable price
- Voltage and current harmonic-content measurement up to 15° order
- Ethernet interface (ERP8 only)

Special features ERGP8

- Modern execution, LCD- Graphics display with text in 10 languages, Highly intelligent software, network analysis shown on display are the advantages of this justifiably expensive model
- Voltage and current harmonic-content measurement up to 31st order
- Power factor correction by single phase
- Logging of up to 250 events
- LCD graphic dispaly 128x80

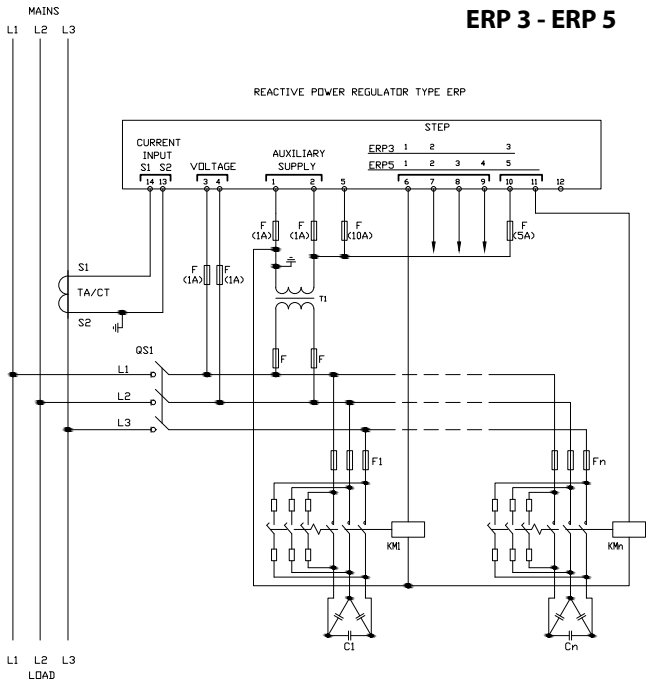
ERP / ERGP TECHNICAL SPECIFICATIONS

	ERP 3	ERP 5	ERP 8	ERGP 8
Supply rated voltage	100 - 440 Vac 110 - 250 Vdc			
Supply rated frequency	45 - 66 Hz			
Measuring voltage range	50 - 720 V L-L 415 Vac L-N			
Maximum rated voltage inputs Ue	600 Vac L-L (346 Vac L-N)			
Rated current input	1A or 5 A			

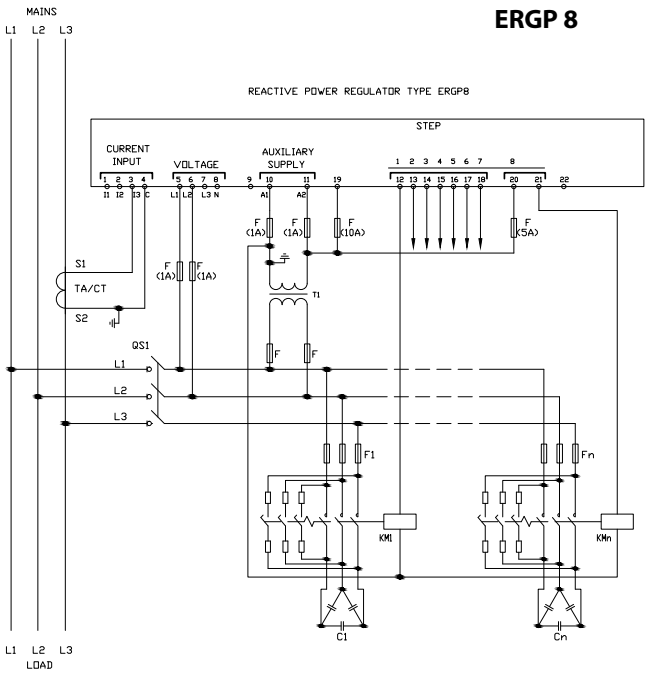
	ERP 3	ERP 5	ERP 8	ERGP 8
Overload peak	50 A for 1 second		0,002 ÷ 7 A	
Enclosure IP front panel	IP 54	IP 54	IP 65	IP 65
Enclosure IP back panel	IP 20			
Dimensions*	96x96	96x96	144x144	144x144
Weight	0,32 kg max.	0,32 kg max.	0,64 kg max.	0,98 kg max.

WIRING DIAGRAM

ERP 3 - ERP 5



ERGP 8



*All dimensions are in "mm" and will be confirmed at the time of order.

Contactors For Capacitors Switching

CSC Duty Contactors are designed for safely switching capacitors without using choke-type inductors.

Since this operation is associated with high inrush current, all Gruppo Energia CSC Contactors are standardly equipped with six quick discharge damping resistors (two per phase) and three auxiliary contacts that limit peak current during the first stage of switching.

Finally, the nominal current is transferred through the main contacts, which are switched-on, while the auxiliary contacts are switched off.

Gruppo Energia Contactors are a cost-optimized and low maintenance solution ensuring:

- Excellent damping of inrush current;
- Watt loss reduction during "ON" mode to save energy;
- Equipment life cycle enhancement;
- Downtime reduction;
- Power quality improvement.

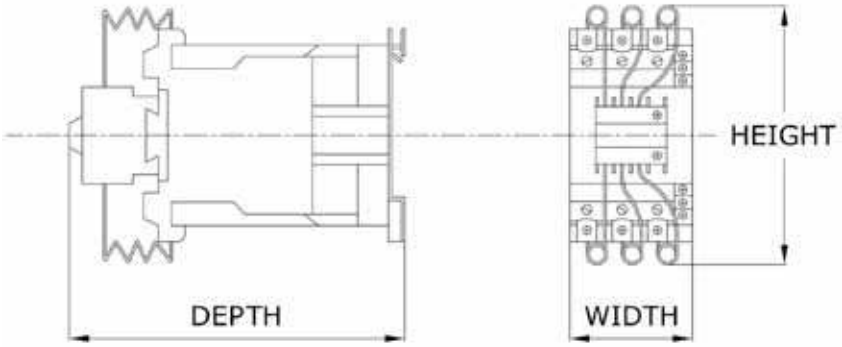
CSC Contactors General Specification

General	
Standards:	IEC 60947-4-1 EN 60947-4-1
Origin:	100% made in Italy
Voltage range:	220 V to 690 V
Frequency:	50 Hz — 60 Hz
Coil operating voltage:	220 V — 240 V
Number of pole:	3
Terminal:	Screw

CSC Contactors Selection Table

ORDER CODE	POWER			DIMENSIONS*			WEIGHT	TIGHTENING TORQUE	MAXIMUM OPERATING RATE	ELECTRICAL LIFE
	400 V-440 V kVar	220 V-240 V kVar	660 V-690 V kVar	W (mm)	D (mm)	H (mm)	Kg	Nm	Operations / Hour	Operations
CSC02,5	2,5	1,4	3	45	75	74	0,36	1,2	240	200000
CSC05	5	2,8	6,5	45	75	74	0,37	1,2	240	200000
CSC07,5	7,5	4	9	45	130	117	0,50	1,2	240	200000
CSC010	10	5,5	12,5	45	130	117	0,51	1,2	240	200000
CSC012,5	12,5	6,7	18	45	130	117	0,52	1,2	240	200000
CSC016,7	16,7	8,5	24	45	130	122	0,60	1,7	240	200000
CSC020	20	10	30	56	140	130	0,76	1,9	100	100000
CSC025	25	15	36	56	140	135	0,78	2,5	100	100000
CSC033,3	33,3	20	48	75	180	150	1,71	5,0	100	100000
CSC040	40	25	58	75	180	150	1,72	5,0	100	100000
CSC050	50	30	72	75	180	150	1,72	5,0	100	100000
CSO060	60	40	92	85	200	157	1,88	9,0	100	100000
CSS075	75	50	120	85	200	157	1,90	9,0	100	100000
CSC080	80	48	128	120	150	186	2,40	9,0	100	100000
CSC100	100	60	143	120	150	186	2,50	9,0	100	100000

Construction Diagram



*All dimensions are in "mm" and will be confirmed at the time of order.

Load Break Switches

- Efficient and reliable construction.
- Efficient switching and long life.
- Flexibility to suit application.
- Safety built-in.
- Convenient and swift.

Main switch disconnector installed on capacitor bank is used to disconnect power factor correction panel from the main circuit.
The choice of Circuit breaker will depending on rating of the PFC equipment and the required fault current handling capacity.
The rating must be chosen as following:
• 1,5 x (Total Power / (System voltage x 1,73))
Example:
Capacitor bank with Intact PLUS capacitors.
Total Power: 250 kVar at 400 V, 50 Hz
===> 1,5 x (250 kVar / (0,4 V x 1,73)) = 1,5 x 361,3 A = 542 A
Select a 630 A switch disconnector, order code GE630K3

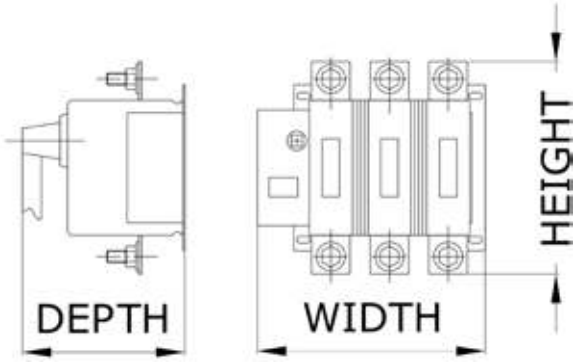
GE-VC-3 Switch Disconnectors General Characteristics

General	
Standards:	IEC 60947-3 EN 60947-3
Origin:	100% made in Italy
Frequency:	50 Hz — 60 Hz
Ambient / Cubicle service temp.:	55 °C
IP level after mounting:	IP 54

GE-VC-3 Selection Table

ORDER CODE	RATED CURRENT	OPERATED VOLTAGE	INSULATION VOLTAGE	DIMENSIONS*			WEIGHT	TERMINAL TIGHTENING TORQUE	IMPULSE WITHSTAND VOLTAGE	MINIMUM CONDUCTOR CROSS SECTION	NUMBER of POLE
	A	V	V	W (mm)	D (mm)	H (mm)	Kg	Nm	kV	Cu mmq	
GE160DM3	160	415	750	190	90	142	1,8	8	8,0	70	3
GE200DM3	200	415	750	198	105	163	3	30…44	12,0	95	3
GE250DM3	250	415	750	198	105	163	3	30…44	12,0	120	3
GE315DM3	315	415	750	198	105	163	3	30…44	12,0	185	3
GE400K3	400	415	1000	211	130	205	5,2	30…44	12,0	2 x 150	3
GE630K3	630	415	1000	244	130	223	6,2	50…75	12,0	2 x 185	3
GE800K3	800	415	1000	260	130	223	6,2	50…75	12,0	2 x 240	3
GE1000K3	1000	415	1000	383	125	352	16,3	50…75	12,0	2 x (60 x 5)	3
GE1250K3	1250	415	1000	383	125	352	16,3	50…75	12,0	2 x (80 x 5)	3
GE1600K3	1600	415	1000	383	125	352	17,5	50…75	12,0	2 x (100 x 5)	3
GE2000K3	2000	415	1000	468	271	352	37	50…75	12,0	3 x (100 x 5)	3
GE2500K3	2500	415	1000	468	271	352	37	50…75	12,0	4 x (100 x 5)	3
GE3150K3	3150	415	1000	468	271	352	37	50…75	12,0	3 x (100 x 10)	3

Construction Diagram



*All dimensions are in "mm" and will be confirmed at the time of order.

General Safety Conditions For Capacitors

Safety First

Power capacitors are electrical energy storage devices, therefore they must be always handled with caution. It happens that even after being turned off for a long period of time, they can still be charged with high voltage THAT CAN BE EVEN LETHAL. So please be extremely careful when handling capacitors and electrically connected devices. The general rules of good electrical engineering practice must be always complied with when handling live components in electrical systems.
In particular, before putting a new capacitor on duty these aspects should be checked once more:
- capacitance
- resistance of discharging devices
- overall screws tightening at the specified torque (when applicable).

A good rule of thumb is to assume that a capacitor is always charged, so before touching or being anyhow in contact with its terminals the user should discharge the capacitor itself by short circuiting its terminals to each other and to ground.

General Conditions for Storage and Use

1) The capacitors should always be stored in a dry and safe place indoor, in an upright position (not upside down).
2) The capacitors can't be stored on top of one another.
3) The capacitors must never be stored or used outside the specified temperature ranges. The ambient temperature category for most standard types is -45/60.
This means a max. temperature of 55°C, an average temperature over 24 hours of 45°C, and the average temperature in one year should not exceed 35°C. The maximum casing temperature of 6O°C must not be exceeded. Temperature is one of the main stress factors for polypropylene type capacitors. Temperature has a major influence on the useful life expectancy of the capacitor.
4) Exceeding the maximum allowed temperature may set the safety device out of operation.
5) Capacitors have not to be stored or operated in corrosive atmospheres, particularly not when chlorides, sulfides, acids, alkalis, salts, organic solvents or similar substances are present.
6) In a dusty or somehow dirty environment, regular maintenance and cleaning, especially of the terminals is required to avoid a conductive path between phases and/or phases and ground.
7) Mechanically or electrically damaged, leaky or otherwise damaged capacitors are not to be used in any way.
8) Existing protective devices on capacitors are not to be manipulated, removed or impaired in their function.
9) The integrity of discharge resistors should always be checked before installation.
10) A means of sufficient dissipation of heat loss (fan, cooling) and escaping gases in case of malfunction must be provided. Required minimum distances (e.g. to sources of heat) must be maintained.

Risk Factor for Capacitors

The most frequent risk factors which cause capacitor damage and possibly also the
failure of the internal protective devices are:
1) Exceeding the permissible temperature on the capacitor surface (a steady
increase of 7°C in operating temperature cuts the life expectancy in half).
2) Overvoltage, over current and high inrush currents even if they only occur briefly or cyclically (a steady increase of 8% in the operating voltage of the capacitor cuts
life expectancy in half).
3) Network harmonics, resonances created by harmonics or flickering even when they
occur only briefly or cyclically.
4) Aging of the lighting equipment and an excess temperature or high UV stress.
5) Failure of other components in a common circuit and overvoltage or over current accordingly.
6) Interaction with other reactive power components, and also parasitic capacitances or inductivities (cable) in common circuits.
7) Even if the test based on the capacitor standard is passed, this does not ensure comprehensive protection against all possible overloading.
8) Power capacitors can be a significant risk in the case of failure due to their stored energy and/or their properties during operation in networks with high short-circuit power.
9) Power capacitors can actively fail when internal or external protective devices are mis- sing,
incorrectly dimensioned or have failed. They can burst, burn or, in extreme cases, explode.
10) The gases (e.g., hydrocarbons as decom- position products of the organic insulating materials used) released in case of damage are flammable and can create explosive mixtures.
The fire load of a power capacitor is approx. 40 MJ/kg.
It is to be noted that, depending on size, combustible materials make up around 55% of the total mass of small capacitors and around 75% of big capacitors.

Risk Minimalization

1) The capacitor manufacturer cannot predict all possible stresses which a power capacitor may be subjected to, and which have to be taken into account in a proper design.
This means that the user bears crucial co-responsibility here.
For this reason alone, safety and quality should be the top priorities selecting a capacitor.
2) Before designing the application, capacitors must be checked for their suitability for
that specific application. Every parameter is to be considered.
Unexamined use in an application may have serious consequences.
Particularly with sensitive applications, the internal protective devices of the capacitors should be supplemented by the user with suitable external protective measures.
External protective measures are even mandatory when capacitors are used without internal protective devices.
3) When power capacitors are used, suitable measures must always be taken to eliminate possible danger to humans, animals and property both during operation and when a failure occurs.
This applies to capacitors both without and with protective devices.

Cautions and Warning

In case of dents of more than 1 mm depth or any other mechanical damage, capacitors must not be used at all. This applies also in cases of leakage.
To ensure the functionality of the overpressure disconnector, elastic elements must not be hindered, and a minimum space of 12 mm has to be kept above each capacitor.
Check tightness of the connections/terminals periodically.
The energy stored in capacitors may be lethal. To prevent any chance of shock and short circuit, discharge the capacitor before handling.

VDE Prüf- und Zertifizierungsinstitut

GUTACHTEN MIT FERTIGUNGSÜBERWACHUNG

CERTIFICATE OF CONFORMITY WITH FACTORY SURVEILLANCE

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Via Cavezzo 36
25045 CASTEGNATO BS
ITALY

ist berechtigt, für ihr Produkt /
is authorized to use for their product

**Leistungs-Parallelkondensator -
Dreiphaseneinheit in Dreieckschaltung**

die hier abgebildeten markenrechtlich geschützten Zeichen
für die im Blatt 2 aufgeführten Typen zu benutzen /
the legally protected Marks as shown below for the types referred to on page 2 ff.

Geprüft und zertifiziert nach /
Tested and certified according to

DIN EN 60831-1 (VDE 0560-46):2014-11; EN 60831-1:2014
DIN EN 60831-2 (VDE 0560-47):2014-11; EN 60831-2:2014

VDE Prüf- und Zertifizierungsinstitut GmbH
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Offenbach, 2017-01-30

VDE

CERTIFICATE OF COMPLIANCE

Certificate Number	20140422-E365338
Report Reference	E365338-20140422
Issue Date	2014-APRIL-22
Issued to:	GRUPPO ENERGIA SRL Via Cavezzo 36 25045 Castegnato Bs ITALY
This is to certify that representative samples of	COMPONENT - CAPACITORS, CONSTRUCTION ONLY Series LI/L/M CP.
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	U.S. National Standard: UL 810, standard for Capacitors Canadian National Standard, CSA C22.2 No. 190, Capacitors for Power Factor Correction
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Recognized Component Marks for the U.S. and Canada should be considered as being covered by UL's Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: [R] may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada: [C] and the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.

William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus

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CERTIFICATE OF COMPLIANCE

Certificate Number	20160402 E365338
Report Reference	E365338 20160401
Issue Date	2016 APRIL 02
Issued to:	GRUPPO ENERGIA SRL Via Cavezzo 36, 25045 Castegnato Bs ITALY
This is to certify that representative samples of	COMPONENT CAPACITORS, CONSTRUCTION ONLY USR, CNR Component Capacitors, Construction Only, Series DCM, may be prefixed by EP, followed by additional letters and numbers; Series GCMR, followed by additional letters and numbers. V ac rated capacitors USR Component Capacitors, Construction Only, Series DCM, may be prefixed by EP, followed by additional letters and numbers; Series GCMR, followed by additional letters and numbers. V ac rated capacitors and V dc rated capacitors.
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 810 Standard for Capacitors, CSA C22.2 No. 190 14 Standard for Capacitors for Power Factor Correction.
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow Up Service.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program
UL LLC

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BUREAU VERITAS
Certification

GRUPPO ENERGIA SRL

Registered and Operative Site:
Via Cavezzo, 36 – 25045 CASTEGNATO (BS) - ITALY

Bureau Veritas Italia spa certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

Standard

ISO 9001:2015

Scope of certification

Design and manufacture of single-phase and three-phase electrical capacitors for power factor correction of industrial plants, lamps, motors; design and manufacture of capacitors for power electronics applications; development and production of contactors, regulators and power factor reactors (chokes).

EA Sector(s): **19**

Certification cycle start date: **10 January 2018**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on: **11 January 2021**

Original certification date: **13 January 2006**

Certificate No. IT241879 Version N. 1 Revision date: **10 January 2018**

ANDREA FILIPPI – Local Technical Manager

Certification body address
Bureau Veritas Italia SpA Viale Monza, 347 - 20128 Milano, Italia

ACCREDIA

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization.
To check this certificate validity please refer to the website
http://www.bureauveritas.it/certificate

Scan this QR code to see the complete list of our products

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