## Product data sheet HLF480S





HLF480S

## MCB 4P 10kA C-80A 6M

**Technical characteristics** 

Type of pole     4 F       Curve     C       Functions     C       Configuration     No       Number of modules     6       Connectivity     C       Top connection alignement for modular devices     Aligned termina       Bottom connection alignement for modular devices     Aligned termina       Main electrical features     10 k/a       Rated short circuit breaking capacity Icn AC according IEC60898-1     10 k/a       Rated operational voltage Ue     415 v       Type of supply voltage     According IEC60898-1       Rated insulation voltage     500 v       Rated insulation voltage     6000 v       Electric current     80 A       Rated service breaking capacity Ics AC according IEC60898-1     7.5 k/a       min/maxi threshold value of the AC thermal operation     1.13 / 1.45 Ir       Magnetic regulating current     5 / 10 Ir       Rated service breaking capacity Ics AC according IEC 60898-1     7.5 k/a       min/maxi threshold value of the AC thermal operation     1.13 / 1.45 Ir       Magnetic regulating current     5 / 10 Ir       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     115 A       Rating current -20°C according to IEC 60947     115	Number of protected poles	4
Curve	Number of poles	4 P
Functions         Configuration         Number of modules         Connectivity         Top connection alignement for modular devices         Aligned termina         Bottom connection alignement for modular devices         Aligned termina         Main electrical features         Rated short circuit breaking capacity Icn AC according IEC60898-1         According IEC60898-1         Rated operational voltage Ue         Ype of supply voltage         Frequency         S0/60 V2         Rated insulation voltage         Bated short circuit breaking capacity Icn AC according IEC 60898-1         According IEC60898-1         Stated short circuit breaking capacity Icn AC according V0 Valage         Frequency       50/60 Hz         Voltage       AC         Rated insulation voltage       500 V         Rated insulation voltage       600 V         Electric current       80 A         Rated service breaking capacity Ics AC according to IEC 60898-1       7.5 k/2         min/maxit threshold value of the AC thermal operation       1.13 / 1.45 Ir         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC 60947       112 A         Rating current -10°C according to IEC 6094	Type of pole	4 P
Concurrently switching N-neutral NC Configuration Number of modules 6 Connectivity Top connection alignement for modular devices Aligned termina Bottom connection alignement for modular devices Aligned termina Main electrical features Rated short circuit breaking capacity Icn AC according IEC 60898-1 Rated operational voltage Ue 415 V Type of supply voltage AC Frequency 50/60 H2 Voltage Rated insulation voltage 500 V Rated impulse withstand voltage 6000 V Electric current Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated service breaking capacity Ics AC according IEC 60898-1 Rated Service breaking capacity Ics AC according IEC 60898-1 Rated Service breaking capacity Ics AC according IEC 60898-1 Rated Service breaking capacity Ics AC Rating current -10°C according to IEC 60947 Rating current -20°C according to IEC 60947 Rating current -20°C according to IEC Conduct Current Rated Current -20°C according to IEC Conduct Current -20°C ac	Curve	C
Configuration         Number of modules       G         Connectivity       Aligned termina         Top connection alignement for modular devices       Aligned termina         Bottom connection alignement for modular devices       Aligned termina         Main electrical features       Aligned termina         Rated short circuit breaking capacity Icn AC according IEC60898-1       10 kA         Rated operational voltage Ue       415 v         Type of supply voltage       AC         Frequency       50/60 Hz         Voltage       6000 v         Rated insulation voltage       6000 v         Rated insulation voltage       6000 v         Rated current       80 A         Rated service breaking capacity Ics AC according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 Ir         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC 60947       112 A         Rating current -10°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       118 A         Rating current -25°C according to IEC 60947       118 A	Functions	
Number of modules 6 Connectivity Top connection alignement for modular devices Aligned termina Bottom connection alignement for modular devices Aligned termina Main electrical features Rated short circuit breaking capacity Icn AC according IEC60898-1 10 kA Rated operational voltage Ue 415 v Type of supply voltage AC Frequency 50/60 Hz Voltage Rated insulation voltage 500 v Rated insulation voltage 500 v Electric current Rated service breaking capacity Ics AC according IEC 60898-1 7.5 kA min/maxi threshold value of the AC thermal operation 1.13 / 1.45 In Magnetic regulating current 5 / 10 Ir Rating current -10°C according to IEC 60947 112 A Rating current -20°C according to IEC 60947 118 A Rating current -20°C according to IEC	Concurrently switching N-neutral	No
Connectivity         Top connection alignement for modular devices       Aligned termina         Bottom connection alignement for modular devices       Aligned termina         Main electrical features       Aligned termina         Main electrical features       10 kA         Rated short circuit breaking capacity Icn AC according IEC60898-1       10 kA         Rated operational voltage Ue       415 v         Type of supply voltage       AC         Frequency       50/60 Hz         Voltage       6000 v         Electric current       80 A         Rated insulation voltage       6000 v         Electric current       80 A         Rated service breaking capacity Ics AC according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 Ir         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC 60947       112 A         Rating current -20°C according to IEC 60947       115 A         Rating current -20°C according to IEC 60947       118 A         Rating current -25°C according to IEC       118 A	Configuration	
Top connection alignement for modular devices       Aligned termina         Bottom connection alignement for modular devices       Aligned termina         Main electrical features       Aligned termina         Main electrical features       10 kA         Rated short circuit breaking capacity Icn AC according IEC60898-1       10 kA         Rated operational voltage Ue       415 V         Type of supply voltage       AC         Frequency       50/60 Hz         Voltage       6000 V         Rated insulation voltage       6000 V         Electric current       80 A         Rated service breaking capacity Ics AC according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 In         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC 60947       112 A         Rating current -20°C according to IEC 60947       115 A         Rating current -20°C according to IEC 60947       118 A         Rating current -25°C according to IEC       118 A         Rating current -25°C according to IEC       118 A	Number of modules	6
devices       Aligned termina         Bottom connection alignement for modular devices       Aligned termina         Main electrical features       In Receive and the second according IEC60898-1       In Receive and termina         Rated operational voltage Ue       415 V         Type of supply voltage       According IEC60898-1       In Receive and termina         Voltage       According Voltage       According Voltage         Rated insulation voltage       5006 V       Voltage         Rated insulation voltage       6000 V       Rated impulse withstand voltage       6000 V         Electric current       80 A       Rated service breaking capacity Ics AC according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 In       1.13 / 1.45 In         Magnetic regulating current       5 / 10 Ir       1.13 / 1.45 In         Rating current -10°C according to IEC 60947       112 A         Rating current -15°C according to IEC 60947       115 A         Rating current -25°C according to IEC 60947       118 A         Rating current -25°C according to IEC       118 A	Connectivity	
devices     Aligned termina       Main electrical features     10 kA       Rated short circuit breaking capacity Icn AC according IEC60898-1     10 kA       Rated operational voltage Ue     415 V       Type of supply voltage     AC       Frequency     50/60 H2       Voltage     500 V       Rated insulation voltage     500 V       Rated insulation voltage     6000 V       Electric current     6000 V       Rated current     80 A       Rated service breaking capacity Ics AC according IEC 60898-1     7.5 kA       min/maxi threshold value of the AC thermal operation     1.13 / 1.45 In       Magnetic regulating current     5 / 10 Ir       Rating current -10°C according to IEC 60947     112 A       Rating current -15°C according to IEC 60947     115 A       Rating current -25°C according to IEC 60947     118 A	Top connection alignement for modular devices	Aligned terminal
Rated short circuit breaking capacity Icn AC       10 kA         according IEC60898-1       10 kA         Rated operational voltage Ue       415 v         Type of supply voltage       AC         Frequency       50/60 Hz         Voltage       8         Rated insulation voltage       500 v         Rated insulation voltage       6000 v         Electric current       80 A         Rated current       80 A         Rated service breaking capacity Ics AC       7.5 kA         according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 In         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC 60947       112 A         Rating current -20°C according to IEC 60947       115 A         Rating current -25°C according to IEC 60947       118 A         Rating current -25°C according to IEC       118 A	Bottom connection alignement for modular devices	Aligned terminal
according IEC60898-110 kARated operational voltage Ue415 vType of supply voltageACFrequency50/60 HzVoltageS00 vRated insulation voltage6000 vElectric current80 ARated current80 ARated service breaking capacity Ics AC according IEC 60898-17.5 kAmin/maxi threshold value of the AC thermal operation1.13 / 1.45 InMagnetic regulating current5 / 10 IrRating current -10°C according to IEC 60947112 ARating current -20°C according to IEC 60947115 ARating current -20°C according to IEC 60947118 ARating current -25°C according to IEC118 A	Main electrical features	
Type of supply voltage       AC         Frequency       50/60 Hz         Voltage       Rated insulation voltage         Rated insulation voltage       500 V         Rated impulse withstand voltage       6000 V         Electric current       80 A         Rated service breaking capacity Ics AC according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 In         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC 60947       112 A         Rating current -20°C according to IEC 60947       118 A         Rating current -25°C according to IEC       118 A	Rated short circuit breaking capacity Icn AC according IEC60898-1	10 kA
Frequency       50/60 Hz         Voltage       500 V         Rated insulation voltage       500 V         Rated impulse withstand voltage       6000 V         Electric current       80 A         Rated service breaking capacity Ics AC according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 In         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC 60947       112 A         Rating current -20°C according to IEC 60947       118 A         Rating current -25°C according to IEC       118 A	Rated operational voltage Ue	415 V
Voltage         Rated insulation voltage       500 V         Rated impulse withstand voltage       6000 V         Electric current       80 A         Rated current       80 A         Rated service breaking capacity Ics AC according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 In         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC 60947       112 A         Rating current -20°C according to IEC 60947       115 A         Rating current -20°C according to IEC 60947       118 A         Rating current -25°C according to IEC       118 A	Type of supply voltage	AC
Rated insulation voltage       500 V         Rated impulse withstand voltage       6000 V         Electric current       6000 V         Rated current       80 A         Rated service breaking capacity Ics AC according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 Im         Magnetic regulating current       5 / 10 Im         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       118 A	Frequency	50/60 Hz
Rated impulse withstand voltage       6000 V         Electric current       80 A         Rated current       80 A         Rated service breaking capacity Ics AC       7.5 kA         according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal       1.13 / 1.45 Ir         operation       1.13 / 1.45 Ir         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC       60947         60947       115 A         Rating current -20°C according to IEC       118 A         Rating current -25°C according to IEC       118 A         Rating current -25°C according to IEC       118 A	Voltage	
Electric current       80 A         Rated current       80 A         Rated service breaking capacity Ics AC       7.5 kA         according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal       1.13 / 1.45 Ir         operation       1.13 / 1.45 Ir         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC       112 A         Rating current -15°C according to IEC       115 A         Rating current -20°C according to IEC       118 A         Rating current -25°C according to IEC       118 A	Rated insulation voltage	500 V
Rated current       80 A         Rated service breaking capacity Ics AC       7.5 kA         according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal operation       1.13 / 1.45 In         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC       112 A         Rating current -15°C according to IEC       115 A         Rating current -20°C according to IEC       118 A         Rating current -25°C according to IEC       118 A	Rated impulse withstand voltage	6000 V
Rated service breaking capacity Ics AC         according IEC 60898-1       7.5 kA         min/maxi threshold value of the AC thermal       0         operation       1.13 / 1.45 In         Magnetic regulating current       5 / 10 Ir         Rating current -10°C according to IEC       112 A         Rating current -15°C according to IEC       115 A         Rating current -20°C according to IEC       118 A         Rating current -25°C according to IEC       118 A	Electric current	
according IEC 60898-17.5 kAmin/maxi threshold value of the AC thermal operation1.13 / 1.45 IrMagnetic regulating current5 / 10 IrRating current -10°C according to IEC 60947112 ARating current -15°C according to IEC 60947115 ARating current -20°C according to IEC 60947118 ARating current -25°C according to IEC118 A	Rated current	A 08
operation1.13 / 1.45 InMagnetic regulating current5 / 10 IrRating current -10°C according to IEC112 A60947112 ARating current -15°C according to IEC115 ARating current -20°C according to IEC118 ARating current -25°C according to IEC118 A	Rated service breaking capacity Ics AC according IEC 60898-1	7.5 kA
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	min/maxi threshold value of the AC thermal operation	1.13 / 1.45 In
60947       112 A         Rating current -15°C according to IEC       115 A         Rating current -20°C according to IEC       118 A         Rating current -25°C according to IEC       118 A	Magnetic regulating currrent	5 / 10 Ir
60947     115 A       Rating current -20°C according to IEC     118 A       Rating current -25°C according to IEC     118 A	Rating current -10°C according to IEC 60947	112 A
60947 118 A Rating current -25°C according to IEC	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 Icn under 230V AC according IEC60898-1	10 kA
Rated short circuit breaking capacity Icn under 400V AC according IEC60898-1	10 kA
Rated service breaking capacity Ics AC according IEC 60947-2	75 %
Rated ultimate short-circuit breaking capacity Icu under 230V AC IEC 60947-2	10 kA
Rated ultimate short-circuit breaking capacity Icu under 240V AC IEC 60947-2	10 kA
Rated ultimate short-circuit breaking capacity Icu under 400V AC IEC 60947-2	10 kA
Rated ultimate short-circuit breaking capacity Icu under 415V AC IEC 60947-2	10 kA
Electric current / temperature	
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	106 mm
Frequency	
Frequency	50 to 60 Hz
Power	
Total power loss under IN	25.71 W
Power loss per pole at In	6.68 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 mm²
Connection cross-section at output with screw, for massive conductor	1 / 70 mm²
Connection cross-sect. flexible conductor	50mm²
Connection cross-sect. rigid cable	70mm²
Connection cross-section for rigid conductor, upstream terminals with screws	1 / 70 mm²
Connection cross-section of the access with screws, with flexible conductor	1 / 50 mm²
Connection cross-section of input and	
output with screws, for massive conductors	1 / 70 mm²

Connection cross section of access and exit with screws, for flexible conductor	1 / 50 mm
Standards	
Standard text	EN 60898-1 ; IEC 60947-
European directive WEEE	concerne
Safety	
Protection index IP	IP2
REACH conform	Ye
RoHS conform	Ye
Halogen free	N
Use conditions	
Degree of pollution according to IEC 60664 / IEC 60947-2	
Class of energy limitation I <sup>2</sup> t	:
Altitude	2000 n
Air humidity protection	for all climates
temperatur	

Temperature of calibration

30 °C