Low Voltage

Power Quality Products - Product overview

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Life Is On | Schneider Electric

Schneider Electric Profile

Schneider Electric is the global specialist in energy management and automation. With revenues of €27 billion in FY2016, our 160,000 employees serve customers in over 100 countries, helping them to manage their energy and process in ways that are safe, reliable, efficient and sustainable. From the simplest of switches to complex operational systems, our technology, software and services improve the way our customers manage and automate their operations. Our connected technologies will reshape industries, transform cities and enrich lives.

At Schneider Electric, we call this Life Is On.

Schneider Electric Global footprint

27
Billion € sales
FY 2016 revenues

1,60,000
People in 100 + countries

5%
Revenue devoted to R&D

Schneider Electric India footprint

Employee strength
19,500+
People

Industrial footprint
28
Factories

Sales Offices
48
Sales Offices

Distribution Centers
45 Distribution Centers

R&D focus
1,300+
R&D staff (based in India)

Channel strength
61,000+ Point of sales
2,600+ Partners

Schneider Electric is specialized in Energy Management with an objective to optimize electrical power and maximize the savings.

In this constant endeavour, we offer Low Voltage Capacitors among the wide range of Power quality solutions catering to various industries including Utility & Industrial applications to provide power factor correction & Harmonic mitigation.

Wide range of Power Capacitors

> Easy Can
> Varplus Can
> VarplusGH Can
> Varplus SDY Box
> Varplus HDY Box
> Varplus Energy Box
> Varplus APP Box

Safety

> Self - healing
> Pressure - sensitive disconnector is provided in each phase of the capacitor which enables safe disconnection and electrical isolation at the end of life of capacitor
> Discharge resistor fitted - standard discharge time 60 sec

Main features

> Optimized compact design for ease of installation
> Long life expectancy
> Special resistivity and metallization profile to enhance life and thermal efficiency
> Vertical & Horizontal Mounting position possible
> The unique finger -proof CLAMPTITE terminal with discharge resistors for safety
> The unique cage clamp terminal (CLAMPTITE) design enables the use of cables without lugs, which ensures better termination and avoids loose connection

Selection of capacitors (% of non- linear loads connected in system)

This is the common practice to arrive at the capacitor duty based on the type of application.

> If the % non - linear load as compared to transformer capacity is below 10% it is recommended to use Standard duty capacitors
> If % non-linear loads up to 20% it is recommended to use Heavy duty capacitors
> If % non-linear loads up to 25% it is recommended to use Energy capacitors
> If % non-linear loads between 25% to 50% it is recommended to use Reactor + Capacitors (Detuned Filters)
> If above % non-linear loads above 50% it is recommended to use Active Filter solution. For this a harmonic study is usually recommended in arriving at the most appropriate solution

Capacitor life expectancy criteria

> Capacitor Rated Voltage
> Permissible Over Voltage
> Maximum permissible current
> Maximum ambient temperature
> Number of switching operations
> Environmental factors
> Application based selection

Varplus Can

Technical Specifications			
General Characteristics	Varplus Can Standard Duty	Varplus Can Heavy Duty	Varplus Can GH Duty
Standards	IEC60831-1/2, IS 13340-1993, IS 13341-1992		
Voltage range	440V	440V, 480V, 525V	440V, 480V, 525V
Frequency	50Hz		
Power range(kVAr)	1 to 25 kVAr	1 to 50 kVAr	5 to 50 kVAr
Losses (dielectric)	< 0.2 W/ kVAr		
Losses (total)	≤ 0.5 W/ kVAr		
Capacitance tolerance	-5 %, +10%		
Voltage test • Between terminal • Between terminal & container • Impulse voltage	• 2.15 xUN (AC), 10s • ≤ 525V: 3kv (AC), 10s or 3.66kv (AC), 2s • > 525V: 3.66kv (AC), 10s or 4.4kv (AC), 2s • ≤ 690V: 8kv		
Discharge resistor	Fitted, standard discharge time 60s		
Ambient temperature	-25˚C / + 55˚C (class D)		
Humidity	95%		
Altitude	2,000 m above sea level		
Over voltage	1.0 x Un - continuous 1.10 x Un - up to 12 hrs per day 1.15 x Un - up to 30 min per day 1.20 x Un - 5 min 1.30 x Un - 1 min		
Over current	Up to 1.5 x I_N	Up to 1.8 x I_N	Up to 1.8 x I_N
Peak inrush current	200 x I_N	250 x I_N	250 x I_N
Switching operations (max)	Up to 5000 switching operations per year	Up to 7000 switching operations per year	Up to 7000 switching operations per year
Mean Life expectancy	Up to 1,00000 hrs	Up to 130,000 hrs	Up to 130,000 hrs
Installation characteristics			
Mounting position	Indoor, upright	Indoor, upright & horizontal	Indoor, upright & horizontal
Fastening	Threaded M12 stud at the bottom		
Earthing			
Terminal	CLAMPTITE - three way terminal with electric shock protection (finger-proof) & double fast-on terminal in lower kVAr		
Safety features			
Safety	Self-healing + Three phase pressure-sensitive disconnector + In built tamper proof Discharge device		
Protection	IP20 Three phase		
Construction			
Casing	Extruded Aluminium Can		
Dielectric	Metalized polypropylene film with Zn/Al alloy.	Metallized polypropylene film with Zn/Al alloy. Special resisity & profile, special edge (Wave-cut)	
Impregnation	Non-PCB, PUR soft resin	Non-PCB, PUR sticky resin (Dry)	Inert Gas-Nitrogen, Dry type, Non-PCB

Varplus Box

Technical Specifications				
General Characteristics	Varplus Box Standard Duty	Varplus Box Heavy Duty	Varplus Box Energy	Varplus Box APP
Standards	IEC60831-1/2, IS13340-1993, IS13341-1992			IS13585-1994
Voltage range	440V	440V, 480V, 525V		
Frequency	50Hz			
Power range (kVAr)	7.5 kVAr to 25 kVAr	5 kVAr to 50 kVAr	5 kVAr to 50 kVAr	5 kVAr to 50 kVAr
Losses (dielectric)	< 0.2 W/ kVAr			
Losses (total)	≤ 0.5 W/ kVAr			
Capacitance tolerance	-5 %, +10%			
Voltage test • Between terminal • Between terminal & container • Impulse voltage	• 2.15 xUN (AC), 10s • ≤ 525V: 3kv(AC),10s or 3.66kv(AC), 2s • > 525V: 3.66kv(AC), 10s or 4.4kv(AC),2s • ≤690V: 8kv			
Discharge resistor	Fitted, standard discharge time 60s			
Ambient temperature	-25˚C / + 55˚C (class D)	-25˚C / + 55˚C (class D)	-25˚C / + 70˚C (class D)	-10˚C / + 50˚C (class C)
Humidity	95%			
Altitude	2,000m above sea level			
Over voltage	1.0 x Un - continuous 1.10 x Un - up to 12 hrs per day 1.15 x Un - up to 30 min per day 1.20 x Un - 5 min 1.30 x Un – 1 min			
Over current	Up to 1.5 x I_N	Up to 1.8 x I_N	Up to 2.5 x I_N	Up to 2.0 x I_N
Peak inrush current	200 x I_N	250 x I_N	400 x I_N	350 x I_N
Switching operations (Max)	Up to 5000 switching operations per year.	Up to 7000 switching operations per year.	Up to 10000 switching operations per year.	Up to 8000 switching operations per year.
Mean Life expectancy	Up to 1,00000 hrs	Up to 130,000 hrs	Up to 160,000 hrs	Up to 150,000 hrs
Installation characteristics				
Mounting position	Indoor upright	Indoor, upright & horizontal	Indoor upright	Indoor upright
Fastening	Mounting cleats			
Earthing				
Terminal	Bushing terminals designed for large cable termination and direct bus bar mounting for banking			
Safety features				
Safety	Self healing + Pressure sensitive disconnector (PSD) for each phase + Discharge device			Internal Fuse
Protection	IP 20			
Construction				
Casing	Steel enclosure			
Dielectric	Metallised Polypropylene Film with Zn/Al alloy metallization	Metallised Polypropylene Film with Zn/ Al alloy, special resistivity & profile special edge (Wave cut)	Double metalized Paper + Polypropylene Film	Aluminum Foil + Polypropylene Film
Impregnation	Non-PCB, PUR soft resin	Non-PCB, PUR sticky resin (Dry)	Non PCB oil	Non PCB oil

Solutions for Harmonic Rich Applications

Depending on the magnitude of harmonics in the network the different configurations can be adopted.

> Harmonic Filters (passive filter)
- Detuned Filters (5.7%, 7% & 14%)

> Active filters
- Three phase 3 wire system
- Three phase 4 wire system

> Hybrid Filter
- Combination of passive and active filters. Active filters for harmonic reduction and passive filter for PF improvement

Detuned Reactors

From 20kVAr to 100kVAr

The detuned reactor is designed to mitigate harmonics, improve power factor and avoid electrical resonance in low voltage electrical networks.

Main Features

> Special Design to ensure compactness with superior performance
> High level of saturation - Linearity
> High grade laminations in magnetic circuit
> Easy pad termination and mounting
> Over temperature protection
> Low losses
> Designed and tested as per IEC 60076-6
> Rated Voltage : 440V , 50Hz
> Insulation class H
> Aluminium wound, Dry type
> kVAr range ; 5 to 100 kVAr
> Detuning Factor (P) : 5.7% (210Hz), 7% (189Hz), 14% (134Hz)

Operating conditions

- Use: indoor.
- Storage temperature: -40 °C, +60 °C.
- Relative humidity in operation: 20-80 % .
- Salt spray withstand: 250 hours (for 440V - 50 Hz range).
- Operating temperature:
  - altitude:≤ 1000 m: Min = 0 °C, Max = 55 °C, highest average over 1 year = 40 °C, 24 hours = 50 °C
  - altitude:≤ 2000 m: Min = 0 °C, Max = 50 °C, highest average over 1 year = 35 °C, 24 hours = 45 °C

Installation guidelines

- Forced ventilation required.
- Vertical detuned reactor winding for better heat dissipation.

As the detuned reactor is provided with thermal protection, the normally closed dry contact must be used to disconnect the step in the event of overheating.

Technical specifications

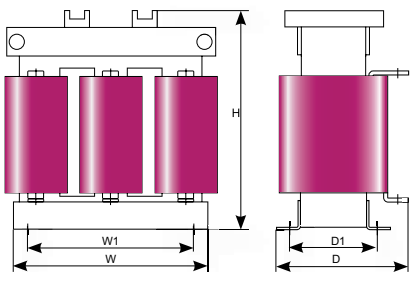
General characteristics	
Description	Three-phase, dry, magnetic circuit, impregnated
Degree of protection	IP00
Insulation class	H
Rated voltage	440V
Inductance tolerance per phase	-3, +5 %
Insulation level	1.1 kV
Dielectric test 50/60 Hz between windings and windings/earth	4kV, 1 min
Thermal protection	Restored on terminal block 250V AC, 2 A

Let's define the service current (IS) as the current absorbed by the capacitor and detuned reactor assembly, when a purely sinusoidal voltage is applied, equal to the network service voltage (V). I_S = Q (kvar)/(√3xU_S)

In order to operate safely in real conditions, a detuned reactor must be designed to accept a maximum permanent current (IMP) taking account of harmonic currents and voltage fluctuations.

The following table gives the typical percentage of harmonic currents considered for the different tuning orders.

(%)	Harmonic currents			
Tuning order / Relative Impedance	i3	i5	i7	i11
2.7 / 14%	5	15	5	2
3.8 / 7%	3	40	12	5
4.2 / 5.7%	2	63	17	5



For dimensions and more details, please consult us.

Detuned reactor has to be protectced from over cu is applied in order to allow long-term operation at a The maximum perment current (IMP) is given in the

Tuning order	IMP (times IS)
2.7/14%	1.12
3.8 / 7%	1.2
4.2 / 5.7%	1.3

Accusine SWP

Active Filter

AccuSine SWP

> Three Phase 4 wire connection
> Up to 400V - 440V
> Units from 20A to 120A, Parallel up to 4 units
> Cancellation to 50th order
> Neutral harmonic correction at 3 times unit rating
> PF correction to set point
> Harmonic correction time 3 cycle.
> Reactive correction time 3 cycle
> Control response time 100 µs
> Modus & J-bus communications

Technical Specification	
Standard RMS output current ratings	20A, 30A, 45A, 60A, 90A,120A, 400V - 440V, AC
Neutral compensation capacity	3 times rating
System Input	
Normal Voltage	440V AC ; +- 10% Auto sensing, other voltages avilable with transformer
Normal frequency	50/60Hz, +_3%, auto sensing
Number of phases	3 Phase 4 Wire
Power switching devices	IGBT
Switching frequency	9 KHZ
Control topology	Digital
Operation with single phase loads	yes
Currrent Transformer(CT)	400Hz & class 1 accuracy 300, 500, 1000, 1500, 2000, 3000, 4000, 5000 & 6000A, primary with 1A secoundary; 3.5 VA burden per unit
Quantity of Cts required	3
Technical Characteristics	
Harmonic cancellation spectrum	2nd to 50th, Discrete
RMS current attenuation	>10:1
Parallel configuration	4 units of same rating (master/slave)
Modes of operation	Harmonic, Power Factor correction indipendent or combined
Priority assignment of modes	Harmonic cancellation
Response Time	Control response time 100 µs
Harmonic correction time	3 cycles
Voltage above base units design	To 15 kv
internal overtemperature protection	Automatic roll back of output current
Display	Graphic display with keypad
Display Languages	Engilish
Operators	keypad
HMI Display parameters & graphics	
	LED for run, stop, current limit graphic display, mains voltage and current , load voltage and current. THDi mains, THDi- load, event log, harmonic spectrum - mains & load
Communication capability	**J - Bus & Modbus**
Acoustic Noise (IS0 3746)	<_67 db at one meter from unit surface
Color	RAL 9002
Environmental conditions	
Operating temperature	To 40ºC intermittent, recommended 25ºC
Relative humidity	0- 95% , noncondensing
Seismic qualification	IBC and ASCE7
Operating Altitude	1000m (derate 1%/100m above)
Contamination Level (IEC60721-3-3)	Chemical Class 3C3(1) Mechnacial class 3S3(2)
Protection (enclosure)	IP 20
Reference Technical Standards	
Design	IEC/EN 60439-1, EN61000-6-4 Class A, EN61000-6-2
Product standards	CE certified , UL, cUL, CSA, ABS, C- Tick
Provides complaince to any world wide harmonic standard	IEEE 519, G5/4-1, GBT 14549, IEC - 61000-3

AccuSine PCS+

AccuSine PCS+

> Three Phase 3 wire connection
> From 208V to 690V supply (higher voltage with transformers)
> Units from 60A to 300A, parallel up to 99 units
> Cancellation to 50th harmonic
> PF correction to set point
> Load balancing of input current.
> Rapid VAR injection in ¼ Cycle
> Modbus TCP/IP and Ethernet IP communications
> Can be used with PF capacitors as Hybrid VAr Compensation (HVC) system
> Control response time 25 µs.
> Harmonic correction time 2 cycle
> Reactive correction time 1/4 cycle

Technical Specification	
Standard RMS out put current ratings	60A, 120A, 200A, 300A - 380V AC to 480V AC 47A, 94A, 157A, 235A - 480 - 600V AC 40A, 80A, 133A, 200A - 600 - 690V AC
Electrical System Characteristics	
Normal voltage	380V - 480V AC : + 10% / - 15 % 480V - 600V AC : + 10% / - 15 % 600V - 690V AC : + 10% / - 15 %
Normal frequency	50/60Hz, +_3%, auto sensing
Number of phases	3 phase/3 wire
Technical Product Characteristics	
Power electronics	IGBT: 3 Level inverter
Switching frequency	20 KHZ
Topology	Digital harmonic FFT, Digital reactive power
Losses	At 480V AC < 3% : at 690V AC < 5%
Current transformer (CT)	Any ratio with 1 or 5 ampere secondry, type 1 accuracy, 50/60 or 400 Hz rated, Grounded
Quantity of CT	2 or 3 for 3 - wire electrical system, 3 requried when single phase loads are present (to neutral)
CT VA loading	15 mΩ
Spectrum cancellation	2 nd to 51 st discrete; fully selectable per harmonic order (amplitude and on/off)
Control basis	closed loop for new installation Open loop compatible for retrofit applications
CT position	Closed Loop control: Source sense (at mains) CT or Load sense CT for single unit Open loopcontrol: Load sense CT or source CT single unit
Harmonic Operational Features	% THDi set point % THDv set point
Harmonic avoidance	Output at specific harmonic order turned off if resonance or lack of impedance detected; or manually truned off
Parallel operation	up to 10 Units per set of CT (to 51st order) any size combination backward compatibilty with AccuSine PCS operated in parallel
Parallel operation options	Master/Master (master receive mains CT) Master / Slave Multi - Master/multi-slave
Parallel sequence options	Lead/Lag with unit rotation: one unit operates to full capacity before next unit turns on : timed rotation Load Share: All operating units function at the same output percentage
Parall redundancy	Any unit with CT connections will automatically became master if the controling master is taken offline Automatic increase in output of all units to make up capacity any off line unit
Power factor correction	Optimiszed unit PF, Leading (capacitive) or lagging (inductive) power factor (Cos Ø)
Mains current balancing	Negative sequence current injected to balance fundamental current on the mains due to load Imbalance (inherently corrects displacement PF (Cos Ø)
Control response time	25 µs
Harmonic correction time	< 2 cycle (40ms)
Reactive correction time	1/4 cycle
Display	144mm QVGA TFT 64K - color touchscreen
Languages	English
Operator interface	Magelis HMI STU touch panel screen
Display parameters	THDi, THDv, oscilloscope for viewing many selected parameters, phasor diagrams load power, measured currents, for Ih, Is, If, I neg seg, PF (Cosf), injeted currents for Ih, I reactive, I neg seq etc.
Comunications Capability	Modbu RTU, Modbus TCP/IP
Discrete input/outputs	4 input and 4 out put dry contacts; assignable
Noise level (ISO3746)	<75db at one meter from unit surface
Color	RAL 7035 Enclosure, RAL 7022 Plinth (floor standing units)
Earthing (Grounding) systems	Supports TT, TN and IT grounding systems Solidly, low and high resistance grounded: ungrounded; corner grounded delta; high leg delta EMC filter ground Switch for IT, high resistance ground or corner grounded systems.

Technical Specification	
Environmental conditions	
Operating Temperature	60A,120A & 200A: IP00, IP20, UL type Open & UL Type 1 configurations 0ºC to 45ºC All others 0ºC to 40ºC Derate 2% per ºC to 50ºC
Relative humidity	to 95 % , noncondensing
Seismic rating	complies with IBC and ASCE7
Operating Altitude	1000m (derate 1% /100 m above) max 4800m
Automatic rollback of out put	Occurs whenver heatsink terperature sensor exceeds temperature limit
Ambient temperature shutdown	Absolute shutdown if air inlet temperature reaches 51ºC
Preset output limits (rms)	Programmable set limit due to altitude or ambient temperture - becomes fixed output limlt
Storage (in original shipping container)	Temperature : -20 to 60ºC Relative humidity ; to 95%, noncondensing Clean, dry and protected No conductive particles permited
Contaminant Levels- operating (IEC 60721 -3-3)	Chemical Class 3C2 Mechanical Class 3S2 Non conductive particles permitted
Contaminant levels - transport and storage	Chemical Class 3C3
(IEC 60721-3-3)	Mechanical Class 3S3 When stored in original shipping container No conductive particles permited
Reference Standards	
Design	CE EMC Certification IEC/EN 60439-1, EN 61000-6-4 Class A, EN 61000-6-2
Protection (enclosure)	IP00, IP20, IP31, IP54, UL type 1, UL type 2, UL type 12, UL Type Open
Standards compliance/certification	CULus (UL508, CSA 22.2 no.14) CE Certified, ABS, Lloyds, other local standards
Installation	
Wall mount	IP00, IP20, UL Type 1 & UL Typen Open
Free Standing	IP31, IP54, UL Type 2, & UL Type 12
Circuit protection	IP00 and IP20 - external means required Free standing enclosure - incoming circuit breaker or fused disconnect with mechanical door interlock
A/C Rating	to 415V AC - 200kA cULus ; 125kA IEC to 480V AC - 200kA cULus ; 75kA IEC to 600V AC - 200kA cULus ; 100kA IEC to 690V AC - no cULus rating ; 100kA IEC
Cable entry	UL Type open, IP00, ULType1, and IP20 - bottom only Free standing - top and bottom entry through gland plates
PCBA protection	Conformal coating on all PCBAs Polution Degree 2
Cooling configuration	Separate air plenums for heat sink section and PCBA section Heat sink (high heat plenum) input from bottom and exhaust out top All components in high heat plenum rated IP54 or better => no filtering required PCBA air supply must be clean and dry (filtering may be required) No conductive particles permitted
Service provisions	
HMI (Magelis STU)	Plain language out put (no cryptic codes) USB port for upload of new software and download of operational records
Service port	USB port: commission, program, or diagnostics via a laptop computoer when power is on or off: laptop provides power to control board when no unit is present
Commissioning	On-board step-by-step process: CT automatic sizing, phase rotation and polarity; external transformer ratio and phase shift heat test and more.

Typical applications

> Textile Industries
> Automobile Industries
> Steel plants
> Beverages units
> Processing units
> Chemical plant
> Cements plants
> Captive power generation plants
> Software Industries

Selection of Capacitor (kVAr & Voltage) for Detuned Filter Application

NEW

From 5kVAr to 15kVAr

+

Effective kVAr output of Detuned Filter @ 440V	Selection of 480V Capacitors for 7%, 5.7% Detuned filter for 440V	Selection of 525V Capacitors for 7%,5.7% Detuned filter for 440V	Selection of 525V Capacitors for 14% Detuned filter for 440V
5	5 kVAr 7%, 5.7% Reactor 440V + 5.6 kVAr, 480V Capacitor	5 kVAr 7%, 5.7% Reactor 440V + 6.9 kVAr, 525V Capacitor	5 kVAr 14% Reactor 440V + 6.9 kVAr, 525V Capacitor
10	10 kVAr 7%, 5.7% Reactor 440V + 11.3 kVAr, 480V Capacitor	10 kVAr 7%, 5.7% Reactor 440V + 13.8 kVAr, 525V Capacitor	10 kVAr 14% Reactor 440V + 12.5 kVAr, 525V Capacitor
12.5	12.5 kVAr 7%, 5.7% Reactor 440V + 14.4 kVAr, 480V Capacitor	12.5 kVAr 7%, 5.7% Reactor 440V + 17.2 kVAr, 525V Capacitor	12.5 kVAr 14% Reactor 440V + 15.4 kVAr, 525V Capacitor
15	15 kVAr 7%, 5.7% Reactor 440V + 17 kVAr, 480V Capacitor	15 kVAr 7%, 5.7% Reactor 440V + 20.6 kVAr, 525V Capacitor	15 kVAr 14% Reactor 440V + 18.5 kVAr, 525V Capacitor
20	20 kVAr 7%, 5.7% Reactor 440V + 22.4 kVAr, 480V Capacitor	20 kVAr 7%, 5.7% Reactor 440V + 27.5 kVAr , 525V Capacitor	20 kVAr 14% Reactor 440V + 25 kVAr, 525V Capacitor
25	25 kVAr 7%, 5.7% Reactor 440V + 28.1 kVAr, 480V Capacitor	25 kVAr 7%, 5.7% Reactor 440V + 33.1 kVAr , 525V Capacitor	25 kVAr 14% Reactor 440V + 30.6 kVAr , 525V Capacitor
50	50 kVAr 7%, 5.7% Reactor 440V + 2 X 28.1 kVAr, 480V Capacitor	50 kVAr 7%, 5.7% Reactor 440V + 2 X 33.1 kVAr, 525V Capacitor	50 kVAr 14% Reactor 440V + 2 X 30.6 kVAr, 525V Capacitor
75	75 kVAr 7%, 5.7% Reactor 440V + 3 X 28.1 kVAr, 480V Capacitor	75 kVAr 7%, 5.7% Reactor 440V + 3 X 33.1 kVAr, 525V Capacitor	75 kVAr 14% Reactor 440V + 3 X 30.6 kVAr, 525V Capacitor
100	100 kVAr 7%, 5.7% Reactor 440V + 4 X 28.1 kVAr, 480V Capacitor	100 kVAr 7%, 5.7% Reactor 440V + 4 X 33.1 kVAr, 525V Capacitor	100 kVAr 14% Reactor 440V + 4 X 30.6 kVAr, 525V Capacitor

Note: Detuned Filter = Reactor + Capacitor combination

Varlogic APFC Relay – Classic Range

Technical Data	Description
Relay model	RT6/RT8/RT12
Rated voltage	440V
Current Input	5A, Single CT sensing
Operating current	50mA - 5.5A
Frequency (Hz)	50/60Hz
Response Delay Time	Between 10 sec to 1800 sec
Over voltage	Programmable
Display	4 Digit 7 segment, RED LED Display
Display Parameter	Power Factor (cosQ), RMS Voltage (V), RMS reactive current (I) Active Power (W), Reactive Power (VAr)
Main Feature	Auto CT polarity change over Over voltage protection Choice of different switching program 1) Rotational switching 2) Linear Operation 3) Auto Capacitor selection
RS485 communication	Nil

VarPlus Logic Series VL6, VL12 - Advanced Range APFC Relay

Technical Data	Description
Model	VPL06/12N
Standards	EMC : IEC 61010-1, IEC61000-6-2, IEC61000-6-4, IEC61326-1
No of steps	6 & 12 Steps
Rated Voltage (Un)	300V L-N / 519V LL CAT III or 550V CAT II
Measurment Voltage	110-220/240-380/415
Current input	1A or 5A.
Frequency (Hz)	50 /60 Hz
Potential free Output Contact	AC: 5A, 250V. DC: 1A, 48V
Settings and Parameter	0.7C to 0.7i Manual Chooice different steps
Response Delay Time	Programmable from 1 to 6500 S
Over voltage	>110% Un
Ambient Temperature	-20ºC to +60ºC
Display	LCD Graphic 56x25 (Backlit)
CT Input Cable (For Terminal Block)	2.5 mm2
Protection Class	IP41 (Front), IP54 by gasket. IP20 (Rear)
Terminal	Socket Terminal with Screw
Mounting	Flush mounting
Size	144 x 144 x 58 mm (H x W x D)
Panel Cutout	138 x 138 (+ 0.5) mm, thickness 1 - 3 mm
Panel Mounting	Flush mounting
Weight	0.6kG
Display Parameters	Power Factor (Cos Phi) Connected steps Switching steps and connected time counter Large LCD display to monitor real step status and other parameters Measurement of DQ – “kvar” required to achieve target cos phi.
Main Features	Main System parameters – Voltage, Current, Active, reactive and apparent power. Present cabinet temperature and maximum recorded temperature. THD(u) and THD(u) Spectrum 3rd to 19th – Measurement, Display and Alarm. No step sequence restriction like in the traditional relays. Any step sequences with auto detect. No programming needed. Easy to retrofit the faulty capacitor with different power. Quick and simple mounting and wiring. Connect to the digitized Schneider solutions through RS485 communication in Seamless connection to the Schneider software and gateways - through Modbus Choice of different switching programs Automatic Fixed Manual Easy commissioning Automatic Initialization and automatic step detection to do a auto commissioning. Automatic wiring correction - voltage and current input wiring correction. 1A or 5A CT secondary compatible. Do more with VarPlus Logic Programmable alarms with last 5 alarms log. Suitable for medium voltage applications. Suitable for 4 quadrant operations. Dual cos phi control through digital inputs or export power detection. Dedicated alarm and fan control relays. Advance expert programming Menu to configure the controller the way you need. New control algorithm designed to reduce the number of switching operations and quickly attain the targeted power fact Under compensation alarm
Alarms	Hunting alarm Configurable alarm for step derating Faulty Step Under/Over Voltage Alarm Temperature alarm THDu Limit alarm. Self correction by switching off the steps at the event of THDu alarm, Low/High Current Alarm Maximum operational limits - Time and number of switching
Communication	Modbus RS-485 serial port (RTU)

AccuSine SWP ordering reference number

Amps	Description	Reference Number
20	Accusine SWP 20A 400/440V 50Hz IP20 Unitary	PCS020Y4IP20U
30	Accusine SWP 30A 400/440V 50Hz IP20 Unitary	PCS030Y4IP20U
60	Accusine SWP 60A 440/440V 50Hz IP20 Parallel	PCS060Y4IP20P
120	Accusine SWP 120A 400/440V 50Hz IP20 Parallel	PCS120Y4IP20P

AccuSine PCS+ ordering reference number

Amps	Description	Reference Number
60	AccuSine PCS+ 60A 380V - 480V 50 Hz IP 31	PCS060D5IP31
120	AccuSine PCS+ 120A 380V - 480V 50 Hz IP31	PCS120D5IP31
200	AccuSine PCS+ 200A 380V - 480V 50 Hz IP31	PCS200D5IP31
300	AccuSine PCS+ 300A 380V - 480V 50 Hz IP31	PCS300D5IP31
Amps	Description	Reference Number
60	AccuSine PCS+ 60A 380V - 480V 50 Hz IP54	PCS060D5IP54
120	AccuSine PCS+ 120A 380V - 480V 50 Hz IP54	PCS120D5IP54
200	AccuSine PCS+ 200A 380V - 480V 50 Hz IP54	PCS200D5IP54
300	AccuSine PCS+ 300A 380V - 480V 50 Hz IP54	PCS300D5IP54
Amps	Description	Reference Number
47	AccuSine PCS+ 47A 500-600V 50Hz IP31	PCSP047D6IP31
94	AccuSine PCS+ 94A 500-600V 50Hz IP31	PCSP094D6IP31
157	AccuSine PCS+ 157A 500-600V 50 Hz IP31	PCSP157D6IP31
235	AccuSine PCS+ 235A 500-600V 50Hz IP31	PCSP235D6IP31
Amps	Description	Reference Number
80	AccuSine PCS+ 80A 600-690V 50Hz IP31	PCSP080D7IP31
133	AccuSine PCS+ 133A 600-690V 50Hz IP31	PCSP133D7IP31
200	AccuSine PCS+ 200A 600-690V 50Hz IP31	PCSP200D7IP31

VarPlus Logic APFC Relays - Advanced Range

No of Step	Description	Reference Number
6	VPL , 6 step LCD Display , 90V - 550V 50Hz, 1/5A with Rs485	VPL06N
12	VPL, 12 step LCD Display , 90V - 550V 50Hz, 1/5A with Rs485	VPL12N

Varlogic APFC Relays - Classic Range

No of Step	Description	Reference Number
6	RT , 6 step 320V - 460V 50Hz 5A	51207
8	RT , 8 step 320V - 460V 50Hz 5A	51209
12	RT ,12 step 320V - 460V 50Hz 5A	51213

Varplus Can Heavy Duty (H Duty), 440V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension		Height h+t (mm)	Net Weight	Case Code
Q_N (kVAr)	I_N (Amps)			D (mm)	H (mm)			
1	1.3	5.5	MEHVCHDY010A44	63	90	140	0.5	EC
2	2.6	11.0	MEHVCHDY020A44	50	195	245	0.6	DC
3	3.9	16.4	MEHVCHDY030A44	50	195	245	0.6	DC
4	5.2	21.9	MEHVCHDY040A44	50	195	245	0.7	DC
5	6.6	27.4	MEHVCHDY050A44	63	195	245	0.8	HC
7.5	9.8	41.1	MEHVCHDY075A44	63	195	245	0.9	HC
10	13.1	54.8	MEHVCHDY100A44	75	203	233	1.5	MC
12.5	16.4	68.5	MEHVCHDY125A44	90	212	242	1.6	RC
15	19.7	82.2	MEHVCHDY150A44	90	212	242	1.6	RC
20	26.2	109.7	MEHVCHDY200A44	116	212	242	2.5	TC
25	32.8	137.1	MEHVCHDY250A44	116	212	242	2.5	TC
30	39.4	164.5	MEHVCHDY300A44	136	212	242	3.2	VC
40	52.5	219.3	MEHVCHDY400A44	116	278	321	4.1	XC
50	65.6	274.2	MEHVCHDY500A44	136	278	321	5.3	YC

Varplus Can Heavy Duty (H Duty), 480V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension		Height h+t (mm)	Net Weight	Case Code
Q_N (kVAr)	I_N (Amps)			D (mm)	H (mm)			
5.6	6.7	25.8	MEHVCHDY056A48	63	195	245	0.9	HC
6.7	8.1	30.9	MEHVCHDY067A48	63	195	245	0.9	HC
11.3	13.6	52.1	MEHVCHDY113A48	75	203	233	1.2	MC
12.5	15.0	57.6	MEHVCHDY125A48	90	212	242	1.6	RC
14.4	17.3	66.3	MEHVCHDY144A48	90	212	242	1.6	RC
15.5	18.6	71.4	MEHVCHDY155A48	90	212	242	1.6	RC
17	20.4	78.3	MEHVCHDY170A48	90	212	242	1.6	RC
19	22.9	87.5	MEHVCHDY190A48	116	212	242	2.5	TC
22.4	26.9	103.2	MEHVCHDY224A48	116	212	242	2.5	TC
25	30.1	115.2	MEHVCHDY250A48	116	212	242	2.5	TC
28.1	33.8	129.5	MEHVCHDY281A48	136	212	242	3.2	VC
31.5	37.9	145.1	MEHVCHDY315A48	136	212	242	3.2	VC

Varplus Can Heavy Duty (H Duty), 525V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension		Height h+t (mm)	Net Weight	Case Code
Q_N (kVAr)	I_N (Amps)			D (mm)	H (mm)			
6.9	7.6	26.6	MEHVCHDY069A52	63	195	245	0.9	HC
12.5	13.7	48.1	MEHVCHDY125A52	90	212	242	1.6	RC
13.8	15.2	53.2	MEHVCHDY138A52	90	212	242	1.6	RC
15.4	16.9	59.3	MEHVCHDY154A52	90	212	242	1.6	RC
17.2	18.9	66.2	MEHVCHDY172A52	90	212	242	1.6	RC
18.5	20.3	71.3	MEHVCHDY185A52	116	212	242	2.5	TC
20.6	22.7	79.3	MEHVCHDY206A52	116	212	242	2.5	TC
22.6	24.9	87.0	MEHVCHDY226A52	116	212	242	2.5	TC
25	27.5	96.3	MEHVCHDY250A52	116	212	242	2.5	TC
27.5	30.2	105.9	MEHVCHDY275A52	116	212	242	2.5	TC
30.6	33.7	117.9	MEHVCHDY306A52	136	212	242	3.2	VC
33.1	36.4	127.5	MEHVCHDY331A52	136	212	242	3.2	VC
34.4	37.8	132.5	MEHVCHDY344A52	136	212	242	3.2	VC
37.7	41.5	145.2	MEHVCHDY377A52	136	212	242	3.2	VC

Varplus Can Gas Impregnated Heavy Duty (GH Duty) Dry 440V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension		Height h+t (mm)	Net Weight	Case Code
Q_N (kVAr)	I_N (Amps)			D (mm)	H (mm)			
5	6.6	27.4	MEHVCGSF050A44	63	195	245	0.8	HC
7.5	9.8	41.1	MEHVCGSF075A44	63	195	245	0.9	HC
10	13.1	54.8	MEHVCGSF100A44	75	203	233	0.9	MC
12.5	16.4	68.5	MEHVCGSF125A44	90	212	242	1.6	RC
15	19.7	82.2	MEHVCGSF150A44	90	212	242	1.6	RC
20	26.2	109.7	MEHVCGSF200A44	116	212	242	2.5	TC
25	32.8	137.1	MEHVCGSF250A44	116	212	242	2.5	TC
30	39.4	164.5	MEHVCGSF300A44	136	212	242	3.2	VC
40	52.5	219.3	MEHVCGSF400A44	116	278	321	4.1	XC
50	65.6	274.2	MEHVCGSF500A44	136	278	321	5.3	YC

Varplus Can Gas Impregnated Heavy Duty (GH Duty), 480V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension		Height h+t (mm)	Net Weight	Case Code
Q_N (kVAr)	I_N (Amps)			D (mm)	H (mm)			
5.6	6.7	25.8	MEHVCGSF056A48	63	195	245	0.9	HC
6.7	8.1	30.9	MEHVCGSF067A48	63	195	245	0.9	HC
11.3	13.6	52.1	MEHVCGSF113A48	75	203	233	1.2	MC
12.5	15.0	57.6	MEHVCGSF125A48	90	212	242	1.6	RC
14.4	17.3	66.3	MEHVCGSF144A48	90	212	242	1.6	RC
15.5	18.6	71.4	MEHVCGSF155A48	90	212	242	1.6	RC
17	20.4	78.3	MEHVCGSF170A48	90	212	242	1.6	RC
19	22.9	87.5	MEHVCGSF190A48	116	212	242	2.5	TC
22.4	26.9	103.2	MEHVCGSF224A48	116	212	242	2.5	TC
25	30.1	115.2	MEHVCGSF250A48	116	212	242	2.5	TC
28.1	33.8	129.5	MEHVCGSF281A48	136	212	242	3.2	VC
31.5	37.9	145.1	MEHVCGSF315A48	136	212	242	3.2	VC

Varplus Can Gas Impregnated Heavy Duty (GH Duty), 525V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension		Height h+t (mm)	Net Weight	Case Code
Q_N (kVAr)	I_N (Amps)			D (mm)	H (mm)			
6.9	7.6	26.6	MEHVCGSF069A52	63	195	245	0.9	HC
12.5	13.7	48.1	MEHVCHDY125A52	90	212	242	1.6	RC
13.8	15.2	53.2	MEHVCGSF138A52	90	212	242	1.6	RC
15.4	16.9	59.3	MEHVCGSF154A52	90	212	242	1.6	RC
17.2	18.9	66.2	MEHVCGSF172A52	90	212	242	1.6	RC
18.5	20.3	71.3	MEHVCGSF185A52	116	212	242	2.5	TC
20.6	22.7	79.3	MEHVCGSF206A52	116	212	242	2.5	TC
22.6	24.9	87.0	MEHVCGSF226A52	116	212	242	2.5	TC
25	27.5	96.3	MEHVCGSF250A52	116	212	242	2.5	TC
27.5	30.2	105.9	MEHVCGSF275A52	116	212	242	2.5	TC
30.6	33.7	117.9	MEHVCGSF306A52	136	212	242	3.2	VC
33.1	36.4	127.5	MEHVCGSF331A52	136	212	242	3.2	VC
34.4	37.8	132.5	MEHVCGSF344A52	136	212	242	3.2	VC
37.7	41.5	145.2	MEHVCGSF377A52	136	212	242	3.2	VC

Note: For Case code Drawings. Please refer page no. 14 & 15

Varplus Box Ordering Reference Numbers and Dimension Details

Varplus Box Standard Duty (S Duty) 440V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension					Net Weight (kg)	Case Code
Q_N (kVAr)	I_N (Amps)			W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)		
7.5	9.8	41.1	MEHVBSDY075A44	263	243	213	260	97	3.6	EB
10	13.1	54.8	MEHVBSDY100A44	263	243	213	260	97	3.6	EB
12.5	16.4	68.5	MEHVBSDY125A44	263	243	213	260	97	3.6	EB
15	19.7	82.2	MEHVBSDY150A44	263	243	213	355	97	4.8	DB
20	26.2	109.7	MEHVBSDY200A44	263	243	213	355	97	4.8	DB
25	32.8	137.1	MEHVBSDY250A44	309	289	259	455	153	8	HB
30	39.4	164.5	MEHVBSDY300A44	309	289	259	455	153	8	HB
50	65.6	274.2	MEHVBSDY500A44	309	289	259	455	153	8	HB

Varplus Box Heavy Duty (H Duty) 440V, 3 phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension					Net Weight (kg)	Case Code
Q_N (kVAr)	I_N (Amps)			W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)		
5	6.6	27.4	MEHVBHDY050A44	263	243	213	260	97	3.6	EB
7.5	9.8	41.1	MEHVBHDY075A44	263	243	213	260	97	3.6	EB
10	13.1	54.8	MEHVBHDY100A44	263	243	213	355	97	4.8	DB
12.5	16.4	68.5	MEHVBHDY125A44	263	243	213	355	97	4.8	DB
15	19.7	82.2	MEHVBHDY150A44	263	243	213	355	97	4.8	DB
20	26.2	109.7	MEHVBHDY200A44	309	289	259	355	153	7.5	GB
25	32.8	137.1	MEHVBHDY250A44	309	289	259	355	153	7.5	GB
30	39.4	164.5	MEHVBHDY300A44	309	289	259	497	224	10	IB
50	65.6	274.2	MEHVBHDY500A44	309	289	259	497	224	10	IB

Varplus Box Heavy Duty (H Duty), 480V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension					Net Weight (kg)	Case Code
Q_N (kVAr)	I_N (Amps)			W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)		
5.6	6.7	25.8	MEHVBHDY056A48	263	243	213	260	97	3.6	EB
6.7	8.1	30.9	MEHVBHDY067A48	263	243	213	260	97	3.6	EB
11.3	13.6	52.1	MEHVBHDY113A48	263	243	213	355	97	3.6	DB
14.4	17.3	66.3	MEHVBHDY144A48	263	243	213	355	97	4.8	DB
17	20.4	78.3	MEHVBHDY170A48	263	243	213	355	97	4.8	DB
22.4	26.9	103.2	MEHVBHDY224A48	309	289	259	355	153	7.5	GB
25	30.1	115.2	MEHVBHDY250A48	309	289	259	355	153	7.5	GB
28.1	33.8	129.5	MEHVBHDY281A48	309	289	259	355	153	7.5	GB
31.5	37.9	145.1	MEHVBHDY315A48	309	289	259	355	153	7.5	GB
56.1	67.5	258.5	MEHVBHDY561A48	309	289	259	497	224	10	IB

Varplus Box Heavy Duty (H Duty), 525V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension					Net Weight (kg)	Case Code
Q_N (kVAr)	I_N (Amps)			W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)		
6.9	7.6	26.6	MEHVBHDY069A52	263	243	213	260	97	3.6	EB
12.5	13.7	48.1	MEHVBHDY125A52	263	243	213	355	97	4.8	DB
13.8	15.2	53.2	MEHVBHDY138A52	263	243	213	355	97	4.8	DB
15.4	16.9	59.3	MEHVBHDY154A52	263	243	213	355	97	4.8	DB
17.2	18.9	66.2	MEHVBHDY172A52	309	289	259	355	153	7.5	GB
18.5	20.3	71.3	MEHVBHDY185A52	309	289	259	355	153	7.5	GB
20.6	22.7	79.3	MEHVBHDY206A52	309	289	259	355	153	7.5	GB
22.6	24.9	87.0	MEHVBHDY226A52	309	289	259	355	153	7.5	GB
25	27.5	96.3	MEHVBHDY250A52	309	289	259	355	153	7.5	GB
27.5	30.2	105.9	MEHVBHDY275A52	309	289	259	355	153	7.5	GB
30.6	33.7	117.9	MEHVBHDY306A52	309	289	259	355	153	7.5	GB
33.1	36.4	127.5	MEHVBHDY331A52	309	289	259	355	153	7.5	GB
37.7	41.5	145.2	MEHVBHDY377A52	309	289	259	355	153	7.5	GB

Varplus Box Energy, Ultra Heavy Duty (MD-XL) 440V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension					Net Weight (kg)	Case Code
Q_N (kVAr)	I_N (Amps)			W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)		
5	6.6	27.4	MEHVBENY050A44	263	243	213	260	97	3.6	EB
7.5	9.8	41.1	MEHVBENY075A44	263	243	213	355	97	3.6	DB
10	13.1	54.8	MEHVBENY100A44	263	243	213	355	97	4.8	DB
12.5	16.4	68.5	MEHVBENY125A44	263	243	213	355	97	4.8	DB
15	19.7	82.2	MEHVBENY150A44	263	243	213	355	97	4.8	DB
20	26.2	109.7	MEHVBENY200A44	309	289	259	355	153	7.5	GB
25	32.8	137.1	MEHVBENY250A44	309	289	259	355	153	7.5	GB
30	39.4	164.5	MEHVBENY300A44	309	289	259	497	224	10	IB
50	65.6	274.2	MEHVBENY500A44	309	289	259	497	224	10	IB

Varplus Box Energy, Ultra Heavy Duty (MD-XL), 480V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension					Net Weight (kg)	Case Code
Q_N (kVAr)	I_N (Amps)			W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)		
5.6	6.7	25.8	MEHVBENY056A48	263	243	213	260	97	3.6	EB
6.7	8.1	30.9	MEHVBENY067A48	263	243	213	355	97	4.8	DB
11.3	13.6	52.1	MEHVBENY113A48	263	243	213	355	97	4.8	DB
12.5	15.0	57.6	MEHVBENY125A48	263	243	213	355	97	4.8	DB
14.4	17.3	66.3	MEHVBENY144A48	309	289	259	355	97	5.4	FB
15.5	18.6	71.4	MEHVBENY155A48	309	289	259	355	97	5.4	FB
17	20.4	78.3	MEHVBENY170A48	309	289	259	355	153	7.5	GB
19	22.9	87.5	MEHVBENY190A48	309	289	259	355	153	7.5	GB
22.4	26.9	103.2	MEHVBENY224A48	309	289	259	355	153	7.5	GB
25	30.1	115.2	MEHVBENY250A48	309	289	259	355	153	7.5	GB
28.1	33.8	129.5	MEHVBENY281A48	309	289	259	355	153	7.5	GB
31.5	37.9	145.1	MEHVBENY315A48	309	289	259	355	153	7.5	GB
56.1	67.5	258.5	MEHVBENY561A48	309	289	259	497	224	10	IB

Varplus Box Energy, Ultra Heavy Duty (MD-XL) 525V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension					Net Weight (kg)	Case Code
Q_N (kVAr)	I_N (Amps)			W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)		
6.9	7.6	26.6	MEHVBENY069A52	263	243	213	260	97	3.6	EB
12.5	13.7	48.1	MEHVBENY125A52	263	243	213	355	97	4.8	DB
13.8	15.2	53.2	MEHVBENY138A52	263	243	213	355	97	4.8	DB
15.4	16.9	59.3	MEHVBENY154A52	309	289	259	355	97	4.8	FB
17.2	18.9	66.2	MEHVBENY172A52	309	289	259	355	153	7.5	GB
18.5	20.3	71.3	MEHVBENY185A52	309	289	259	355	153	7.5	GB
20.6	22.7	79.3	MEHVBENY206A52	309	289	259	355	153	7.5	GB
22.6	24.9	87.0	MEHVBENY226A52	309	289	259	355	153	7.5	GB
25	27.5	96.3	MEHVBENY250A52	309	289	259	355	153	7.5	GB
27.5	30.2	105.9	MEHVBENY275A52	309	289	259	355	153	7.5	GB
30.6	33.7	117.9	MEHVBENY306A52	309	289	259	355	153	7.5	GB
33.1	36.4	127.5	MEHVBENY331A52	309	289	259	355	153	7.5	GB
37.7	41.5	145.2	MEHVBENY377A52	309	289	259	497	224	10	IB

Note: For case code Drawings. Please refer page no. 15

Varplus Box APP Ordering Reference Numbers and Dimension Details

Varplus Box APP 440V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension						Net.wt (kg)
Q_N (kVAr)	I_N (Amps)			L	W	H	CRS	W1 (mm)	W2 (mm)	
5	6.5	27.5	MEHVBAPP050A44	175	75	325	145			4.5
7.5	9.8	41.3	MEHVBAPP075A44	175	115	325	145			5.5
10	13.0	55.0	MEHVBAPP100A44	175	115	325	145			6.5
12.5	16.3	68.8	MEHVBAPP125A44	200	115	325	170			10
15	19.5	82.5	MEHVBAPP150A44	190	115	445	160			10
20	26.0	110.0	MEHVBAPP200A44	220	115	445	190			11
25	32.5	137.5	MEHVBAPP250A44	255	115	445	225			15
30	39.0	165.0	MEHVBAPP300A44	295	115	460	265			18
50	65.0	275.0	MEHVBAPP500A44	260		560	230	250	400	32

Varplus Box APP, 480V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension						Net.wt (kg)
Q_N (kVAr)	I_N (Amps)			L	W	H	CRS	W1 (mm)	W2 (mm)	
5.6	6.7	25.8	MEHVBAPP056A48	175	75	325	145			4.5
11.3	13.6	52.0	MEHVBAPP113A48	190	115	325	160			5.5
12.5	15.0	57.5	MEHVBAPP125A48	200	115	325	170			10
14.4	17.3	66.2	MEHVBAPP144A48	295	125	300	265			10
15.5	18.6	71.3	MEHVBAPP155A48	220	115	345	190			10.5
17	20.4	78.2	MEHVBAPP170A48	255	115	345	225			11
22.4	27.2	104.4	MEHVBAPP227A48	290	115	345	260			12
25	30.0	115.0	MEHVBAPP25A48	255	115	445	225			13
28.1	33.7	129.3	MEHVBAPP281A48	255	115	445	225			14
31.5	37.8	144.9	MEHVBAPP315A48	280	115	445	250			19
56.1	67.3	258.1	MEHVBAPP561A48	Bank of 2 nos 28.1 Capacitors				250	400	35

Varplus Box APP, 525V, 3 Phase, 50Hz

50 Hz		Capacitance (3*mfd)	Reference Number	Dimension						Net.wt (kg)
Q_N (kVAr)	I_N (Amps)			L	W	H	CRS	W1 (mm)	W2 (mm)	
6.9	7.6	26.6	MEHVBAPP069A52	175	75	325	145			4.5
9.2	10.1	35.4	MEHVBAPP092A52	175	115	325	145			6.5
12.5	13.8	48.1	MEHVBAPP125A52	190	115	325	160			10
13.8	15.2	53.1	MEHVBAPP138A52	200	115	325	170			10
15.4	16.9	59.3	MEHVBAPP154A52	220	115	345	190			10.5
17.2	18.9	66.2	MEHVBAPP172A52	220	115	345	190			11
18.5	20.4	71.2	MEHVBAPP185A52	255	115	345	225			11
20.6	22.7	79.3	MEHVBAPP206A52	255	115	345	225			11
22.6	24.9	87.0	MEHVBAPP226A52	255	115	345	225			12
25	27.5	96.3	MEHVBAPP250A52	255	115	445	225			12
27.5	30.3	105.9	MEHVBAPP275A52	255	115	445	225			14
30.6	33.7	117.8	MEHVBAPP306A52	280	115	445	250			15
33.1	36.4	127.4	MEHVBAPP331A52	280	115	445	250			16
37.7	41.5	145.1	MEHVBAPP377A52	305	115	445	275			17

Note: For APP capacitor Drawing. Please refer page no 15

Detuned Filter 440V Ordering Reference nos and Dimension Details

Detuned Factor (P) = 7%, Frequency (Fr)= 189Hz, 440V, Fn=50Hz

Q_N (kVAr)	Current Irms (A)	Inductance (3*mH)	Reference Number	Dimension					Net Weight (kg)
				W (mm)	W1 (mm)	D (mm)	D1 (mm)	H (mm)	
5	7.1	9.04	LVR07050A44	240	200	155	125	220	10.7
10	14.2	4.52	LVR07100A44	240	200	165	125	220	12.7
12.5	17.7	3.61	LVR07125A44	240	200	165	125	220	16.2
15	21.3	3.01	LVR07150A44	240	200	165	125	220	16.2
20	28.4	2.26	LVR07200A44	240	200	170	125	220	21.2
25	35.5	1.81	LVR07250A44	240	200	170	125	220	21.2
50	79.9	0.90	LVR07500A44	260	200	180	125	270	32.2
75	106.4	0.60	LVR07750A44	260	200	195	125	270	43.2
100	148.8	0.45	LVR07X00A44	350	200	195	125	320	44.2

Detuned Factor (P) = 5.67%, Frequency (Fr)= 210Hz, 440V, Fn=50Hz

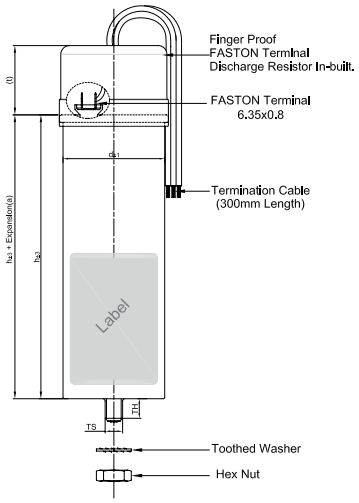
Q_N (kVAr)	Current Irms (A)	Inductance (3*mH)	Reference Number	Dimension					Net Weight (kg)
				W (mm)	W1 (mm)	D (mm)	D1 (mm)	H (mm)	
5	8	7.41	LVR05050A44	240	200	155	125	220	10.7
10	16.1	3.70	LVR05100A44	240	200	165	125	220	12.7
12.5	20.1	2.96	LVR05125A44	240	200	165	125	220	16.2
15	24.1	2.47	LVR05150A44	240	200	165	125	220	16.2
20	32.1	1.85	LVR05200A44	240	200	170	125	220	21.2
25	40.2	1.48	LVR05250A44	240	200	170	125	220	21.2
50	80.4	0.74	LVR05500A44	260	200	180	125	270	30.7
75	120.6	0.49	LVR05750A44	260	200	195	125	270	43.2
100	160.7	0.37	LVR05X00A44	350	200	195	125	320	44.2

Detuned Factor (P) = 14%, Frequency (Fr)= 134Hz, 440V, Fn=50Hz

Q_N (kVAr)	Current Irms (A)	Inductance (3*mH)	Reference Number	Dimension					Net Weight (kg)
				W (mm)	W1 (mm)	D (mm)	D1 (mm)	H (mm)	
5	8	7.41	LVR05050A44	240	200	155	125	220	10.7
10	16.1	3.70	LVR05100A44	240	200	165	125	220	12.7
12.5	20.1	2.96	LVR05125A44	240	200	165	125	220	16.2
15	24.1	2.47	LVR05150A44	240	200	165	125	220	16.2
20	32.1	1.85	LVR05200A44	240	200	170	125	220	21.2
25	40.2	1.48	LVR05250A44	240	200	170	125	220	21.2
50	80.4	0.74	LVR05500A44	260	200	180	125	270	30.7
75	120.6	0.49	LVR05750A44	260	200	195	125	270	43.2
100	160.7	0.37	LVR05X00A44	350	200	195	125	320	44.2

Note: For reactor Drawings. Please refer page no. 16

Varplus Can mechanical Characteristics



EasyCan DC, EC, FC, HC & LC.

Case Code: DC, HC, FC, EC & LC

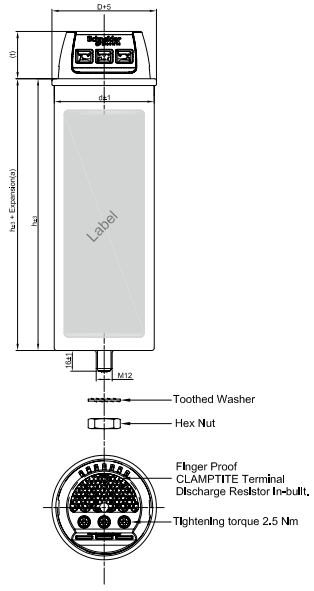
Creepage distance	min.16 mm
Clearance	min.16 mm
Expansion (a)	max.10 mm

Mounting details (for M10/M12 mounting stud)

Torque	M10: 7 N.m M12: 10 N.m
Toothed washer	M10/M12
Hex nut	M10/M12
Terminal assembly Ht. (t)	50 mm

Size (d)	TS	TH
Ø 50	M10	10 mm
Ø 63	M12	13 mm
Ø 70	M12	16 mm

Case code	Diameter d (mm)	Height h (mm)	Height h + t (mm)	Weight (kg)
DC	50	195	245	0.7
EC	63	90	140	0.5
FC	63	115	165	0.5
HC	63	195	245	0.9
LC	70	195	245	1.1



VarplusCan MC & RC

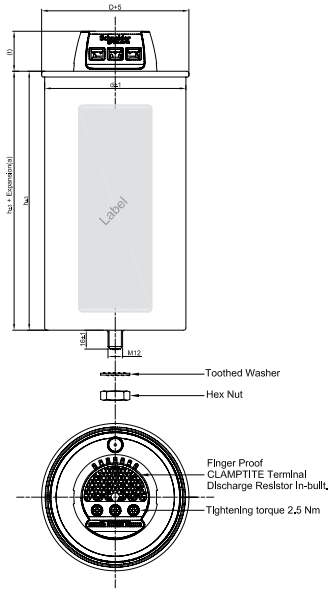
Case Code: MC & RC

Creepage distance	min.13 mm
Clearance	min.13 mm
Expansion (a)	max.12 mm

Mounting details (for M12 mounting stud)

Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM12 DIN 439
Terminal screw	M5
Terminal assembly Ht. (t)	33 mm

Case code	Diameter d (mm)	Height h (mm)	Height h + t (mm)	Weight (kg)
MC	75	203	233	1.2
RC	90	212	242	1.6



VarplusCan TC & VC.

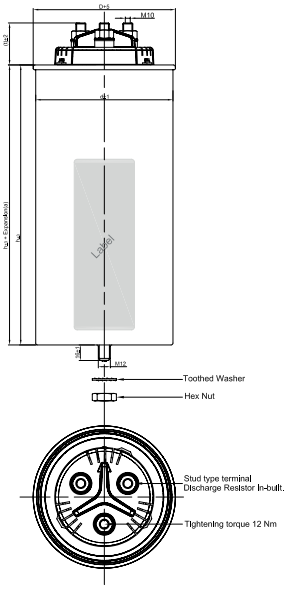
Case Code: TC & VC

Creepage distance	min.13 mm
Clearance	min.13 mm
Expansion (a)	max.12 mm

Mounting details (for M12 mounting stud)

Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM12 DIN 439
Terminal screw	M5
Terminal assembly Ht. (t)	33 mm

Case code	Diameter d (mm)	Height h (mm)	Height h + t (mm)	Weight (kg)
TC	116	212	242	2.5
VC	136	212	242	3.2



VarplusCan XC & YC.

Case Code: XC & YC

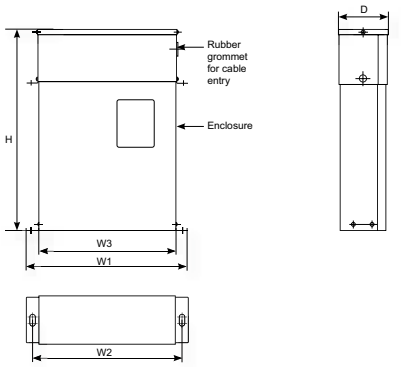
Creepage distance	min.13 mm
Clearance	4 mm
Expansion (a)	max.17 mm

Mounting details (for M12 mounting stud)

Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM12 DIN 439
Terminal screw	M10
Terminal assembly Ht. (t)	43 mm

Case code	Diameter d (mm)	Height h (mm)	Height h + t (mm)	Weight (kg)
XC	116	278	321	4.1
YC	136	278	321	5.3

Varplus Box mechanical characteristics

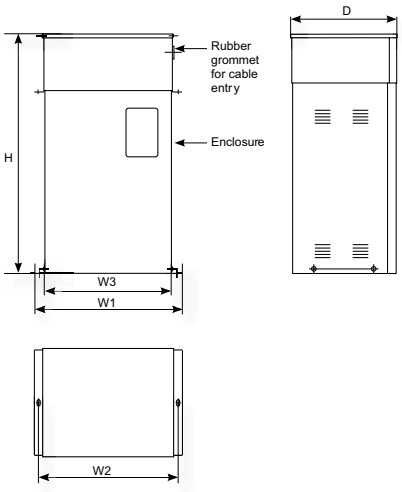


Case code: DB, EB, FB, GB & HB

Creepage distance		30 mm
Clearance		
	Phase to phase	25 mm (min.)
	Phase to earth	19 mm (min.)

Mounting details: mounting screw M6, 2 Nos.

Case code	W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)	Weight (kg)
DB	263	243	213	355	97	4.8
EB	263	243	213	260	97	3.6
FB	309	289	259	355	97	5.4
GB	309	289	259	355	153	7.5
HB	309	289	259	455	153	8.0



Case Code: IB

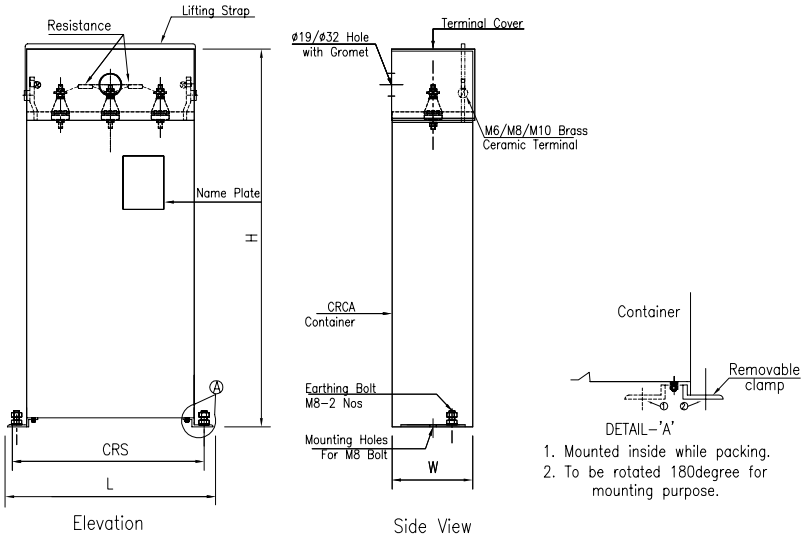
Creepage distance		30 mm
Clearance		
	Phase to phase	25 mm (min.)
	Phase to earth	19 mm (min.)

Mounting details: mounting screw M6, 2 Nos.

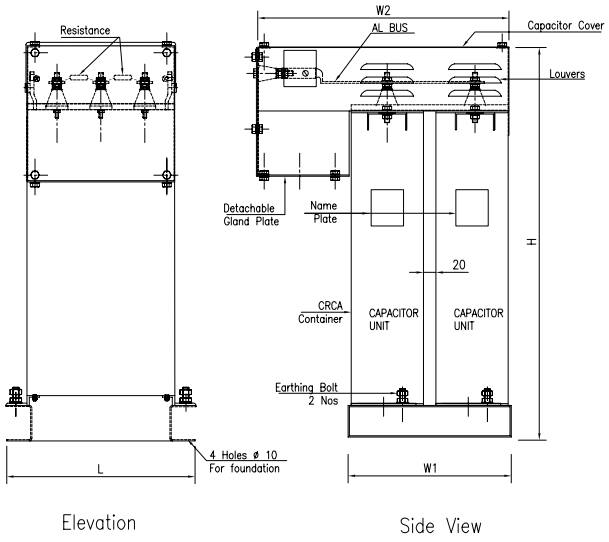
Case code	W1 (mm)	W2 (mm)	W3 (mm)	H (mm)	D (mm)	Weight (kg)
IB	309	289	259	497	224	10.0

Varplus BOX APP mechanical characteristics

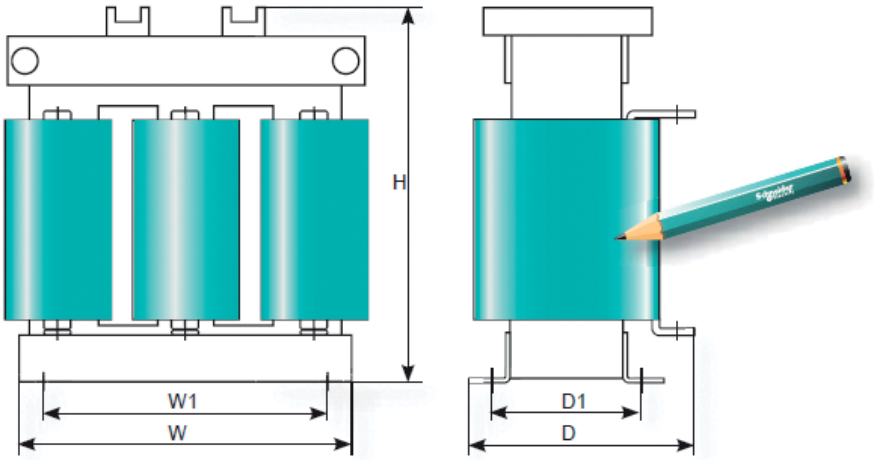
Single Unit : 5 kVAr to 37.7 kVAr
Voltage : 440/480/525V



Banking arrangement for 50 kVAr unit Voltage : 440V



Reactor mechanical characteristics



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