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DATASHEET

LR3050-50-591 · Rev. R0.1 · 2026-11-07

THREE-PHASE LINE REACTOR · INSULATION CLASS F

50 A · uk 4 % · 0.588 mH · 400 V

Part no. LR3050-50-591 · former type ILR 4/50-400-F · copper winding · class F, Ta 45 °C

0.588 mH Inductance per phase, ±10 %	**50 A** Rated current, 400 V 50 Hz	**4 %** Voltage drop ΔU 9.2 V
80 A Linearity current (L ≥ 90 %)	**116 W** Total losses at I_n, Ta 40 °C (calc.)	**ΔT 71 K** Temperature rise at I_n, Ta 40 °C
Class F · Ta 45 °C IEC 61558-1, winding ≤ 140 °C	**11.7 kg** Weight approx.	**173×135×202** A × B × C (mm), see GA drawing

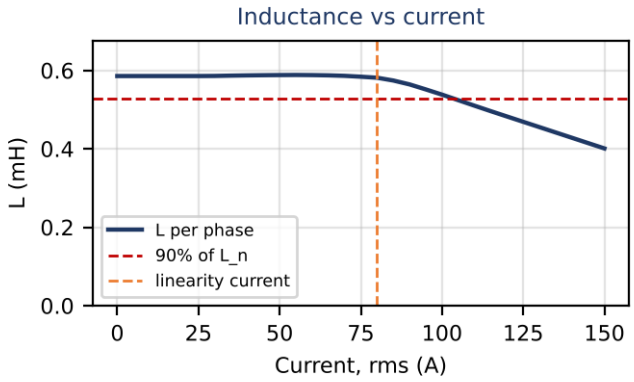
1 ELECTRICAL SPECIFICATION

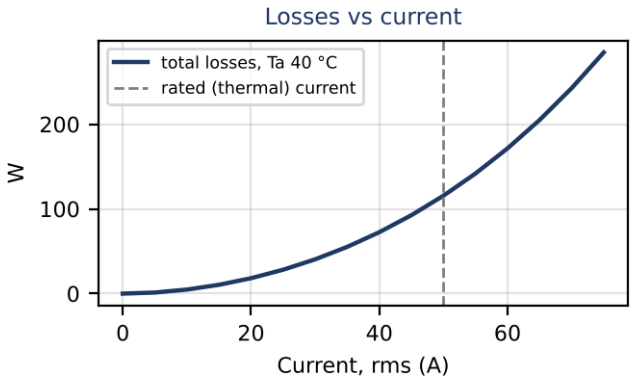
Parameter	Condition	Value	Remark
Inductance per phase	50 Hz, I_n, each phase U1–U2, V1–V2, W1–W2	0.588 mH ±10 %	calc.
Rated current I_n	continuous, Ta ≤ 45 °C	50 A rms	
Relative voltage drop uk	at I_n, 400 V 50 Hz	4 % (9.2 V per phase)	
Linearity	L at 1.6 × I_n = 80 A	≥ 0.529 mH (90 %)	typ. 99%
Total losses	at I_n, Ta 40 °C, all phases	≤ 133 W	typ. 116 W
Temperature rise	I_n, Ta 40 °C, natural cooling	ΔT ≈ 71 K	calc.
Insulation class / ambient	IEC 61558-1, resistance method	F · winding ≤ 140 °C at Ta 45 °C	calc. 116 °C
Hi-pot	winding – core, 50 Hz, 60 s	2.5 kV AC	
Rated voltage	network	400 V, 50 Hz, 3-phase	for frequency converters / drives

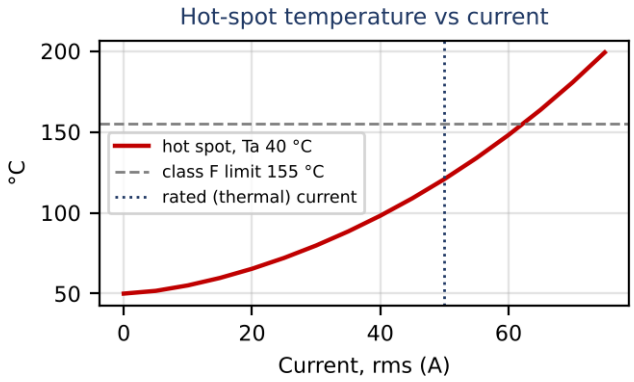
2 DESIGN AND MOUNTING

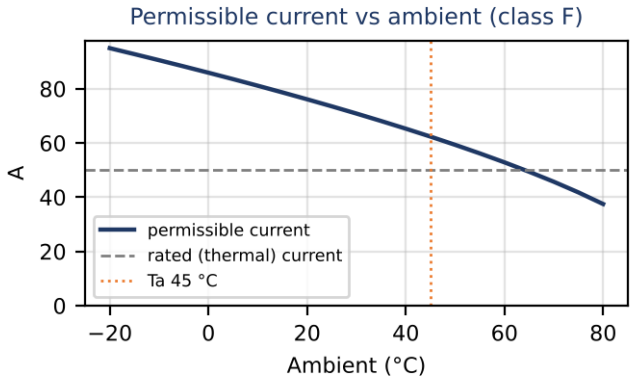
Item	Description
Construction	Three-phase iron-core reactor with air gap, copper winding, vacuum impregnated, open design (IP00)
Terminals	screw terminals 16 mm², marking U1-V1-W1 (line) / U2-V2-W2 (load), PE stud M6
Mounting	9 × 15 (M8) slots, pitch n1 × n2 = 145 × 105 mm, any position (coils vertical recommended)
Dimensions / weight	A × B × C = 173 × 135 × 202 mm · ≈ 11.7 kg
Standard	EN 61558-2-20 · CE · RoHS

3 TYPICAL CHARACTERISTICS (CALC.)





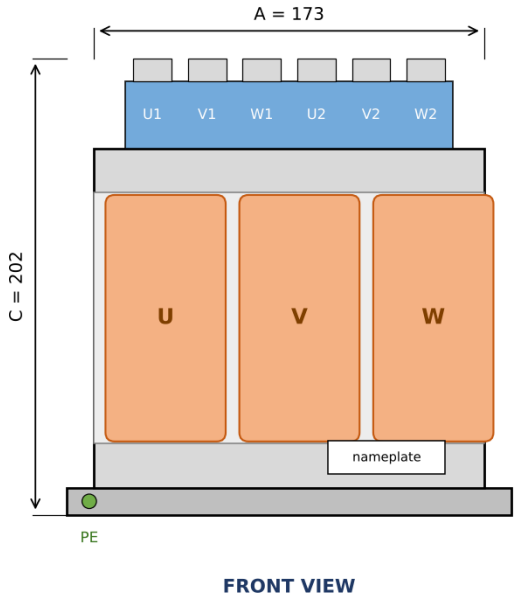




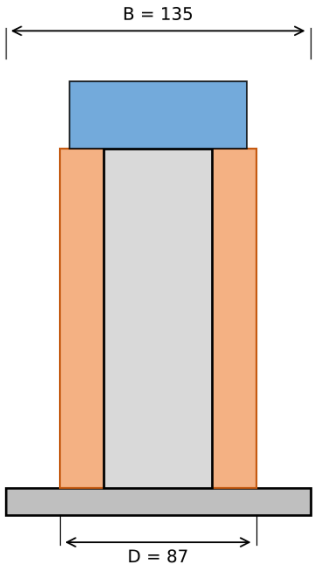
Notes

- Curves are design calculations from the B-H and loss curves of the electrical steel and a thermal model (natural convection, altitude ≤ 1000 m).
- Thermal rating: IEC 61558-1 class F at Ta 45 °C (winding ≤ 140 °C, resistance method); type-test values replace "calc." after release.
- Rated current includes typical 6-pulse drive harmonics.

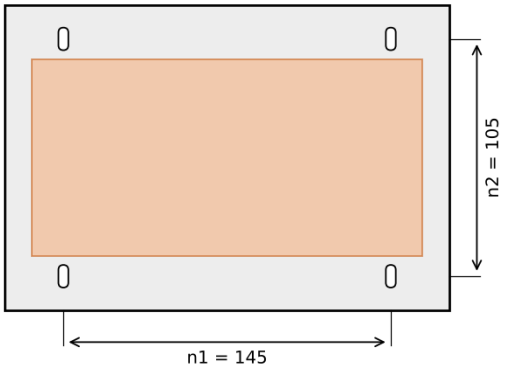
4 GENERAL ARRANGEMENT (GA) DRAWING



FRONT VIEW



SIDE VIEW



TOP VIEW (mounting)

Dim.	Value (mm)	Description
A	173	overall width (core / coils)
B	135	overall depth incl. mounting feet
C	202	overall height incl. feet and terminals
D	87	depth of the coils
n1 × n2	145 × 105	mounting hole pitch, slots 9 × 15 (M8)
Terminals		screw terminals 16 mm² · PE M6 on foot

Dimensions in mm. Overall dimensions A, C, D from the design; mounting feet, terminals and hole pitch are ICD&C standard assumptions (indicative) – binding values on the production drawing. Tolerances ±3 mm (overall), ±1 mm (hole pitch). Weight ≈ 11.7 kg.