Enclosed 100A Main Switch with 40A RCBO
Type 2 Surge Device

RCBO Rated For Continuous 7.5kW EV Charging.

The unit is designed to be installed before the consumer unit or distribution board on an installation fed from the mains supply into the top of the 100A switch with the supply to the car charger/ load being fed from the top of the RCBO. The main earthing conductor is also connected into and out of the earth terminal on the earth bar within the enclosure.

Fitted with a 100A Swith disconnector with 40A RCBO. the RCBO has an InA of 36A for continuous 7.5kW EV charging.

SPD version protects the installation against transient overvoltages.

Surge protection devices are designed to protect electronic equipment within an installation from the harmful effects of transient overvoltages.
BS 7671 regulation 443.4.1 now requires protection against transient overvoltages could result in:
(i) serious injury to, or loss of, human life
(ii) failure of a safety service, as defined in part 2
(iii) significant financial or data loss.

For all other cases, protection against transient overvoltages shall be provided unless the owner of the installation declares it is not required due to any loss or damage being tolerable and they accept the risk of damage to equipment and consequential loss. For VR640EVSPD The Line is protected by a Metal Oxide Varistor (MOV) and the neutral by a spark gap device. The Metal Oxide Varistor will degrade each time it deals with high voltage or electromagnetic disturbances, when it is end of life the flag will turn red and the cartridge will require to be changed. At this point the cartridge will fail open circuit and the device will no longer provide surge protection. Simply remove the cartridge and replace with a new cartridge (SPB015, SPB015N). The rest of the installation will remain unaffected.

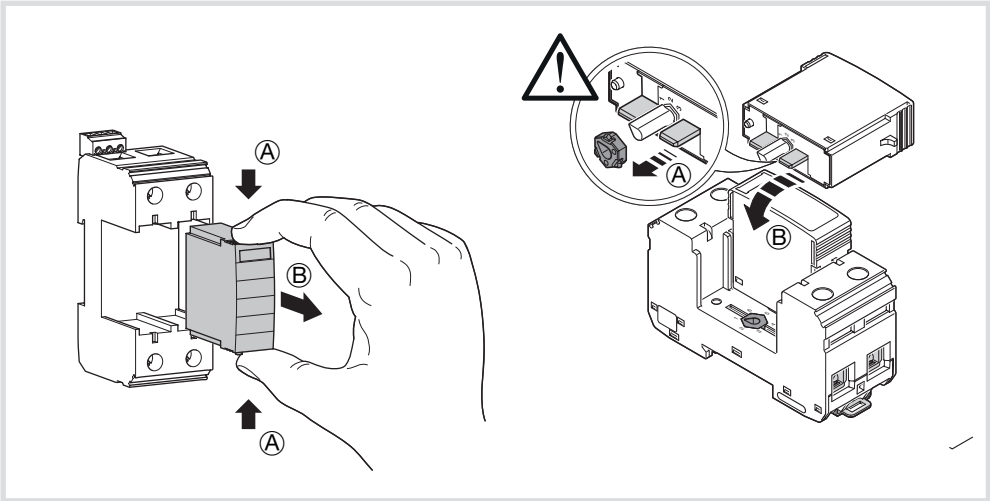
Description	Reference
Enclosed 100A Main Switch with 40A 30mA 6kA DP RCBO	**VR440EV**
Enclosed 100A Main Switch with 100A 30mA 6kA DP RCBO & Type II Surge Protection	**VR640EVSPD**

Features & Benefits

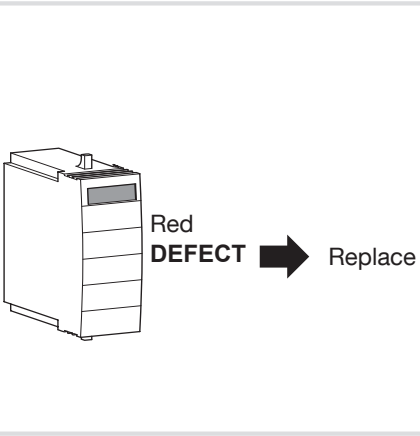
- RCBO rated at 36A for continuous loading for a 3.6kW or 7.5kW power rating
- Ideal when requiring Supply to Electric Vehicle charger
- Protects the installation against transient overvoltages.(SPD version)
- End of life indicator on Line cartridge gives indication when replacement is required.(SPD version)
- No space required inside existing consumer unit or distribution board.

Interface characteristics	
Rated & operational voltage (Un / Ue) 230V a.c. 50Hz	
Rated insulation voltage (Ui) 320V a.c. 50Hz	
Rated impulse withstand voltage (Uimp) 4kV	
Rated current of the Assembly (InA) 36A	
Rated current of an Outgoing circuit (Inc) RCBO 36A	
Rated conditional short-circuit current of the ASSEMBLY (Icc) Annex ZB: 16 kA rms at 250V, power factor 0.6 with equipment and arrangements specified in Hager's technical documentation / catalogue.	
Protection against electric shock Consumer unit shall be installed in an electrical system conforming to the current edition of IEC 60364 / BS 7671	
Rated diversity factor (RDF) / Values of assumed loading Inc = 36A, RDF = 1.0.	Note: RDF only applies to continuously and simultaneously loaded circuits. In principle, this means adjacent circuit-breakers having a load 'on' time exceeding 30 minutes or where a load not exceeding 30 minutes has an 'off' time less than the 'on' time, will need to have the rated diversity factor applied as indicated.
Rated frequency (fn) 50 Hz	
Pollution degree 2	
Types of system earthing for which the ASSEMBLY is designed TNC-S, TN-S when installed in an electrical installation complying with BS 7671	
Indoor use only	
Stationary ASSEMBLY	
Degree of protection IP30 (VR440EV & VR640EVSPD) with Door closed and full compliment of outgoing devices and or blanks fitted. Note: The installer is responsible to maintain the IP integrity using suitably rated IP glands	
Intended use Intended for use in garages or similar premises.	
Electromagnetic compatibility (EMC) classification EMC Environment B	
External design VR : Wall-mounted, surface type, enclosed assembly.	
Mechanical impact protection IK 05	
The type of construction Fixed parts	
Type A DBO (Distribution board for use by ordinary persons)	

SPB015, SPB015N



Fault indication



Key Specifications

- Power Supply System -TN / TT
- Requirement class -SPD class II acc. to IEC 61643-11; SPD Type 2 acc. to EN 61643-11
- Max. continuous operating voltage Uc -L-N: 275 V a.c. / N-PE: 260 V a.c.
- Nominal voltage U_n -230/400 V AC 50/60 Hz
- Nominal discharge current I_n (8/20) microseconds 20 kA
- Max. discharge current I max (8/20) microseconds 40 kA
- Combination of high capacity voltage limiting varistors and N-PE spark gap
- Suitable for CT2 connection as per 534.4.3.2 BS7671 18th Edition
- Optical status indication for each cartridge
  Clear = Healthy, Red/DEFECT = Replace
- Pluggable surge protection modules for ease of replacement
- Each cartridge incorporates its own thermal disconnect mechanism
- Cartridges are mechanically coded to prevent mis-connection
- Cartridges can be routinely checked and changed if required without interrupting supply to loads
- No secondary back-up protection required.

General Data	
Standards/regulations	IEC 61643-11 2011 EN 61643-11 2012
IEC test classification	T2
EN type	T2
Mode of protection	L-N L-PE N-PE
Mounting type	DIN rail: 35 mm
Degree of pollution	2
Overvoltage category	III
Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport) Permissible humidity (operation)	-40 °C ... 80 °C

Electrical Data	
Nominal voltage U_n	230 / 400 V AC (TN / TT)
Nominal frequency f_n	50 Hz (60 Hz)
Maximum continuous operating voltage Uc (L-N)	275 V AC
Maximum continuous operating voltage Uc (N-PE)	260 V AC
Residual current I_{PE}	≤ 5 uA
Standby power consumption Pc	≤ 360 mVA
Nominal discharge current In (8/20) µs	20 kA
Maximum discharge current Imax (8/20) µs	40 kA
Follow current interrupt rating I_{fl} (N-PE)	100A
Short-circuit current rating IsccR	50kA
Voltage protection level Up (L-N)	≤ 1.5 kV
Voltage protection level Up (L-PE)	≤ 1.5 kV
Max. backup fuse	125 A (gG)