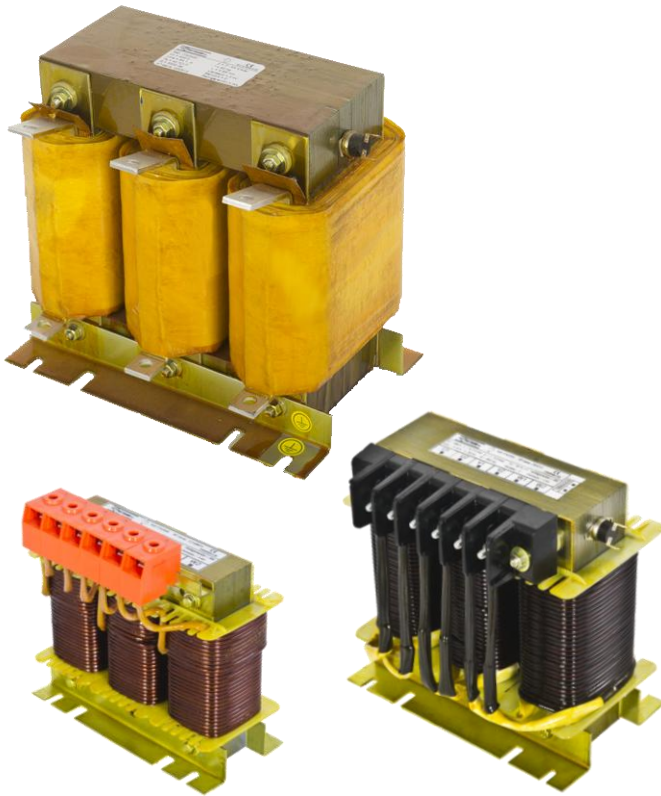


# Three phase filtering reactors for capacitor banks



- Three phase reactors for harmonic rejection filters and protections of capacitors to compensate the reactive energy in installations with high content of harmonics.

- The rejection filter avoids:

- dangerous destructive resonances that may have destructive results for the capacitor banks, main transformer and main switchboard.

- any amplification of harmonic currents and voltages caused by the resonance between the inductive impedance resulting from the line, power supply transformer and capacitors installed to compensate the power factor.

- an overload of harmonics in the line and the capacitors.

- Overtemperature and overload protection via bimetal thermal resetting relay.

- Vacuum impregnation with epoxy varnish high binding power with special properties that protect windings and magnetic core from dust and humidity.

- Connection with screw terminal blocks (rating up to 20 A).

- Connection with screws for flat terminals (rating from 20 to 60 A).

- Connection with flat busbars (rating over 60 A).

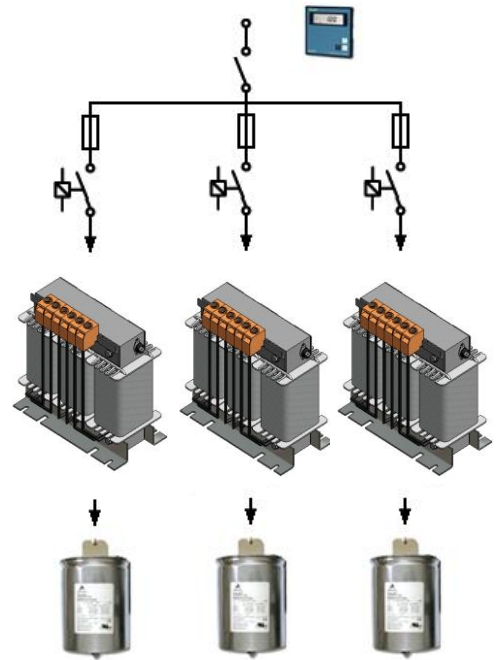
## Technical characteristics

Line voltage	3 x 400 V
Network overvoltage	106 % x U <sub>1</sub>
Harmonic distortion THD U	3 <sup>o</sup> = 0,5 % 5 <sup>o</sup> = 6 % 7 <sup>o</sup> = 5 % 11 <sup>o</sup> = 3,5 % 13 <sup>o</sup> = 3 %
Frequency	50 Hz
Attenuation coefficient	p = 7%
Resonance frequency	189 Hz
Capacitor voltage	3 x 440 V
Inductance tolerance:	L ± 3 %
Admissible overload	1,1 I <sub>N</sub>
Linearity	1,6 I <sub>N</sub>
Insulation class	F (155 °C)
Ambient temperature	40 °C
Protection degree	IP-00
Cooling	Natural
Test voltage	4 kV
Safety class	Class I
Protection	Bimetal thermal contact
Standard	IEC/UNE-EN 60076-6

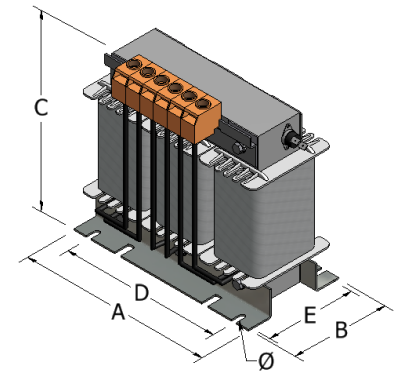


Selection of the reactor according to each capacitor bank step, rating and voltage capacitor.

Effective rating kVAr	Reference	Capacitor	Current A	Inductance mH
5	IRT005	440V 5,7 kVAr	7,2	7,628
10	IRT010	440V 11,3 kVAr	14,4	3,814
15	IRT015	440V 17,0 kVAr	21,7	2,543
20	IRT020	440V 22,6 kVAr	28,9	1,907
25	IRT025	440V 28,3 kVAr	36,1	1,526
30	IRT030	440V 33,9 kVAr	43,3	1,271
40	IRT040	440V 45,2 kVAr	57,7	0,953
50	IRT050	440V 56,5 kVAr	72,2	0,763
60	IRT060	440V 67,9 kVAr	86,6	0,636
80	IRT080	440V 90,5 kVAr	115,5	0,477
100	IRT100	440V 113,1 kVAr	144,3	0,381



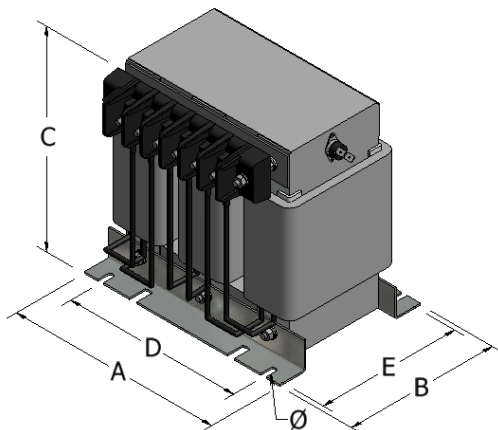
Effective Rating kVAr	Reference	Dimensions mm						Weight kg	Type
		A	B	C	D	E	Ø		
5	IRT005	180	110	190	140	71	7	6	I
10	IRT010	180	125	190	140	86	7	8	I
15	IRT015	240	135	210	200	88	7	10	II
20	IRT020	240	155	210	200	108	7	15	II
25	IRT025	240	155	210	200	108	7	15	II
30	IRT030	240	165	210	200	118	7	18	II
40	IRT040	265	165	245	200	132	7	23	III
50	IRT050	265	175	245	200	142	7	28	III
60	IRT060	300	185	255	200	145	11	40	III
80	IRT080	300	195	308	200	155	11	44	III
100	IRT100	300	205	308	200	165	11	52	III



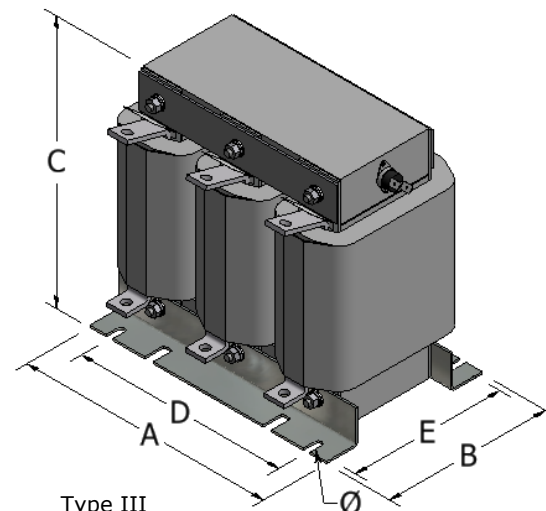
Type I

\* Other features, power, voltage, etc., on request

\* Torytrans reserves the right to modify the information in any time and without prior notice.



Type II



Type III