

Single-phase 4% chokes for currents to 40A

Description:

A choke consists of a conductor which is wound on the core. Magnetic circuit is formed by magnetic material and air gap.

SKYTLT10-4



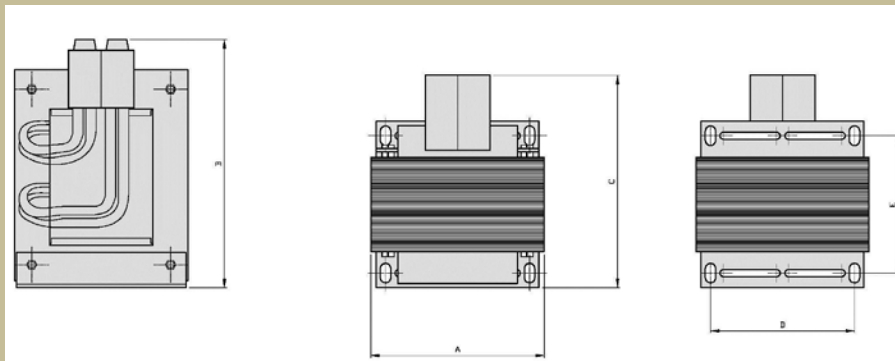
TECHNICAL PARAMETERS:

Nominal operating voltage
 Extent of operating frequencies f_n (for I_n)
 Extent of operating currents
 Switching frequency of the inverter
 Short-term overcurrent capacity : 50% I_n
 Thermal class : B
 Protection class : IP00
 Extent of operating temperature : -10°C + 40°C

Un: 500 Vac
 Fn: 50-60 Hz
 In: 3-40A
 SFr to 3kHz

Type	Nominal current [A]	Inductance $\pm 20\%$ [mH]	Power loss [W]	Weight [kg]	Conductor cross section [mm ²]	basic dimensions [mm]					
						A	B	C	D	E	X
						length	height	width	pitch	pitch	mounting
SKYTLT6-5	6	5	19	0,55	4	51	70	60	38	36	-
SKYTLT10-4	10	4	27	1,7	4	66	90	82	54,5	58	-
SKYTLT16-2	16	2	30	2,3	4	81	107	82	63	58	-
SKYTLT25-1,45	25	1,45	46	3,6	4	81	125	119,5	63	83	-
SKYTLT40-0,8	40	0,8	59	5	6	101	140	120	84	77,5	-

Dimensional drawing: SKYTLT6-5 to SKYTLT40-0,8



Use:

It is designed so that it can operate both in line side - between the converter and LV line, and in motor side - between the motor and converter.

Functions of the universal choke:

- it restricts size of commutation current when rectifier diodes are being switched-over
- it decreases size of radio-frequency interference from the device to LV line and vice versa
- it increases interference resistance of the device from LV line
- it restricts size of current and voltage harmonic components from 3rd harmonic and up
- it increases resistance to overvoltage which is caused by switching actions
- it decreases constant overvoltage by amount of its drop

As well as a motor choke it restricts size of rate of voltage rise between the choke and motor and it has an effect on:

- reducing of overvoltage in the motor
- reducing of radiated electromagnetic field by a motor cable
- reducing of total leakage current of the converter
- reducing of terminal radio-frequency interference from the device to LV line

Dimensioning:

Wiring between a converter and motor

Output current of the converter flowing through the choke must not exceed the label value. Through the chokes besides the nominal current there also flows radio-frequency additional current which has the same frequency as set pulse-width modulation of the converter. The higher is the frequency value the bigger are additional radio-frequency losses in the choke.

If we want to decrease warming of the choke, we must decrease the modulation frequency of the converter so that the value is as low as possible.

Regarding the 4% voltage drop the chokes are being used to the certain length of a cable. The length of the shielded cable is max. to 50m with switching frequency of the converter to 3kHz and the length of the unshielded cable is max. to 100m with switching frequency of the converter to 3kHz.

Wiring between a converter and LV line

Short-circuit protection of the chokes must not exceed the label value. Through the chokes besides the nominal current there also flows harmonic components of the current, their size depends on impedance of LV line and it can be changed in large extent. Therefore it is important to dimension the chokes sufficiently and count with current reserve. For example in the course of 30 % of the 5th harmonic of current there are losses in magnetic circuit almost as large as in the course of nominal current!!! In practice there are causes where size of 5th harmonic is even 50 to 70 % from I_n . Therefore when installing into switchboards it is necessary to count with power loss of the chokes and provide for sufficient heat removal.