



HLF380S

## MCB 3P 10kA C-80A 4.5M

### Technical properties

#### Architecture

Number of protected poles	3
Number of poles	3 P
Type of pole	3 P
Curve	C

#### Functions

Concurrently switching N-neutral	No
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#### Configuration

Number of modules	4.5
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#### Connectivity

Top connection alignment for modular devices	Aligned terminal
Bottom connection alignment for modular devices	Aligned terminal

#### Main electrical features

Rated short circuit breaking capacity $I_{cn}$ AC according IEC60898-1	10 kA
Rated operational voltage $U_e$	415 V
Type of supply voltage	AC
Frequency	50/60 Hz

#### Voltage

Rated insulation voltage	500 V
Rated impulse withstand voltage	6000 V

#### Electric current

Rated current	80 A
Rated service breaking capacity $I_{cs}$ AC according IEC 60898-1	7.5 kA
min/maxi threshold value of the AC thermal operation	1.13 / 1.45 $I_n$
Magnetic regulating current	5 / 10 $I_n$
Rating current -10°C according to IEC 60947	112 A
Rating current -15°C according to IEC 60947	115 A
Rating current -20°C according to IEC 60947	118 A
Rating current -25°C according to IEC 60947	122 A

Rating current -5°C according to IEC 60947	109 A
Rating current 0°C according to IEC 60947	106 A
Rating current 10°C according to IEC 60947	99.2 A
Rating current 15°C according to IEC 60947	96 A
Rating current 20°C according to IEC 60947	92.8 A
Rating current 25°C according to IEC 60947	89.6 A
Rating current 30°C according to IEC 60947	86.4 A
Rating current 35°C according to IEC 60947	83.2 A
Rating current 40°C according to IEC 60947	80 A
Rating current 45°C according to IEC 60947	77.6 A
Rating current 5°C according to IEC 60947	102 A
Rating current 50°C according to IEC 60947	75.1 A
Rating current 55°C according to IEC 60947	72.6 A
Rating current 60°C according to IEC 60947	70 A
Rating current 65°C according to IEC 60947	67.2 A
Rating current 70°C according to IEC 60947	64.3 A
Breaking capacity on 1 pole for IT 400V NF 60947-2	4.5 kA
Breaking capacity on 1 pole for IT 415V NF 60947-2	4.5 kA
Rated short circuit breaking capacity I <sub>cn</sub> under 230V AC according IEC60898-1	10 kA
Rated short circuit breaking capacity I <sub>cn</sub> under 400V AC according IEC60898-1	10 kA
Rated service breaking capacity I <sub>cs</sub> AC according IEC 60947-2	75 %
Rated ultimate short-circuit breaking capacity I <sub>cu</sub> under 230V AC IEC 60947-2	10 kA
Rated ultimate short-circuit breaking capacity I <sub>cu</sub> under 240V AC IEC 60947-2	10 kA
Rated ultimate short-circuit breaking capacity I <sub>cu</sub> under 400V AC IEC 60947-2	10 kA
Rated ultimate short-circuit breaking capacity I <sub>cu</sub> under 415V AC IEC 60947-2	10 kA
<b>Electric current / temperature</b>	
Rating current -25°C	115 A
Rating current -20°C	112 A
Rating current -15°C	109 A
Rating current -10°C	106 A
Rating current -5°C	102 A
Rating current 0°C	99.2 A
Rating current 5°C	96 A
Rating current 10°C	92.8 A
Rating current 15°C	89.6 A
Rating current 20°C	86.4 A
Rating current 25°C	83.2 A
Rating current 30°C	80 A
Rating current 35°C	77.6 A
Rating current 40°C	75.1 A
Rating current 45°C	72.6 A

Subject to technical modifications

Rating current 50°C	70 A
Rating current 55°C	67.2 A
Rating current 60°C	64.3 A

#### Current correction factors

Correction factor of rating current for 2 devices placed side-by-side	1
Correction factor of rating current for 3 devices placed side-by-side	0.95
Correction factor of rating current for 4 and 5 devices placed side-by-side	0.9
Correction factor of rating current for 6 devices placed side-by-side	0.85

#### Dimensions

Depth of installed product	70 mm
Height of installed product	90 mm
Width of installed product	80 mm

#### Frequency

Frequency	50 to 60 Hz
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#### Power

Total power loss under IN	20.32 W
Power loss per pole at In	6.93 W

#### Endurance

Electric endurance in number of cycles	4000
Number of mechanical operations	20000

#### Installation, mounting

Type of top connection for modular devices	with screw
Tightening torque	3,5 to 5Nm
Type of top rail clip for modular devices	Plastic
Type of bottom rail clip for modular devices	plastic
Type of Bottom Connection for modular devices	with screw
Top removability for modular devices	Yes
Bottom removability for modular devices	Yes

#### Connection

Connection cross-section at output with screw, for flexible conductor	1 / 50 mm <sup>2</sup>
Connection cross-section at output with screw, for massive conductor	1 / 70 mm <sup>2</sup>
Connection cross-sect. flexible conductor	50mm <sup>2</sup>
Connection cross-sect. rigid cable	70mm <sup>2</sup>
Connection cross-section for rigid conductor, upstream terminals with screws	1 / 70 mm <sup>2</sup>
Connection cross-section of the access with screws, with flexible conductor	1 / 50 mm <sup>2</sup>
Connection cross-section of input and output with screws, for massive conductors	1 / 70 mm <sup>2</sup>

Connection cross section of access and exit with screws, for flexible conductor	1 / 50 mm <sup>2</sup>
Type of connection	terminal with tightening compensation system
<b>Standards</b>	
Standard text	EN 60898-1 ; IEC 60947-2
European directive WEEE	concerned
<b>Safety</b>	
Protection index IP	IP20
REACH conform	Yes
RoHS conform	Yes
Halogen free	No
<b>Use conditions</b>	
Degree of pollution according to IEC 60664 / IEC 60947-2	3
Class of energy limitation I <sup>2</sup> t	3
Altitude	2000 m
Air humidity protection	for all climates
<b>temperatur</b>	
Temperature of calibration	30 °C