

MINI CIRCUIT BREAKER



IS: 8828

**RoHS**
Compliant

Немецкие автоматические выключатели VMtec "Mini" 0,5-125 A — современное поколение аппаратов, предназначенных для защиты электрических цепей от перегрузок и токов короткого замыкания (сверхтоков), а также для осуществления оперативного управления участками электрических цепей. Выключатели выпускаются с защитными характеристиками B, C, D.

Общие сведения



Пластины из серебряного композита на подвижных и неподвижных контактах

Насечки на контактных зажимах, исключающие перегрев и оплавление проводов в местах присоединения

Широкий диапазон рабочих температур от -5°C до $+55^{\circ}\text{C}$

Работают в любом положении относительно вертикали

Варианты исполнения на семнадцать номинальных токов и три защитные характеристики (B, C и D)

Срок службы не менее 15 лет

Предусмотрено одно-, двух-, трех- и четырехполюсное исполнение

Монтаж автоматических выключателей производят на 35 мм монтажную DIN-рейку

Выключатель при хранении, транспортировании, эксплуатации и утилизации не представляет опасности для жизни, здоровья людей и окружающей среды.

Технические характеристики

Тип	"B"	"C"	"D"	С разъед.
Соответствие стандартам	IEC60898:95 IS8828:96			IEC 60947-3 IS13947-3
Номинальный ток (I_n)	6-63A	0,5-125A	0,5-63A	25-125A
Номинальное напряжение переменного тока (U_e)	240/415V			240/415V
Категория применения				AC22A
Номинальная частота Гц	50 Гц			50 Гц
Количество полюсов (исполнение)	1P, 1P+N, 2P, 3P, 3P+N и 4P			1P, 2P, 3P и 4P
Отключающая способность	10KA	10KA	10KA	
Номинальное напряжение изоляции (U_i)	660V			660V
Электромагнитный расцепитель	(3-5) I_n	(5-10) I_n	(10-20) I_n	
Импульсное напряжение (U_{imp})	6 кВ			6 кВ
Электрическая/Механическая стойкость <32A	30000 срабатываний			30000 срабатываний
Электрическая/Механическая стойкость >32A	10000 срабатываний			10000 срабатываний
Температура окружающей среды	-5°C до $+55^{\circ}\text{C}$			-5°C до $+55^{\circ}\text{C}$
Класс	ELC 3			
Монтаж	на DIN-рейку (35x7.5мм)			на DIN-рейку (35x7.5мм)
Фазный вывод	35 mm ²			35 mm ²
Класс защиты	IP20			IP20

VMB-DC

Circuit Breakers for DC application are engineered to fulfill tough arc quenching conditions. DC VMB incorporates built in magnet to direct the arc into the arc quenching chamber.

Standard Conformity	IEC 60947-2 & IS 13947-2
Current Rating	0.5-63A
No. of Poles	1P & 2P
Voltage Rating	220V (max.)
Short Circuit Breaking Capacity	4kA

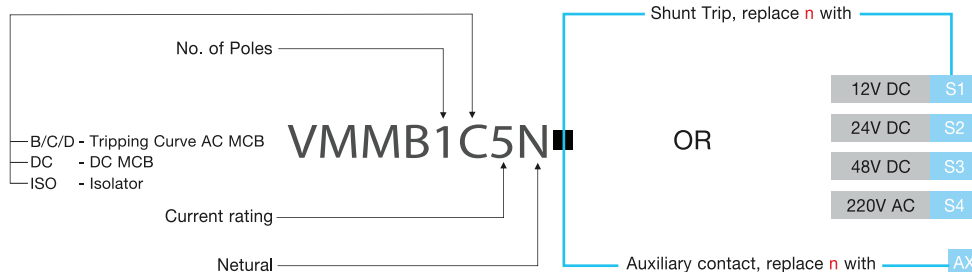
VMB

Description	Type 'B'	Type 'C'	Type 'D'
Single Pole	- 6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63 80/100/125	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63
Single Pole+Neutral	- 6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63
Double Pole	- 6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63 80/100/125	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63
Three Pole Three Pole+Neutral	- 6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63 80/100/125	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63
Four Pole	- 6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63 80/100/125	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63

Isolator

Description	Reference
Single Pole	25/40/63
Double, Three & Four Pole	25/40/63/80/100/125

Ordering Cat No.



Accessories

Auxiliary Contact: Attachment fitted with VMB (left side) used for interlocking, signaling and indication. The auxiliary switch is switched on or off along with the VMB through internal linkage.

Specifications

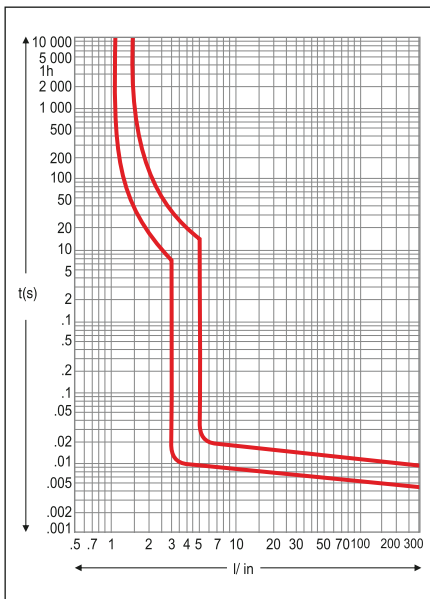
Standard Conformity	IS 13947-5
Current Rating	6A
Voltage Rating	240V AC
Contact Configuration	1NO + 1NC
Protection	IP 20
Electrical Endurance (nos)	10000
Fitment	Factory Fitted

Shunt Trip: Controls the remote tripping of the VMB to which it is attached (Right Side).

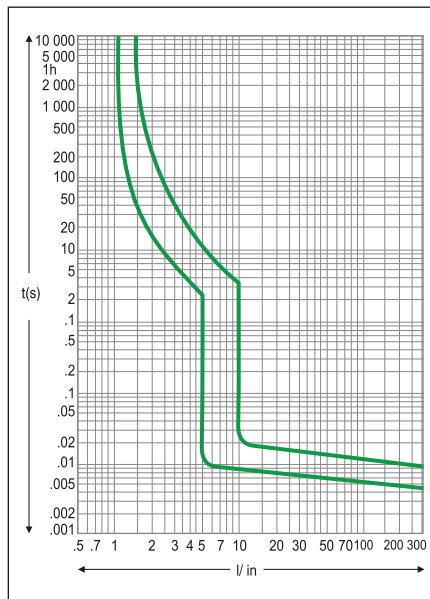
Specifications

Standard Conformity	IS 13947-2
Rated Voltage AC	220V
DC	12V, 24V, 48V
Operating Voltage	70-110% of Rated Voltage
Protection	IP 20
Electrical Endurance (nos)	10000

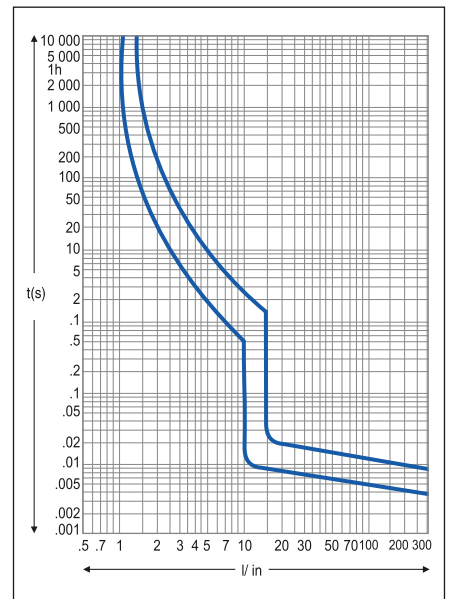
Type 'B'



Type 'C'



Type 'D'



VMB Selection based on Application - Tripping Characteristics

Type	Application	Thermal Test Current		Tripping Time $I_{n} \geq 63A$	Electro Magnetic Test Current		Tripping Time (t)
		Low	High				
'B'	Lighting & Distribution with no surge Current	1.13xIn		>1hour	3xIn		$\geq 0.1s$
			1.45xIn	<1hour		5xIn	<0.1s
'C'	Inductive Load with surge Current	1.13xIn		>1hour	5xIn		$\geq 0.1s$
			1.45xIn	<1hour		10xIn	<0.1s
'D'	High Inductive Load & High Inrush Current	1.13xIn		>1hour	10xIn		$\geq 0.1s$
			1.45xIn	<1hour		20xIn	<0.1s

Temperature deration

VMBs are calibrated at an ambient temperature of 30°C. In an industrial environment where ambient temperature is higher than the regulatory reference temperature of 30°C, the circuit breakers may be subjected to untimely tripping (nuisance tripping).

At a temperature above 30°C the thermal release trips faster, behaving like a relay with a lower nominal current. It is therefore imperative to take into account nominal current derating if the circuit breaker is installed at a higher ambient.

The table gives the max. operating current referring to the different temperatures.

Temperature

In(A)	25°C	30°C	35°C	40°C	45°C	50°C
2	2.04	2	1.96	1.9	1.86	1.82
6	6.24	6	5.82	5.52	5.28	4.98
10	10.40	10	9.7	9.2	8.8	8.3
16	16.5	16	15.5	15	14.4	14.1
20	20.6	20	19.4	18.8	18	17.6
25	25.8	25	24.3	23.5	22.5	22
32	33	32	31.04	30.1	28.8	28.2
40	41.2	40	38.8	37.6	36	35.2
63	64.89	63	61.79	60	58	56.07

Constructional

Housing

VMtec MINI VMBs are made up of engineered thermo plastic for self lubrication and critical performance. The housing and other moulded components are fire retardant having high melting point, low water absorption and high dielectric strength therefore enabling it to withstand high temperature.

Operating Mechanism

VMtec MINI Circuit Breakers are based on Thermal Magnetic technology. The protection is ensured by combining a temperature receptive mechanism (bimetal) and a current sensitive electromagnetic device. The thermal operation provides protection from normal overload and the electromagnetic device against large overloads and short circuits.

Superior Contact Mechanism

The mechanism comprises of fixed and moving contacts made up of silver graphite for surety, extended life span and anti-weld properties. These contacts have low contact resistance resulting in reduced voltage drop and low watt loss commensurating to energy savings.

High Tech Arc Blower

Protects from hazards of overloads and short-circuits. The arc under the influence of magnetic field is moved into the arc chute where it is quickly extinguished and quenched.

Maximum Backup Protection

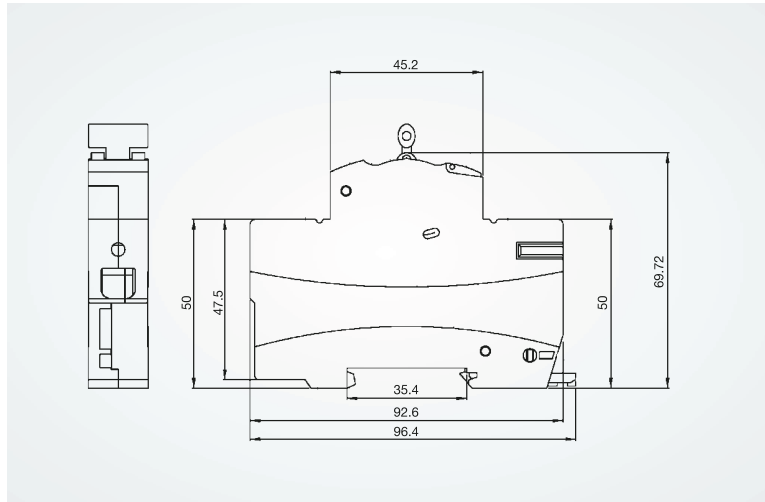
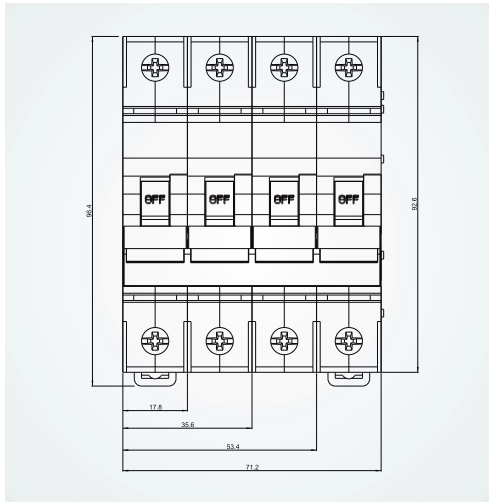
To protect the VMtec MINI circuit breakers against higher short circuit current, fuses should be installed at the incoming side. The current rating of these fuse links should not be more than the values stated in the table.

VMB Rating	Back-up Fuse Rating
1A	25A
4A	50A
6A	80A
10A	100A
63A	100A

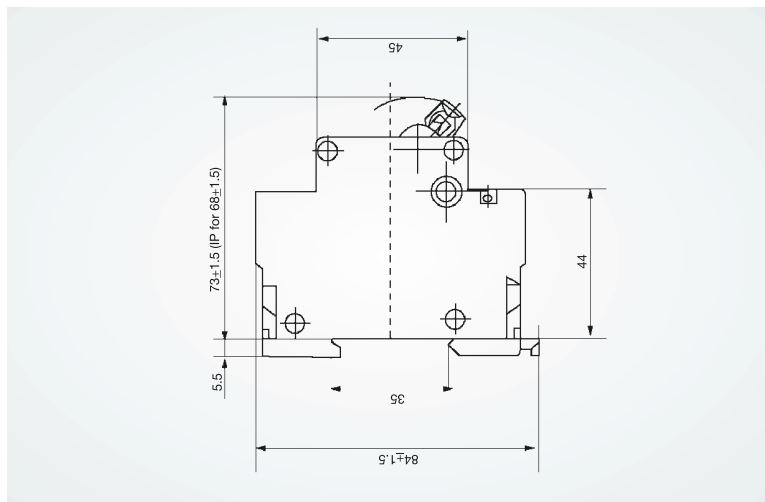
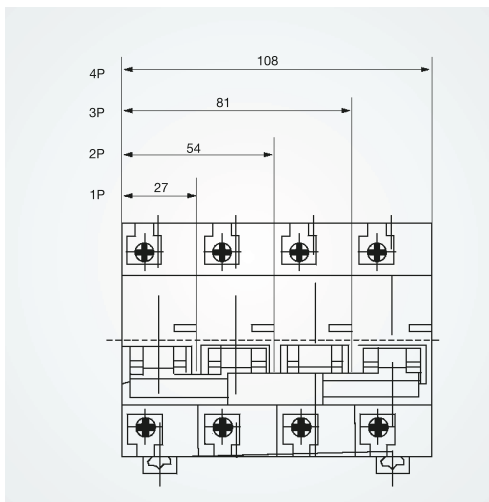
Integrated label channel holders

Easy identification of circuits irrespective of position on the Distribution Board. Enhanced safety during maintenance

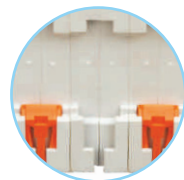
Installation Dimensions VMB (0.5 to 63A) / Isolator (25 to 125A)



Installation Dimensions VMB (80 to 125A)



Safe | Convenient | Energy Saving | Wide range

IP 20 Degree Protection	Terminals are finger touch proof. Prevents electrical shock by accidental touch.	
Trip Free Mechanism	VMB trips even if held in ON position.	
Padlocking Facility	Dolly can be padlocked in - OFF position for personal safety during maintenance - ON positing for extremely critical loads	
Current Limiting Design - Class 3	Minimum let through energy under fault condition due to ultra fast contact separation and rapid quenching of the arc. This reduces stress on connected loads and cables.	
High Terminal Capacity with Deep Serrations	Ensures proper termination and firm connection to accommodate 35 sq mm cable.	
Bi-connect Termination Possible	Choice to use Busbar and/or cable in the same terminal, provides reliable termination	
Din Rail Mounting	Two stage snapping device for simple effortless and firm seating on 35 mm Din Rail, easy & efficient mounting.	
Combination Head Captive Screws	Safe and provides the flexibility of both +/- Head screw driver.	
Low Power Consumption	Cost effective and energy saving. The Watt loss of VMtec VMBs is extremely low providing valuable energy savings over its entire life cycle.	
Wide range	0.5 to 125A 1P, 1P+N, 2P, 3P, 3P+N & 4P configurations B, C & D Tripping Characteristic	
Legend Plate	Ensures circuit identification and enhanced safety	
Air circulation	When two poles are placed adjacent to each other, these channels form a tunnel resulting in effective air circulation around individual poles.	
2 Position dolly	Clear indication of the operational status of device.	