hager

80 to 125A
New range of modular protection devices.

new

Welcome to
the new 80-125A range from Hager

The new range of modular protection devices ranging from 80 to 125A positions Hager a step above in providing circuit protection solutions for OEMs and commercial buildings.
It is especially designed to provide :
• protection as main incomer for sub distribution
• protection of loads directly supplied by a power DB
It unveils new possiblities in terms of safety, ease of installation and user friendliness.

New modular protection devices 80 to 125A
• Single and multi-pole circuit breakers 80-100-125
• RCD add-on-blocks in fixed and adjustable versions.

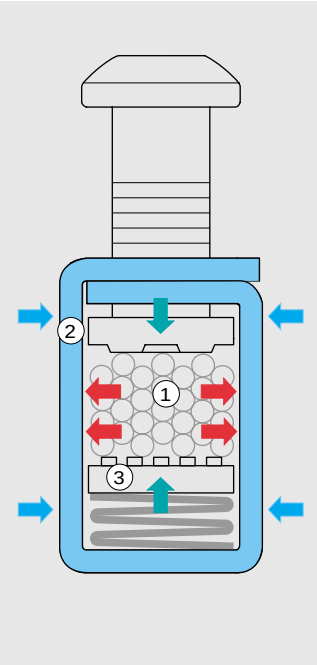
More safety, more performance and more facility in your installations

The new 80 to 125A range is conceived to facilitate you with safe and easy implementation.
Thanks to the new triple cage innovation, safety of termination is now redefined at a highly stringent level.
Also, the new range brings along, 'fast on' cable terminals for auxiliary connection, adjustable RCD blocks and a lockable handle.

Constant tightness...
Over a period of time

Triple innovation patented by Hager.

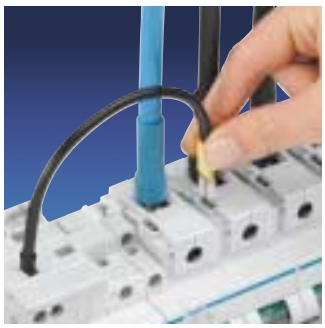
The HMxxx MCBs and add on blocks range benefits from the new exclusive "cage connection", with three major innovations to its credit.



1. Tightening compensation system
When first tightened, the cable is compressed with an optimal compression force. Over time th cable strands move due to vibration or pulling effort.
The tightening compensation system helps to correct the cable distortion. The force remaining constant and optimal on the terminal, avoids any risk of bad connection.

2. Arch of reinforcement
A reinforcement plate surrounds the terminal.
The reduction in distortion ensures the tightening force is applied directly to the cable improving connection reliability.
Terminal allows a tightening torque more than 3,5Nm i.e. 350kg on the cable.

3. Cable holding Jaws
Serrations on the terminal jaws improve grip on the cable, especially in case of strong pulling. Marks of jaws can be visible on the cable after optimal

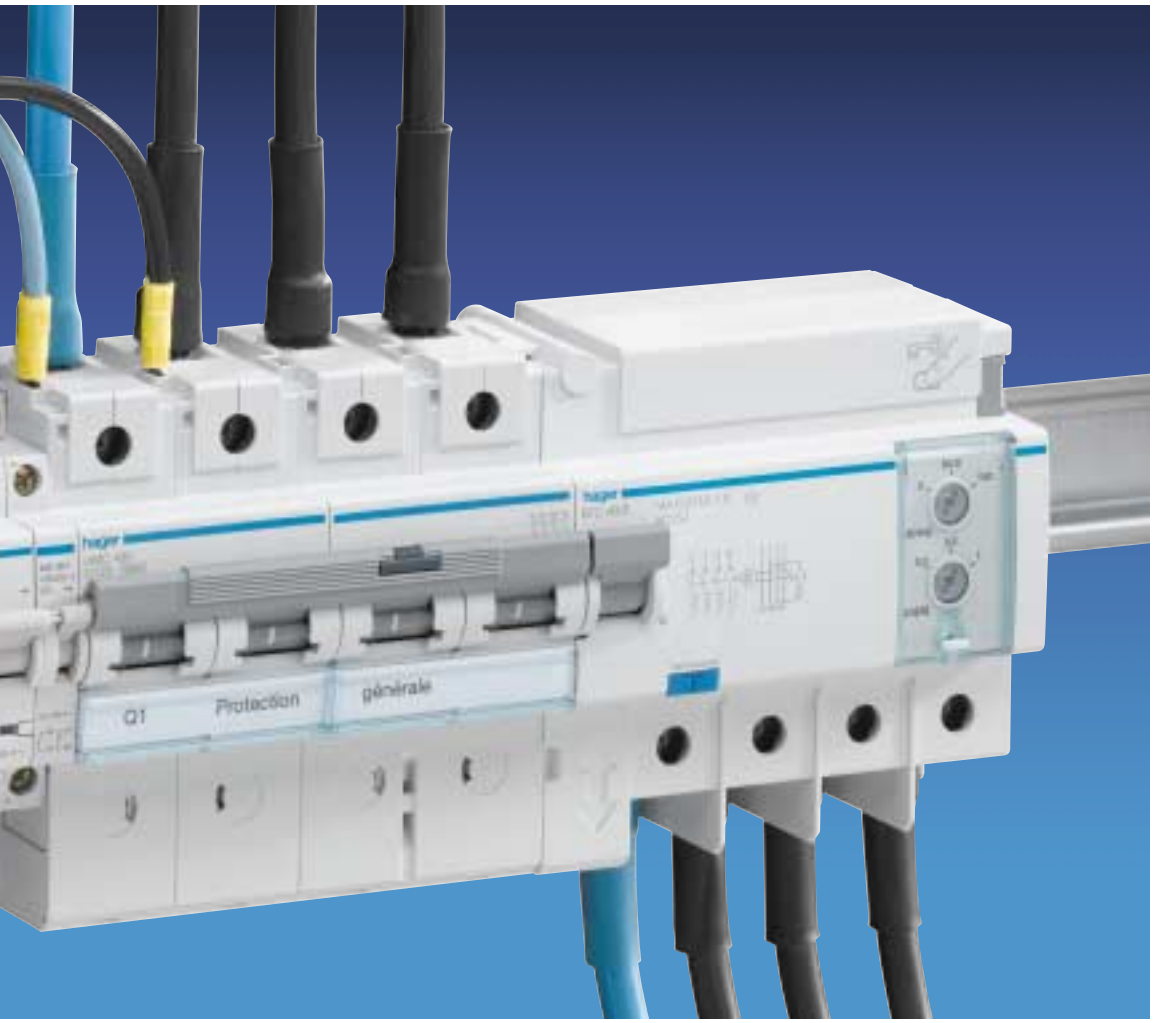


"Fast on " terminals

Auxiliary connection becomes easy, thanks to the new 'Fast on' connection terminals given on top and bottom of MCBs. Ideal solution to feed auxiliaries such as shunt trip coil, UV release etc...

Capacity of connection :
- 1,5 to 6 mm²
- maximum current 6 A

Modular protection devices 80 to 125A



adjustable RCD add-on-block

The add-on blocks are available in fixed and adjustable versions. In adjustable version, the sensitivity and the trip delay can be adjusted, even when connected.

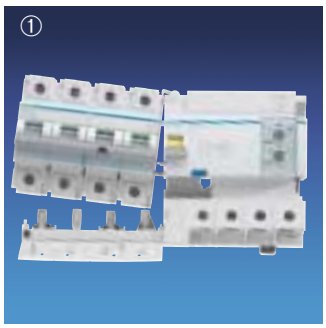
- selection of sensitivity : 300 mA, 500 mA or 1 A

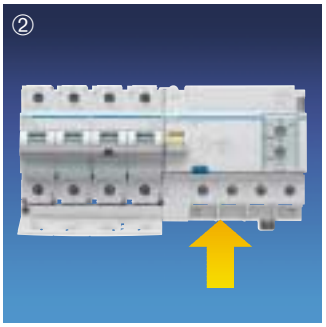
- selection of delay : instant trips or time delay (60 to 150msec)

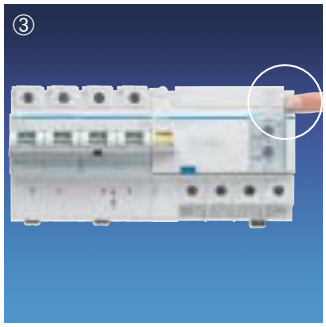
- sealable cover to protect setting knobs.

Fast assembly of the add-on-block

Accross the range, the assembly of the add-on-block is carried out in three simple steps.
1. Assembly
2. Connection
3. Locking







Anti Omission Lock

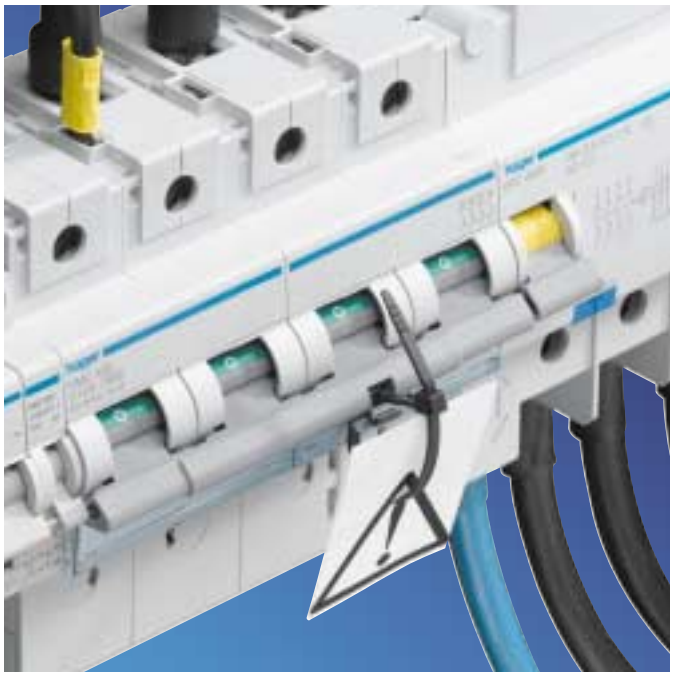
The RCD Add on block is equipped with locating pins which helps to secure the tightening of the bottom terminals to the circuit breaker.
if terminals not tightened, bottom cannot be closed.

Modular protection devices 80 to 125A

Lockable handle

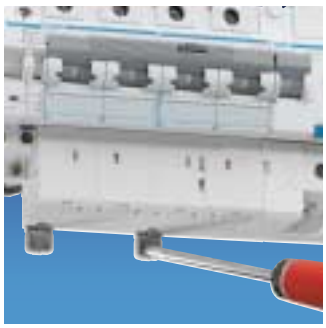
The MCBs can lock in “OFF” position by the integrated locking facility on the handle.

This lock allows inserting a 2,5 to 3,5mm plastic cable tie where you can fit a warning card if necessary. (delivered with each product)



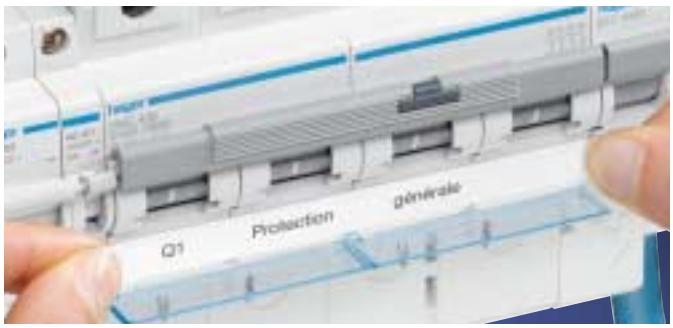
Disassembly capability and accessibility

The DIN rail clips of the circuit breaker unit and add-on-block facilitate its disassembly capability. They are easily accessible and work with any type of screwdriver.



Well designed Label holders

The entire range is equipped with label holders for locating the circuit. The strip of label slips easily and entirely under the lever.



Eco-design and low thermal dissipation

Respect for the environment was a prime virtue in the design and development of this range. The materials selected for the manufacturing of these products respect the provisions of the European Directive on the “limitation of the use of dangerous substances” (Directive N° 2002/05/CE “RoHS”).

The MCB design is innovative and can be distinguished by its low power loss (5.5w for 100A).

Miniature circuit breakers 80-125A

Thermal magnetic circuit breakers

curves “C” - “D”

In 80 to 125 A

These circuit breakers are intended for the protection of the circuits against overloads and short circuits.

The circuit breakers curve “C” are adapted to the protection of the circuits in professional premises.
The circuit breakers curve “D” are particularly adapted to the protection of the circuits where the installations are subject to high in-rush currents.

☐ **HMC curve “C”**
15000
(IEC 60898-1)
15 kA for 80 - 100 - 125 A :
IEC 60947-2
width 1.5 mod/pole

☐ **HMD curve “D”**
15000
(IEC 60898-1)
15 kA for 80 - 100 - 125 A :
IEC 60947-2
width 1.5 mod/pole

☐ **HLF curve “C”**
10000
(IEC 60898-1)
10 kA for 80 - 100 - 125 A :
IEC 60947-2
width 1.5 mod/pole

Series HMC, HMD, HLF :

These circuit breakers are equipped with reinforced screw cages.

A label holder is integrated under the toggle to ensure the location of the product.

The “OFF” position is clearly shown by a green indicator below the toggle.

Suitable for isolation (according to IEC 60947-2) : the isolation of the circuit breakers is indicated by a green indicator on the toggle.

These circuit breakers have quick closing : fast and simultaneous closing of the contacts, independent of the handling speed.
This increases the life of the circuit breaker whatever the type of load.

Nominal voltage : 230/415 V ∼
calibration setting :30 °C
(IEC 60898-1)
insulation voltage: 500 V

Options :
☐ auxiliary :
- to visualise the state ON or OFF of the circuit breaker,
- to ON/OFF remotely the circuit breaker

☐ locking mechanism

☐ terminal covers and phase separators

☐ RCD add-on blocks

Series HMC, HMD,

☐ disassembly capability : bistable DIN-rail latches (2 positions) upstream and dowstream facilitate the assembly or the disassembling of the circuit breakers on the DIN-rail.

☐ terminals with tightening compensation.
These circuit breakers are equipped with screw cages with tightening compensation, reinforcement cage cable holding jaws. These elements contribute to an effective cable tightening over time.

☐ These circuit breakers are equipped with cable terminals of type “fast on” upstream and downstream to feed an auxiliary low voltage circuit (indicating lights, auxiliary control...)
Max. current 6A
max. cable csa - 6 mm^2

☐ lockable toggle
MCB can be locked in “Off” position by the integrated locking facility on the toggle.
This lock allows to insert a 2,5-3,5mm plastic cable tie where you can fit a warning card if necessary and allows a safer working environment for all personnel.

☐ RCD Add-on blocks, simple, quick, adjustable and fixed
1. assembly
2. connection
3. locking
the assembly of the add-on block is carried out very quickly and easily. Simple and fast : it is a Hager innovation. add-on blocks 125A are available in fixed version and adjustable version.

Model	Icc/Curve	Accessories	Fast-on connection	Tightening comp. system	Lockable handle	Front product labelling
HLF	10kA / C	YES	NO	NO	NO	YES
HMC / HMD	15kA / C, D	YES	YES	YES	YES	YES

Miniature circuit breakers 80-125A
HLF : “C” 10000 - 10 kA

new

Curves ”C”

In 80 to 125 A

10000
(IEC 60898-1)
10 kA
IEC 60947-2

Tripping curves :
“C” magnetic setting between 5 and 10 In.

Use :
residential, commercial and industrial applications

Connection capacity :
- 35mm² flexible wire (50mm² possible with some cable end-caps),
- 70mm² rigid wire

KEMA approved according to IEC 60898-1, 947-2 standards

HLF 199S

HLF 299F

HLF 399S

HLF 499S

Designation	*In / A*	*Width in ▮ 17,5 mm*	***Ref.*** . ***curve C***
Circuit breakers 1 pole	80	1,5	**HLF 180S**
	100	1,5	**HLF 190S**
	125	1,5	**HLF 199S**
Circuit breakers 2 poles	80	3	**HLF 280S**
	100	3	**HLF 290S**
	125	3	**HLF 299S**
Circuit breakers 3 poles	80	4,5	**HLF 380S**
	100	4,5	**HLF 390S**
	125	4,5	**HLF 399S**
Circuit breakers 4 poles	80	6	**HLF 480S**
	100	6	**HLF 490S**
	125	6	**HLF 499S**

Miniature circuit breakers 80-125A
HMC : “C” 15000 - 15 kA

new

Curves ”C”

In 80 to 125 A

15000
(IEC 60898-1)
15 kA
IEC 60947-2

Tripping curves :
“C” magnetic setting between 5 and 10 In.

Use :
residential, commercial and industrial applications

Connection capacity :
- 35mm² flexible wire (50mm² possible with some cable end-caps),
- 70mm² rigid wire

KEMA approved according to IEC 60898-1, 947-2 standards

HMC 199

HMC 299

HMC 399

HMC 499

Designation	*In / A*	*Width in ▮ 17,5 mm*	***Ref.*** . ***curve C***
Circuit breakers 1 pole	80	1,5	**HMC 180**
	100	1,5	**HMC 190**
	125	1,5	**HMC 199**
Circuit breakers 2 poles	80	3	**HMC 280**
	100	3	**HMC 290**
	125	3	**HMC 299**
Circuit breakers 3 poles	80	4,5	**HMC 380**
	100	4,5	**HMC 390**
	125	4,5	**HMC 399**
Circuit breakers 4 poles	80	6	**HMC 480**
	100	6	**HMC 490**
	125	6	**HMC 499**

Miniature circuit breakers 80-125A
HMD : “D” 15000 - 15 kA

new

Curve ”D” **15000**
IEC 60898-1
15 kA
IEC 60947-2

In 80 to 125 A

Tripping curve :
“D” magnetic setting between 10 and 20 In.

Use :
commercial applications

Connection capacity :
- 35mm² flexible wire (50mm² possible with some cable end-caps)
- 70mm² rigid wire.

KEMA approved according to IEC 60898-1, 947-2 standards

Désignation	*In / A*	*Width in 17,5 mm*	***Ref.***
Circuit breakers 1 poles	80	1,5	**HMD 180**
	100	1,5	**HMD 190**
	125	1,5	**HMD 199**
Circuit breakers 2 poles	80	3	**HMD 280**
	100	3	**HMD 290**
	125	3	**HMD 299**
Circuit breakers 3 poles	80	4,5	**HMD 380**
	100	4,5	**HMD 390**
	125	4,5	**HMD 399**
Circuit breakers 4 poles	80	4,5	**HMD 480**
	100	4,5	**HMD 490**
	125	4,5	**HMD 499**

HMD 299

HMD 399

HMD 499

Accessories for circuit breakers

new

Designation	*Characteristics*	***Réf.***
Terminal covers/ screw cap	Allows to cover connection terminals, screws of circuit breakers. The screw covers can be sealed.	**MZN 130**
Phase separator	1 set of 3 phase separators	**MZN 131**

MZN 130

MZN 131

Auxiliaries and accessories for MCBs & RCCBs

All auxiliaries are common to both single and multi-pole circuit breakers. These auxiliaries are fitted to the left hand side of devices.
Fault indication, auxiliaries, shunt trips, and under-voltage releases are fitted with a flag indicator that indicates the automatic/remote tripping of the device.

Test mode for CZ001, MZ201, MZ202 : possible to test cabling of auxiliary circuits operation by tripping-over contacts manually. Resetting of contact occurs simultaneously with MCB/RCCB resetting.

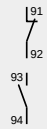
CZ001 must be fitted on the RCCB before fitting maximum one additional auxiliary (MZ203 to MZ206).
Up to 4 auxiliaries can be fitted on MCB.

MZ 201

MZ 204

MZ 205

MZ 175

Designation	*Description*	*Width in 17.5mm*	*Pack qty.*	***cat. ref.***
Auxiliary + alarm switch	1 module wide for ON/OFF & trip indication	1	1	**CZ 001**
Auxiliay contacts 6A - 230V~ 3A - 440V~ allows remote indication of main contact status. 	1NO + 1NC auxiliary contact	1/2	1	**MZ 201**
Signal contacts 6A - 230V~ 3A - 440V~ signal contact indicates a fault condition (e.g. MCB tripped on overload or short circuit). flag indicator red - MCB tripped 	1NO + 1NC signal contact	1/2	1	**MZ 202**
Shunt trip allows remote tripping of the device 	230 - 415 Vac 110 - 130 Vdc	1	1	**MZ 203**
	24 - 48 Vac 12 - 48 Vdc	1	1	**MZ 204**
Under voltage release allows MCB to be closed only when voltage is above 70% of Un. MCB will automatically trip when voltage falls by 35% of Un 	48 Vdc	1	1	**MZ 205**
	230 Vac	1	1	**MZ 206**
Locking kit for the dolly of the device supplied without padlock.	this allows locking of the device in the on/off position.		2	**MZN175**

RCD add-on blocks type AC ~ , type AC ⌇ and HI for circuit breakers HMB, HMC, HMD, HLE, HLF

new

RCD add-on blocks for circuit breakers HMB, HMC, HMD, HLE, HLF.

Fixed :
- high sensitivity 30 mA instantaneous
- low sensitivity 300 mA - instantaneous.

Settings :
- sensitivity IΔn 0,3 - 0,5 - 1 A ...
- delay S Δt 0 - 60 -150 ms.

These devices are intended to be fixed on the right side of the circuit breakers to form differential circuit breakers from 80 to 125A, two, three or four-pole.

This "circuit breaker + block" ensures, in addition to the overload and short circuit protection, the protection of the installations against the insulation defects (300mA and 1A) and the protection of the people against the direct contacts (30mA) and indirect (300mA).

Adjustable blocks :
the setting is done by actuating the thumbwheel in front face. The setting thumbwheels are protected by a transparent sealable cover.

Dissassembly :
the bistable latch (2 positions) facilitate the assembly or dissassembly by the bottom of the "circuit breaker + block."

These RCD add-on blocks exist in version AC and in version A-HI.

Version AC ~ :
the add-on blocks are protected against unexpected tripping caused by the transitory leakage currents : lightning, capacitive loading.
Version A and HI :
type A ⌇ :
when the electrical load is likely to produce fault component dc pulsating current, the protection of the people must be carried out by RCDs of type A.

High Immunity :
the products with "reinforced immunity" reduce the unexpected tripping when they protect equipment generating disturbances (micro-processing, electronic ballast,...)

The differential defect or earth fault is visualized by the rearmament handle of the block in low position (yellow colour).
Test button for differential functioning check.

Tightening compensation cages
these circuit breaker blocs are equipped with screw cages with tightening compensation, reinforcement arch and cable holding jaws. These elements contribute to an effective tightening over time.

Connection capacity :
- 35mm² flexible connection (50□ possible with some terminals),
- 70mm² rigid connection.

Assembly and disassembly facilitated by the drawer assembly system. The terminal cover is dependent of the add-on block. It is provided with keying systems avoiding the omission of terminal tightening downstream of the circuit breaker. .

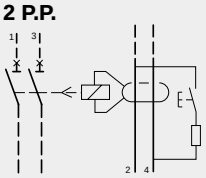
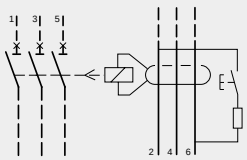
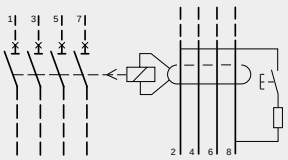
Nominal voltage : -15 +10 %
2 poles : 230 V
three and four-pole : 230/400 V
test button : 230/400 V.

In conformity with the requirements of the appendix G of the IEC 61009-1.
In conformity with the requirements of standard IEC 60947-2.

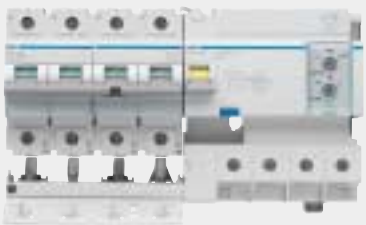
BTC 280E

BTH 380E

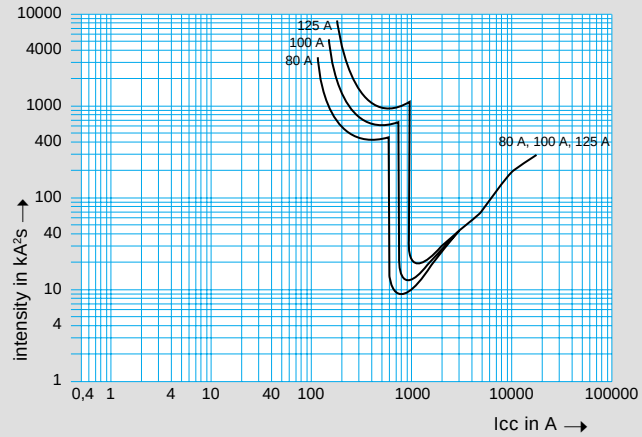
BDC 480E

Designation	*Sensitivity fixed / adjustable IΔn*	*In / A*	*Width in ▮ 17,5 mm*	***Ref.*** add-on blocks AC	add-on blocks A-HI
Add-on blocks 2 poles 2 P.P. 	fixed 30 mA	125	6	**BDC 280E**	**BDH 280E**
	adjustable 0,3 - 0,5 - 1 A S 0 - 60 - 150 ms	125	6	**BTC 280E**	**BTH 280E**
Add-on blocks 3 poles 3 P.P. 	fixed 30 mA	125	6	**BDC 380E**	**BDH 380E**
	adjustable 0,3 - 0,5 - 1 A S 0 - 60 - 150 ms	125	6	**BTC 380E**	**BTH 380E**
Add-on blocks 4 poles 4 P.P. 	fixed 30 mA	125	6	**BDC 480E**	**BDH 480E**
	fixed 300 mA	125	6	**BFC 480E**	**BFH 480E**
	adjustable 0,3 - 0,5 - 1 A S 0 - 60 - 150 ms	125	6	**BTC 480E**	**BTH 480E**

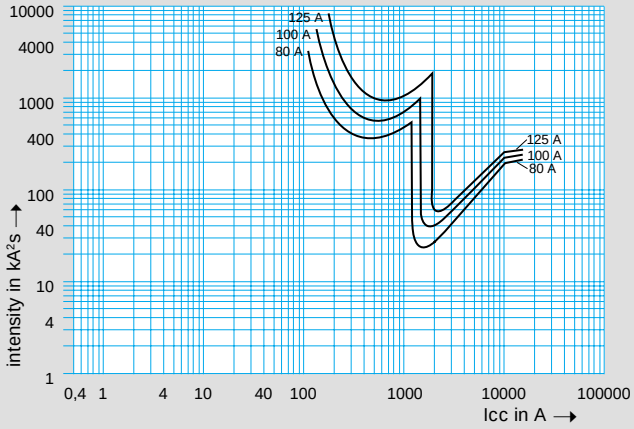
association circuit breaker + add-on block 4 poles adjustable



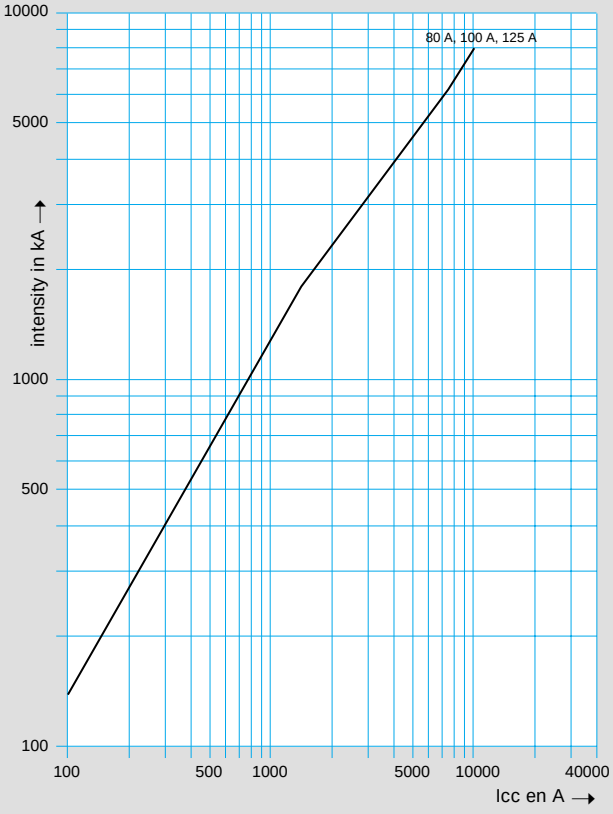
Current limiting at 400 V
MCB's : **HMC - HLF**



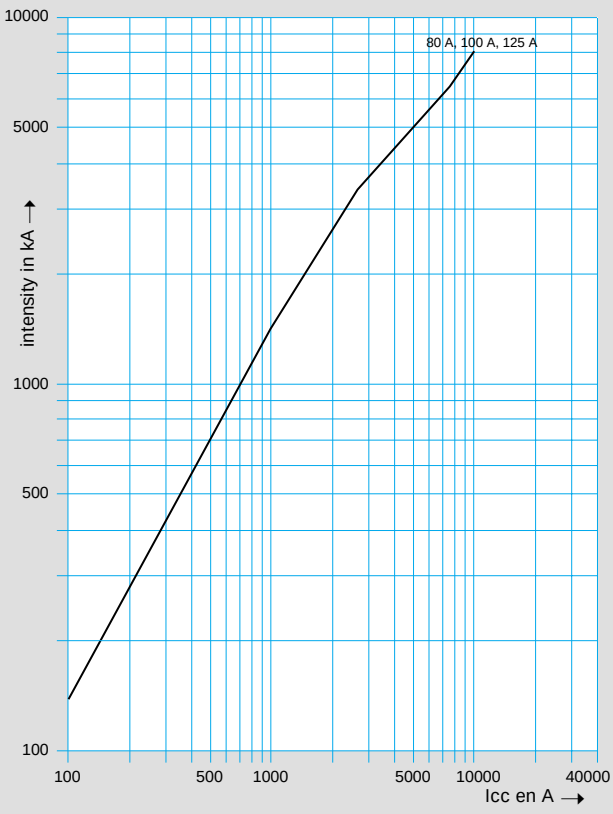
MCBs : **HMD**



Short circuit limiting at 400 V
MCB's : **HMC - HLF**



MCB's : **HMD**



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