

ZNERGY MAGNUS SYSTEMA

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Aryam Australia Group ® ARYAM



16 SERIES CIRCUIT BREAKER > > >





Company Profile



Znergy Magnus Systema is a global electrical component, electrical cable, solar & renewable energy component manufacturer. It is proudly a part of the Aryam Australia Group.

Invested with cutting edge technology, we manufacture Low Voltage to High Voltage and any specialist cables in Mining, Fire, LSZH, Shipping, Instrumentation, Oil & Petro-chemical, Gas, Sola r, Undersea submersible and industrial cables.

Our Znergy®design for electrical components is driven by our belief in technology for people. It is engineered with innovation to provide quality and benefit for an industry driven economy. We design and manufacture distribution boards, protection and switching devices, signaling & power interface, energy and lighting control components, circuit breakers and high voltage transformer.

In the renewable sector, Aryam Energy (Group Partner) is a professional solar power products manufacturer and a leader in the field of solar power system and solar lighting solutions, which has undertaken over 50,000 successful projects in more than 56 countries all over the world. Since 2006, Aryam Energy has been producing innovative and cost-effective solar power products, which created unsurpassed levels of high-efficiency and reliability on 11 technology patents. Aryam Energy's main products include solar power system and solar street light and related PV products such as PV modules, PV rack

system, PV controller and PV inverter. ISO,CE, ROHS, TUV and SGS certify all products.

In partnership with a larger global affiliation, the group provides state of art manufacturing and design. Our ISO Standard approved plants proudly employ more than 1500 permanent staff, and has an annual group turnover of \$USD 2.2 Billion in electrical & solar sales.

Our client base now extends in supplying to some of the largest multinationals, as well as projects across Australia/New Zealand, EU, North America, Africa and the greater Asia Pacific.

The group strategic partnership of Global 500 enterprise is worth USD \$35 Billion in turnover. We also specialize in Petro-chemical and General- purpose Equipment, Metallurgy, Solar & Wind Power.

With global EPC capabilities, the group can facilitate any small to large or turnkey project globally. We work closely with clients to facilitate business and meet necessary KPIs.

Znergy's vision is to be a dynamic organization that delivers innovative manufacturing solutions for a sustainable future. Our goal is to conduct business in a safe, ethical and environmentally responsible manner.

As part of the Aryam Australia Group, our strength is to provide solutions to rapidly changing global economy. We are focus driven in innovative & technologically superior designs.







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NEW LINE



Construction and Feature

- The state-of-art design
 - ☐ Elegant appearance; cover and handle in arc shape make comfortable operation.
 - ☐ Contact position indicating window
 - □ Transparent cover designed to carry label.
- Handle central-staying function for circuit fault indicating
 - □ In case of overload to protected circuit, handle trips and stays at central position, which enables a quick solution to the faulty line. The handle cannot stay in such position when operated manually.
- High short-circuit capacity
 - ☐ High short-circuit capacity 10KA for whole range and 15KA capacity for current rating up to 40A thanks to the powerful electric are extinguishing system.
 - ☐ Long electrical endurance up to 6000 cycles thanks to quick making mechanism.
- Handle padlock device
 - ☐ MCB hand can be locked either at "ON" position or at "OFF" position to prevent unwanted operation of the product.
- Screw terminal lock device
 - ☐ The lock device prevents unwanted or casual dismounting of connected terminals.









Colours of Toggles

Colours of toggles indicate amperage rating of MCBs and RCBOs;



General

MCB is applicable to electric circuits with rated voltage 230/400V AC, frequency 50/60Hz and rated current up to 125Amp. The product provides protection against overload and short circuit to electric circuits and equipments in household and commercial installations. MCB is also used as non-frequent changeover of electric circuits.

Special tips:

- 1. MCB is for non-professional operation by those untrained, and no maintenance is required.
- 2. Satisfying conditions and applications as mentioned above,MCB with "ON-OFF" indicating device is considered suitable for isolation function.
- 3. Particular devices such as surge protective devices, surge arrester etc are recommended to install at upstream line to MCB as precaution against potential surge voltage and current occurring at its power input side.
- Appropriate tripping curve being chosen and properly installed, MCB trips and switches off its protected circuit in case of fault, and thus provides protection against electric shock.
- 5. B,C,D tripping curve (see graphics 1):

B curve:

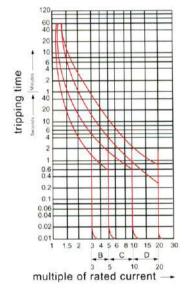
- Instantaneous tripping current:5In
- Instantaneous non-tripping current:3In
- Application: provides protection to circuits with low inductive load

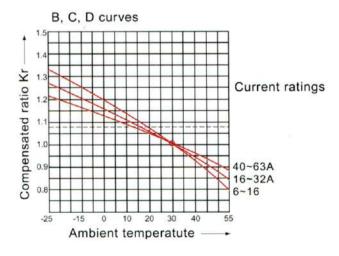
C curve:

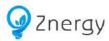
- Instantaneous tripping current:10In
- Instantaneous non-tripping current:5In
- Application: provides protection to circuits with inductive load or to highly inductive illumination system

D curve:

- Instantaneous tripping current:20In
- Instantaneous non-tripping current:10In
- Application: provides protection to circuits with high inductive load or electric distribution system with high surge current
- 6. Ambient temperature and current rating curve











Construction and Feature

- The state-of-art design
- Elegant appearance; cover and handle in arc shape make comfortable operation.
- ☐ Contact position indicating window
- ☐ Transparent cover designed to carry label.
- Handle central-staying function for circuit fault indicating
- In case of overload to protected circuit, MCB handle trips and stays at central position, which enables a quick solution to the faulty line. The handle cannot stay in such position when operated manually.
- High short-circuit capacity
- ☐ High short-circuit capacity 10KA for whole range and 15KA

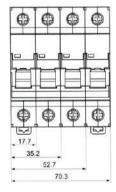
- capacity for current rating up to 40A thanks to the powerful electric arc extinguishing system.
- Long electrical endurance up to 6000 cycles thanks to quick making mechanism.
- Handle padlock device
- MCB handle can be locked either at "ON" position or at "OFF" position to prevent unwanted operation of the product.
- Screw terminal lock device
- ☐ The lock device prevents unwanted or casual dismounting of connected terminals.

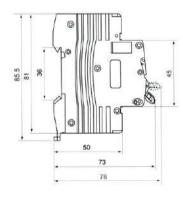
Technical Data

- Pole No.:1、1P+N、2、3、3P+N、4
- Rated voltage :AC 230/400V
- Rated current(A):
 - 1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63
- Tripping curve :B、C、D
- Rated short-circuit capacity(Icn):10kA
- Rated service short-circuit breaking capacity (Ics): 7.5kA
- Rated frequency:50/60Hz
- Energy limiting class:3
- Rated impulse withstand voltage:6.2kV
- Electro-mechanical endurance:8000
- Contact position indication
- Connection terminal :
- ☐ Screw terminal
- □ Pillar terminal with clamp
- Connection capacity :Rigid conductor up to 25mm²
- Terminal connection Height :19mm
- Fastening torque:2.0Nm
- Installation:
- ☐ On symmetrical DIN rail 35mm
- ☐ Panel mounting

Accessories

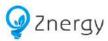
- F3 Auxiliary contact
- S3 Shunt tripper





Technical Date

•	Number of poles:1,2,3,4,1+N,3+N
	Nominal currents In (A):
	1,2,3,4, 6,8,10,13,16, 20, 25, 32, 40, 50, 63
	Characteristics,
Ш	B The short-circuit release is to be set up to 3 In through 5In . It serves especially for protection of circuits with such devices which
	do not cause any current surges (lights or socket circuits etc.) C The short-circuit release is to be set up to 5 In through 10 In .lt serves especially for protection of circuits with such devices which
	cause some current surges (groups of bulbs,motors etc.)
	D The short-circuit release is to be set up to 10 in through 20 In. It serves especially for protection of circuits with devices which
05	cause high current surges (transformers, double-pole motors, motors with heavy start etc)
	Nominal voltage,
	1P (single-pole) -230/400V 50/60Hz
	3P (three–pole) –400V 50/60Hz
	Rupturing capacity.
	E N60898- 10000A (nominal short-circuit and operational rupturing capacity) Protection:
-	IP40 for a sole MCB with its design, it protects against a hazardous finger or instrument touch as well as against very small foreign
	objects; it is without any protection against water leakage (water protection is to be solved with design of the switchboard casing)
	Ambient temperature
	-5°C to+40°C pursuant to EN60898
	Gauging temperature:
	+30 °C pursuant to EN60898
	Max. pre-inserted fuse:
	100AgG (>10kA)
	Mechanical lifetime,
	≥ 20000 cycles
	Electrical lifetime.
	≥ 8.000 cycles
	Fastening, By means Of an unique snap mechanism (with arrestment in final positions) the carrying DIN strip EN 50022, width 35mm,or even
Н	onto the flat surface by means of screws.
_	Removal from the DIN strip;
	By means of an unique auxiliary snap mechanism, the MCB's can be removed even from a row of devices mutually interconnected
_	by a forked or reed rack strip without necessity to dismantle the whole interconnecting strip
	Input terminals;
	Clip terminals (with barrier layer), snap-locked against the worse input of a conductor
	The input and output can be interchanged
	They enable more conductors as well as interconnecting strips to be connected
	Connect ability of conductors (Maximum cross sections);
	35mm² solid conductor
	25mm² stranded conductor
	Terminal protection :IP20 Tightening moment for terminals
	Tightening moment for terminals 2 Nm (combined slotted-head screw)
	Manufacture standard
	EN60898 same to IEC 60898
	Selectivity class: 3
	Colored levers:
	For better distinction among circuits in the switchboards, we supply also miniature circuit breaker with distinction of nominal currents
	by means of colored levers corresponding to the colors of turn fuses
	0.2A-1.6A (Black)
	2A (Pink)
	4A (Brown)
	6A(Green) 8A (Light green)
	10A (Red)
	13A (Sandy)
	16A (Grey)
	20A (Blue)
	25A (Yellow)
	32A (Purple)
	40A (Black)
	50A (White)
	63A (Copper-colored)
	Can be delivered also with only black levers
Ш	1–63A (Black)

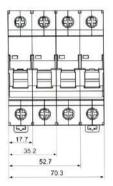


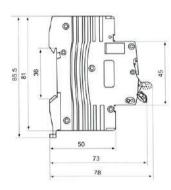


Advantages of OPEN MCB---OB16-63 for users

- Guaranteed short-circuit resistance
- □ It is guaranteed not only the short-circuit resistance of 6kA and 10kA in the whole range up to 63A but this OB16 series has the short circuit resistance of up to 15kA even up to the values.
- A high-speed switch-off
- An extraordinary high rate of switch—off upon short—circuit;an unperturbed fulfillment of all power terms and following selectivity No. 3. All those phenomena together ensure a very sensitive protection of persons,electrical devices and wiring.
- Central position of defect indication (to be developed)
- ☐ The release mechanism enables a central indication position which informs the user that the MCB has not been switched—off manually but by a thermal or short—circuit protection (the lever is moved just to the half—way of is motion). In case of manual switch—off,the MCB is always moved to its final low position. Therefore you can know very quickly if there is a defect at the circuit,or if the circuit has been switched off by an operator.
- Simultaneous switching at multi-module types A worldwide unique,recently patented system of triggering mechanism ,which ensures a safe,more accurate and almost simultaneous switching of all the contacts at multi-module (pole) MCB's; it has been reached a three-times longer switching distance than that reached by the best competitions worldwide.
- Instantaneous switching of contacts, independent on the rate of lever motion
- □ A worldwide unique,recently patented principle of the instantaneous switching where the forces are transmitted only into the middle of segments-therefore no crossing occurs (no world manufacturer has developed that solution yet!). This solution has a big influence on extension of both mechanical and electrical lifetimes in connection with number, of switching cycles. The function of instantaneous switching has been solved only by one manufacturer worldwide until now.
- ☐ This unique principle of instantaneous switching of contacts is based on the following facts: even when the MCB lever is stretched very slowly, during the first stage the contacts inside the MCB only come near to each other to a distance which cannot create the condition for electric arc. In this moment the "coming—near" is interrupted even if the lever continues to be stretched (switched—on). In this moment the second stage begins The pre—stressing only inside the instantaneous mechanism when the contacts does not come near to each other more, but the lever is moved. Upon the pre—stressing stated in advance, the third stage begins to be a heavy high—speed switching of internal contacts. This switching is however, fully independent on the rate of contact lever motion. The above principle offers the following advantages.
- (a)The contacts can never be burnt even not with a very slow MCB lever motion(stretching) sometimes the terms," shortcircuiting" or so-called" burning-out" of contact are used. It is thus impossible to destroy the MCB in that way.

- (b)By a heavy high-speed switching of contacts a perfect touch is secured even at very low values of nominal current such touch excludes any wrong power transfer.
- (c)Burning of contacts is reduces to a minimum level.
- (d)The total MCB's lifetime is extended.
- Extraordinary short dimensions
- □ As to the available information, because of their extraordinary short dimensions (especially the width of only 81mm), our OB16 MCB'S are classified as among the smallest MCB'S over the world in the category of short-circuit resistance up to 10KA. In the category of 15KA, we have the shortest dimensions worldwide (see the dimensioned chart).
- ☐ Thus there is more space for conducting and connecting the conductors in the installation section, which is covered at a switchboard. This property can be appreciated especially when using these MCB's at small apartment switchboards.





- Moveable terminals are equipped with a locking bar avoiding an incorrect placing of conductors
- A chart of a terminal with locking bar.
- ☐ This is a unique solution, which helps to avoid problems in case when the terminal cannot be seen during installation. This principle excludes the possibility to place the conductor under the terminal. In this way, frequent(latent) claim defects can be avoided. Such defects occurred mostly at the end user and the switchboard manufacturer has to bear additional expenses for simple removal of such defects.
- ☐ The design is based on the fact each terminal has so-called flat locking bar in its bottom section. When tightening the screw,this bar occurs step by step at the inlet bole and closes the space under the terminal. So it avoids the conductor to be put-in under the terminal clip where it cannot be interconnected with the inlet or outlet from the MCB.
- ☐ The clip terminals have cross grooves at the bottom section—those grooves avoid the conductor to be drawn half out from the terminal because after being tightened, the conductor sinks into the grooves; in addition, the transfer surface is extended and the contact resistances are limited essentially.
- Unique extinguishing chamber

Advantages of OPEN MCB---OB16-63 for users

Besides other essential function at the beginning of short- circuit process it enables to use the non-warmed air inside the chamber for cooling the contacts immediately before they are disconnected.	condition, which is independent on the lever position, and i depends just on the real contact condition. In addition, this indication is protected against dust penetration into the MCE by a transparent plastic cover with enlarging effect.			
■ Very easy running of the lever when being switched-on.	☐ Switched-on-red I-ON			
☐ A very easy running when switching-on the lever (stretching)	☐ Switched-off-green O-OFF			
even in case of multi-pole models is given by an excellent	■ Universal terminals for different interconnecting strips			
and balanced design of switching mechanism.	☐ The terminals are solved as interconnecting forked or rack			
 Unique auxiliary mechanism for fastening and removal of the MCB from the DIN strip 	(reed) strips.			
☐ Besides the normal fastening onto the DIN strip, this unique auxiliary mechanism for fastening and removal enables also	■ Terminal modification resistant to inter-phase short-circuit in case of interconnection of multi-module designs by means of a forked strip			
an easy removal of the MCB from a row of devices mutu- ally interconnected by forked or rack (reed) interconnecting strip without necessity to dismantle the whole interconnecting strip.	☐ At the upper part of the terminal(serving for interconner by means of forked strip), the MCB's body is equipped partitions, which can be broken off. Those partition shall a			
☐ Other advantages of this solution:	a possible inter-phase short-circuit in case of interconnec- tion of multi-module types by means of multi-module inter-			
- The mechanisms will not fall-out from the MCB's body	connecting strips.			
- Arrestment in final positions	■ Tolerance and dilatation not affecting the function.			
 No steel spring 	☐ The design allows possible plays(by dilatation shock, wearing)			
 Essential increase of vertical stability on the DIN strip 	to be accepted without any affect on the function of mov-			
The new and marked improvement of vertical stability after connection of the MCB onto the DIN strip consists in a formed plastic stop on the bottom side. After fastening the MCB onto the DIN strip, this stop takes—over the function of counter pressure in case of torsional stress of the MCB body.	able parts, such as switching mechanism, movable contact ejecting coil, indication etc. This unique solution improves the quality essentially but especially it warranties the reliability under different, even very extreme operational conditions.			
	■ Press pieces from only two-side moulds			
In contradistinction to our competitors, the pawl plays only a holding role	☐ The press pieces of all part,except for the lever,are made from two-side moulds. Because of this technology,we have			
■ MCB's body stiffness even all the multi-module design	reached much higher dimensional accuracy, and thus higher quality and resulting higher operational reliability			
■ The casing design ensures a very high stiffness not only at a	 Unexchangeability of component. 			
single-module type, but even in case of multi-module circuit breakers. The stiffness is given not only by a sophisticated	☐ It is secured the explicit unexchangeability of components			
placing and number of rivets but also by the design of the casing with stabilizing locks and pivot joints	during manufacture(avoiding the manufacture mistakes). It is another portion of our approach to quality.			
■ Very high torsional-stressing resistance of terminals	 Universal single-module design enabling any combination(1 			
☐ Suitable plastic guides and press in casing body which serve	P,2P,3P,4P,1P+N,3P+N,etc)			
for placing of movable and fixed parts of terminals together with points for rivets create a high torsional-stressing resistance of the terminals. This design excludes the possibility that the casing opens when the screws are tightened out of	□ The conception for individual compositions consists in manufacture of only single-module miniature circuit breakers from which various combinations can be created,e,g,1P(pole),2P 3P,4P,1P+N,(zero=switch-off),3P+N.			
proportion or that the terminal crosses at the casing	☐ Because of this solution, we can be adapted to different re-			
Round a esthetical design	quirements of our customers very quickly.			
The place for two-line inscription is protected by a swing sight glass with arrestment	■ Patent protection			
 □ Each pole is equipped with an aesthetic transparent swing cover placed above the switching—off lever. Under that cover there is a paper two-line inscription label put into slots. It is also possible to write on the plastic surface. The cover has an arrestment in the upper open position. 	□ The MCB's as well as the linking-up products are patent-protected. Because of multilateral treaties and unpleasant consequences we do not suppose that somebody will try to copy the products(as we know it in case of other products). Our goal is to avoid a possible devaluation of the products. In case of the above MCB, the world patents covers			
■ Colored indication of contact condition with dust protection.	the switching-off mechanism, instantaneous release etc, the world use pattern cover the fastening mechanism onto the DIN strip etc.			





Advantages of OPEN MCB---OB16-63 for users

■ Scaling of values and AC/DC design.	Between particular tests, the circuit breaker is left cool down.			
☐ It is possible to make the values from 0.5 up to 63A (with any ampere-value. It is the scaling with only by1A)	The complete test pursuant to EN 60898-a long term test of the thermal release at random chosen samples is performed at least once a shift.			
☐ They are designed mostly for alternating current but they				
can be used also for direct current for which the reduction of short-circuit resistance by approx, about 20% has to be	C at least a fivefold mechanical reliability check: This test is a part of the two aforementioned tests during which the switching-on and switching-off mechanisms are verified			
taken into account (because of a higher stress of contacts)	■ Big cross-sections of terminals			
■ See –variable connection of input of output.	☐ The cross-section 35mm² for solid conductor and the cross-			
Input or output can be connected both onto the upper and lower terminals without impairing the function of the miniature circuit breaker in any way. Through this advantage, the mounting is easier and the distribution arrangements at the switchboards can be variable. output input	section 25 mm² stranded conductor is stated for the range up to In 63A. The geometric cross-section of the terminal however is 50mm². You will appreciate the terminal cross-section of 35mm² with all nominal values, when mounting any bigger cross-sections of the conductors which must be dimensioned for higher power inputs. You do not need			
input output	to solve such problems by means of additional terminals on which the contact resistances could occur.			
■ 10 to1 20 to	Fixed design of terminals			
 ■ It is not possible to change the characteristic by fall shock □ The design of the electromagnetic high-speed release with ejecting armature for short-circuit protection has been solved so that it has not any adjustable element, its charac- 	New design of the terminals(made of one piece with double overlapping through which the screw goes –the possibility to break it when mounting is fully excluded and the possibility to strip the thread is essentially limited).			
teristic is given by the cross-section of the copper wire of the coil, by number of threads and spring pre-streesing in the core .This solution thus excludes that our circuit breakers could change their presented value by a fall or shock.	☐ The clip terminals themselves have in their bottom part also the cross grooves which avoid the conductor to be taken out from the terminal because being tightened the conductor sinks into the grooves. Simultaneously, the transmission area			
■ High operational shock - resistance	gets large thus the contact resistances are limited consider-			
$\hfill\square$ Thus they are suitable for application at constructional	ably.			
switchboards	■ The screws of the clip terminals are protected against fall out from the circuit-breaker body			
☐ The shock resistance is given by a very good bedding of the construction elements	☐ The clip terminals are sealed in me circuit breaker casing			
■ A thorough-multiple outputs checking of the parameters of every MCB	so that the screws of the terminals cannot fall out from to circuit—breaker body even if they are fully screwed out from the terminal. This advantage has been reached because to			
□ The high quality is given both by suitable materials and design, and by a thorough checkout of all the parameters at each circuit breaker.	diameter of the hole at the plastic box (casing) for a screw- driver is less than the diameter of the screw head. The screw head has been modified both for cross and flat screwdrivers.			
☐ A triple check of the electromagnetic high speed release with ejecting armature for short-circuit protection (it the detect occurs because of the failure or incorrect connection)	■ The possibility to interconnect the miniature circuit breakers by means of interconnecting forked or reed (rack) strips			
Every piece manufactured passes trough a testing stand controlled by the computer .At that stand there is verified the function of the circuit breaker on the undermost limit of the required nominal current value for given characteristics (B.	 For the OB16 series, it is possible to use both the forked and the rack (reed) interconnecting strips. The views on application of those two types are different. The forked ones: 			
C or D) by which the switch off must not occur yet,after that	A advantages			
the current test of the upper limit of the nominal current value of the given characteristic fallows immediately—under this current the velocity of circuit—breaker switching—off must not exceed 0.1s. This test procedure is repealed three—times!	Baing put under the screw head, into the upper part of a double terminal, they do not take any space in the bottom part of the terminal. Because of what is written above they enable an unperturbed connection of input conductors.			
☐ B at least a double check of the time-limit thermal release	B disadvantages			
for overload protection (if the circuit has not been damaged but a significant overload occurred which could damage the electrical installation)	When tightening the terminal screws, the forks can distend Thus the transmission area as wall as current load rating is reduced (sometimes such an imperfect connection can			
☐ The thermal release test is done two-times at least until the bi-metal is not mechanically adjusted to the required value	cause the "burning-out" of the connection resulting in a full devaluation of the			

Advantages of OPEN MCB---OB16-63 for users

MCB's or devices interconnected in that way. At some surface(not fully screwed) Onto the prepared screw you put types of MCB's which do not have a sufficient insulation the MCB, which has a corresponding cut in its upper part you draw out the arresting pawl to its final "open" position between separate terminals, the inter-phase short-circuit can occur under specific circumstances. Our OB16 MCB's in the bottom part and then you fasten the MCB by another can avoid that phenomena (see the advantage 18). screw to the flat surface through a hole in this pawl. ☐ Rack (reed) ones: ■ Colored control levers A advantages ☐ We supply both colored levers in accordance with the nominal current values(corresponding to the marking of turn The rack (reed) is also the pressure (second) area of the fuses) and black levers. terminal pressing onto the out-in conductor, thus it limits any ■ The possibility to seal the lever in the ON and OFF positions possible contact resistance to the minimum. If there are two interconnecting strips with outputs at the ☐ The lever can be sealed because of openings in both guidedge of the strips, the height seating of the terminal enables ing sidewalls of the switch-off lever. Through these openings, a sealing wire can be fed. This sealing wire passes those two interconnecting strips to be put in opposite to each other and to reach double transmission load rating also through a groove on the movable lever. This groove has been engraved in both positions(OFF and ON positions) and The current load capacity of such a strip with power supit disables the motion of the lever itself. If the lever is sealed ply away from the strip edge is 80A, with two interconnected in the ON position, the immobility does not render the function strips located in opposite up to 160A; If the power supply of the circuit breaker impossible, be in the event of a shortis in the center of the strip, the current load rating amounts circuit or overload the circuit will be shut-down (indepento 130A, with two interconnected strips located in opposite dently on the fixed position of the lever). even up to 260A! An easy link-up of different auxiliary contacts, releases etc. B disadvantages from both sides of the circuit breaker Being put into the bottom part of the terminal, they take a part ☐ The link-up of plenty accessories is enabled from both sides of its cross-section, thus they make the connection of input of the MCB namely by a very simply "click-down" without conductors more complicated. any instruments. There are openings covered by self-Attachment onto a DIN strip with different thickness sticking plastic plate on both sides of the MCB body. That ☐ The miniature circuit breakers are intended to be attached opening is linked with a movable mechanism inside. Over onto the DIN strip EN50 022 (width 35mm thickness 0.8an interconnecting element, the lever condition is ether indi-2mm). At European market, there are the DIN strips with cated or the switching-off mechanism is directly controlled higher dimension tolerances available. Our more variable through the other opening. These are the accessories of design of the pawl has been fitted to those strips (it can corone of the best manufacturers in Europe, MERLINGERIN. respond also with less exact performance of the DIN strips). Their perfect system includes inter alialow-volt coils, ejecting ■ Attachment onto the DIN strip using the pawl final arrestment coils, auxiliary contacts etc. All those elements provide protection, control, regulation and remote control, remote in-Onto the strip DIN EN 50 022(with-35mm, thickness 0.8dication of switch-on and switch-off positions of the circuit 2mm) breaker, programming and measurement, By means of what ☐ The pawl arrestment in final positions facilitates both the has been mentioned above, those elements enable our circuit MCB's erection onto the DIN strips, and their dismantling breakers to be applied in the rage of control automatiza-■ Possibility to attach the MCB directly onto the flat surface tion of different industrial processes. These elements can be mutually interconnected as well ,thus they can from different without the DIN strip combinations to get thorough operational information. ☐ You will appreciate that advantage-a possible attachment of our MCB directly onto the flat surface without using the Taking into account the recent findings and comparisons of the above main advantages we are sure that we have DIN strip-especially when repairing old switchboards. This possibility does not require any modification of the MCB. Let reached the imaginary top level of the best manufactures of MCB's world-wide with our MCB's of the OPEN OB16 us explain the principle of such an attachment: you screw a



flat-headed screw into the flat area at the required position. You leave that screw at a distance of approx. 5mm from the

OB16-63 Circuit Breaker Accessories





Application

Applicable to MCB model OB16-63, used to control remote signaling device.



Combination scheme

F3 OB16	F3	F3	OB16	S3
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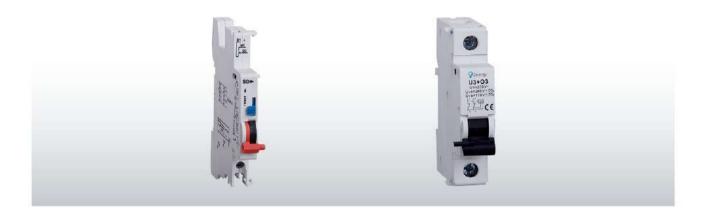
F3 Auxiliary Contact

- Contact capacity;
- ☐ AC: Un=415V In=3A Un=240V In=6A
- ☐ DC: Un=125V In=1A Un=48V In=2A Un=24V In=6A
- Dielectric strength:2kV/1min
- Electro-mechanical endurance: ≥ 5000
- Mounted on the left side of the MCB OB16-63,indicating "ON ", "OFF" status of combined MCB.
- Terminal Connection Height H1=31mm H2=16mm H3=1.3mm

S3 Shunt Tripper

- Rated insulating voltage(Ui): 500V
- Rated power voltage (Us):AC 400,230,125V
- Operate voltage range:70~100%Us
- Contact capacity:
- ☐ AC:3A/400V
- ☐ AC:6A/230V
- ☐ AC:9A/125V
- Dielectric strength:2kV/1min
- Electro-mechanical endurance: ≥ 4000
- Mounting on the right side of MCB/RCBO, used to trip the combined MCB/RCBO by remote controlling device.
- Terminal Connection Height: 19mm

OB16-63 Circuit Breaker Accessories



Application

Applicable to MCB model OB16-63, used to control remote signaling device.



Combination scheme

SD	OB16	SD	SD	OB16	U3+O3
		100			

SD Alarm Switch

- Rated insulating voltage(Ui): 500V
- Rated power voltage (Us):AC 400,230,125V
- Operate voltage range:70~100%Us
- Contact capacity:
- ☐ AC:3A/400V
- ☐ AC:6A/230V
- ☐ AC:9A/125V
- Dielectric strength:2kV/1min
- Electro-mechanical endurance: ≥ 4000
- Is used to connect ON/OFF auxiliary contact, work as circuit breaker ON/OFF indicator in case of faulty(tripping)

U3+O3 Over-voltage/Under-voltage Tripper

- Rated voltage (Ue):AC 230V
- Rated insulating voltage(Ui):500V
- Over-voltage tripping range:280V ± 5%
- Under-Voltage tripping range:170V ± 5%
- Electro-mechanical endurance: ≥ 4000
- Mounted on the right side of circuit breaker, actuate the combined device to trip in case of under-voltage or overvoltage, effectively prevent the device from closing operation under abnormal power voltage condition.







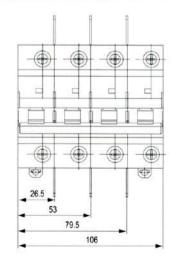
Construction and Feature

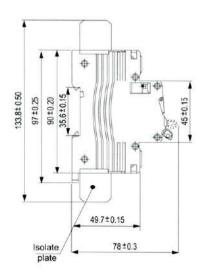
- High short-short capacity 25KA.
- Designed to protect circuit carrying big current up to 125A
- Contact position indication.
- Used as main switch in household and similar installation.

Technical Data

- Pole No:1、2、3、4、1P+N、3P+N
- Rated voltage :AC 230/400V
- Rated current(A):20、25、32、40、50、63、80、100、125
- Tripping curve: C 、D
- Ultimate short-circuit breaking capacity(lcu):25kA
- Service short-circuit breaking capacity(Ics):15kA
- Rated frequency:50/60Hz
- Rated impulse withstand voltage:6kV
- Electro-mechanical endurance: In △ ≤ 100=10000; In125=8000
- Connection terminal :Pillar terminal with clamp
- Connection capacity:
- ☐ Flexible conductor 35mm²
- ☐ Rigid conductor 50mm²

- Installation:
- On symmetrical DIN rail 35mm
- ☐ Panel mounting
- Terminal Connection Height:19mm







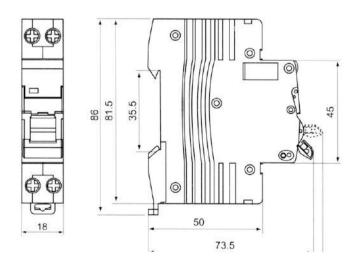
Construction and Feature

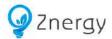
- The state-of-art design
- ☐ Elegant appearance; cover and handle in arc shape make comfortable operation.
- ☐ Contact position indicating window
- ☐ Transparent cover designed to carry label.
- Handle central-staying function for circuit fault indicating
- ☐ In case of overload to protected circuit ,MCB handle trips and stays at central position ,which enables a quick solution to the faulty line. The handle cannot stay in such position when operated manually.
- Handle padlock device
- ☐ MCB handle can be locked either at "ON" position or at "OFF" position to prevent unwanted operation of the product.

Technical Data

- Pole No:1P+N
- Rated voltage AC 230V
- Rated current(A):6,10,16,20,25,32
- Tripping curve :C
- Rated short-circuit capacity (Icn):4.5kA
- Rated service short-circuit capacity(Ics):4.5kA
- Rated frequency:50/60Hz
- Electro-mechanical endurance:4000

- Contact position indication
- Connection terminal: Pillar terminal with clamp
- Connection capacity: Rigid conductor up to 10mm²
- Fastening torque:1.2Nm
- Installation:
- ☐ On symmetrical DIN rail 35mm
- ☐ Panel mounting
- Terminal Connection Height :H1=19mm H2=22mm





OL16-63 Residual Current Circuit Breaker





Construction and Feature

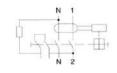
- Elegant appearance; cover and handle in arc shape make comfortable operation.
- Contact position indicating window
- Transparent cover designed to carry label.
- In case of overload to protected circuit, RCCB handle trips and stays at central position ,which enables a quick solution to the faulty line. The handle cannot stay in such position when operated manually.
- Provides protection against earth fault/leakage current and function of isolation.
- High short-circuit current withstand capacity
- Applicable to terminal and pin/fork type busbar connection
- Equipped with finger protected connection terminals
- Fire resistant plastic parts endured abnormal heating and strong impact
- Automatically disconnect the circuit when earth fault/leakage current occurs and exceeds the rated sensitivity.
- Independent of power supply and line voltage, and free from external interference, voltage fluctuation.

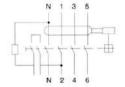
Technical Data

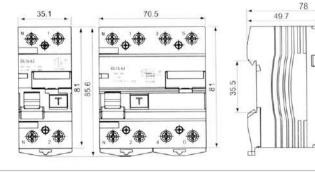
- Mode: electro-magnetic type
- Residual current characteristics: A,AC
- Pole No.:2,4
- Rated making and breaking capacity: 630A
- Rated current(A):25,40,63
- Rated voltage:240/415V AC
- Rated frequency:50/60Hz
- Rated residual operating current | △ n(A): 0.03,0.1,0.3,0.5
- \blacksquare Rated residual non operating current I \triangle no:0.5I \triangle n
- Rated conditional short-circuit current Inc:10kA
- Rated conditional residual short-circuit current | △ c:10kA
- Tripping duration: instantaneous tripping ≤ 0.1s
- Residual tripping current range: 0.5l △ n~ l △ n
- Terminal Connection Height:19mm
- Electro-mechanical endurance:4000 cycles
- Connection capacity: Rigid conductor 25mm²

- Connection terminal:
- ☐ Screw terminal
- □ Pillar terminal with clamp
- Fastening torque:2.0Nm
- Installation:
- ☐ On symmetrical DIN rail 35mm
- ☐ Panel mounting

Wiring Diagram







OL16-100 Residual Current Circuit Breaker



Construction and Feature

- Elegant appearance; cover and handle in arc shape make comfortable operation.
- Contact position indicating window
- Transparent cover designed to carry label.
- In case of overload to protected circuit, RCCB handle trips and stays at central position ,which enables a quick solution to the faulty line. The handle cannot stay in such position when operated manually.
- Provides protection against earth fault/leakage current and function of isolation.
- High short-circuit current withstand capacity
- Applicable to terminal and pin/fork type busbar connection
- Equipped with finger protected connection terminals
- Fire resistant plastic parts endured abnormal heating and strong impact
- Automatically disconnect the circuit when earth fault/leakage current occurs and exceeds the rated sensitivity.
- Independent of power supply and line voltage, and free from external interference, voltage fluctuation.

Technical Data

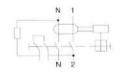
- Mode: electro-magnetic type
- Residual current characteristics: AC
- Pole No.:2,4
- Rated making and breaking capacity: 1kA
- Rated current(A):63,80,100
- Rated voltage:240/415 V AC
- Rated frequency:50/60 Hz
- Rated residual operating current I △ n(A)

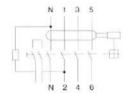
0.03,0.1,0.3,0.5

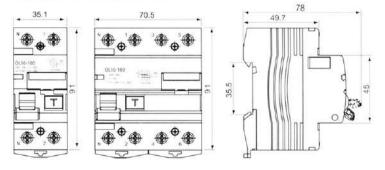
- Rated residual non operating current | △ no:0.5| △ n
- Rated conditional short-circuit current Inc:10kA
- Rated conditional residual short-circuit current | △ c:10kA
- Tripping duration: instantaneous tripping ≤ 0.1s
- Residual tripping current range: 0.5l △ n~ l △ n
- Terminal Connection Height: 19mm
- Electro-mechanical endurance:4000 cycles

- Connection capacity: Rigid conductor 25mm²
- Connection terminal:
- ☐ Screw terminal
- ☐ Pillar terminal with clamp
- Fastening torque:2.0Nm
- Installation:
- ☐ On symmetrical DIN rail 35mm
- ☐ Panel mounting

Wiring Diagram









OB16L-40 Residual Current Circuit Breaker with Overcurrent Protection





Construction and Feature

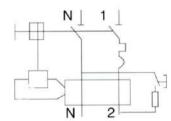
- Provides protection against earth fault/leakage current, short-circuit, overload, and function of isolation
- Provides complementary protection against direct contact by human body
- Effectively protects electric equipment against insulating failure
- Provides comprehensive protection to household and commercial distribution systems

Technical Data

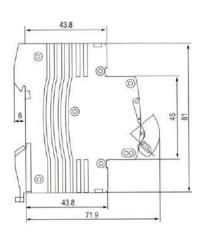
- Type: Electro-magnetic type
- Residual current characteristics: AC
- Pole No.:1P+N
- Tripping curve:B,C
- Rated short-circuit capacity:6kA
- Rated current(A):6,10,16,20,25,32,40
- Rated voltage:240V AC
- Rated frequency:50/60Hz
- Rated residual operating current (mA):30
- Tripping duration: instantaneous ≤ 0.1s
- Electro-mechanical endurance:4000 cycles
- Connection terminal: pillar terminal with clamp

- Connection capacity:
- ☐ Flexible conductor 10mm²
- ☐ Rigid conductor 16mm²
- Installation:
- ☐ On symmetrical DIN rail 35mm
- ☐ Panel mounting
- ☐ Wiring Diagram

Wiring Diagram







OB16L-32 I Residual Current Circuit Breaker with Overcurrent Protection



Construction and Feature

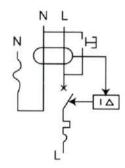
- Elegant appearance; cover and handle in arc shape make comfortable operation.
- Contact position indicating window
- Transparent cover designed to carry label.
- In case of overload to protected circuit, RCBO handle trips and stays at central position ,which enables a quick solution to the faulty line. The handle cannot stay in such position when operated manually.
- RCBO handle can be locked either at "ON" position or at "OFF" position to prevent unwanted operation of the prod-
- uct.
- Provides protection against earth fault/leakage current, shortcircuit and overload
- High short-circuit capacity
- Provides complementary protection against direct contact by human body.
- Effectively protects electric equipment against insulating failure
- Contact position indication
- Provides protection against over-voltage

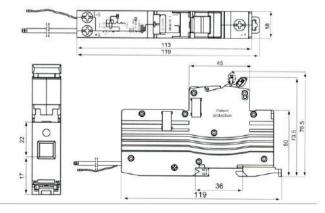
Technical Data

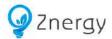
- Type: electronic type
- Residual current characteristics: AC
- Pole No.:1P+N
- Tripping curve: B,C,D
- Rated short-circuit capacity:10kA
- Rated current(A):1,2,3,4,6,10,16,20,25,32
- Rated voltage:240V AC
- Rated frequency:50Hz
- Rated residual operating current(mA): 0.03,0.1,0.3
- Tripping duration: instantaneous ≤ 0.1s
- Terminal Connection Height: H1=19mm H2=22mm H3=18mm

- Electro-mechanical endurance:4000 cycles
- Connection terminal: pillar terminal with clamp
- Connection capacity:
- ☐ Flexible conductor 10mm²
- ☐ Rigid conductor 16mm²
- Installation:
- ☐ On symmetrical DIN rail 35mm
- ☐ Panel mounting

Wiring Diagram







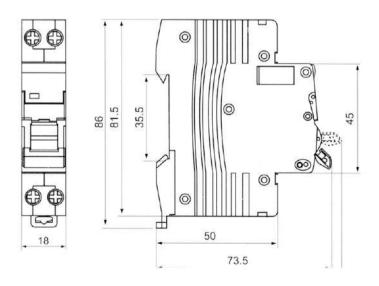
OB16L-32 II Residual Current Circuit Breaker with Overcurrent Protection





Technical Data

- Residual current characteristics: AC
- Pole No.: 1P+N
- Tripping curve: B, C
- Rated short-circuit capacity: 6000A
- Rated current (A): 6, 10, 16, 20, 25, 32
- Rated voltage: 230V
- Rated frequency: 50Hz
- Rated residual operating current(A): 0.03
- Tripping duration: instantaneous ≤ 0.1s
- Electro-mechanical endurance: 3000 cycles



OD16-63 Switch-disconnector



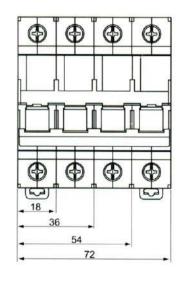
Construction and Feature

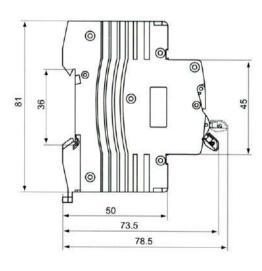
- Capable of switch electric circuit with load
- Adaptable to padlock device
- Contact position indication
- Capable of quickly releasing stored energy operation
- Highlighted of high making and breaking capacity
- High short-circuit current withstand capacity
- Used as main switch for household and similar installation

Technical Data

- Pole No.:1,2,3,4
- Rated current(A):16,25,40,63
- Rated voltage:230/240V AC
- Rated frequency:50/60Hz
- Rated short-circuit making capacity:6kA
- Rated withstand current: 1kA within 1 sec
- Electro-mechanical endurance:10000 cycles
- Connection capacity: Rigid conductor 25mm²

- Connection terminal:
- ☐ Screw terminal
- Pillar terminal with clamp
- Installation:
- ☐ On symmetrical din rail 50mm
- ☐ Panel mounting
- Terminal Connection Height :H=19mm







OD16-125 Switch-disconnector





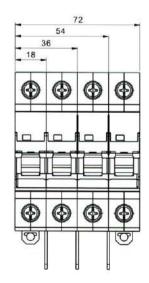
Construction and Feature

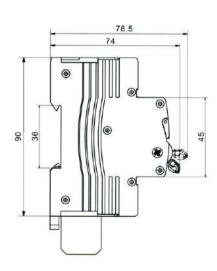
- Capable of switch electric circuit with load
- Adaptable to padlock device
- Contact position indication
- Capable of quickly releasing stored energy operation
- Highlighted of high making and breaking capacity
- High short-circuit current withstand capacity
- Used as main switch for household and similar installation

Technical Data

- Pole No.:1,2,3,4
- Rated current(A):63,80,100,125
- Rated voltage:230/240V AC
- Rated frequency:50/60Hz
- Rated short-circuit making capacity:6kA
- Rated withstand current:2kA within 1 sec
- Electro-mechanical endurance:10000 cycles
- Connection capacity: Rigid conductor 35mm²

- Connection terminal:
- ☐ Screw terminal
- Pillar terminal with clamp
- Installation:
- ☐ On symmetrical din rail 50mm
- ☐ Panel mounting
- Terminal Connection Height :H1=19mm





OS16 Surge Protective Device



Application

OS16 Surge protective Devices(referred as SPD) provide protection against surge current resulted from direct or indirect lighting strike or similar surge voltage. SPD is applicable to circuit with rated voltage up to 400V~,rated frequency 50/60Hz.

The product justing metal oxide varistor, designed to protect both phase and neutral line, is of high electricity resistance under normal operation. In case of surge current or voltage caused by lighting strike or similar, SPD functions quickly to conduct the surge voltage/current to earth and thus effectively prevent the downstream equipment of its protected line from destruction. SPD resume its high electricity resistance to secure normal operation of the protected power network without presence of the surge voltage.

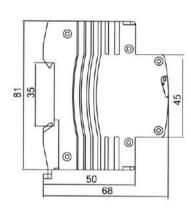
Construction and Feature

- One –unit type assure the stability of product
- On-off indicating window
- Quick response less than 25ms

Technical Date

- Pole No.:1
- Frequency:50/60Hz
- Connection terminal:
- □ Pillar terminal with clamp
- Terminal Connection Height: H=19mm
- On-off indicating window:
- ☐ Green: normal function
- Red: functionless, immediate replacement required
- Connection capacity: rigid conductor 25mm²





Category	OS16-A	OS16-B	OS16-C	OS16-D	OS16-E
Rated voltage Un	220	220	220	380	380
Max. continuous operation voltage Uc(v)	320	320	320	420	460
Voltage protection level Up(kv)	1	1.2	1.5	2.0	2.3
Norminal discharge current In(kA)	5	10	20	30	40
Rated varistor voltage(V)	510 ± 10%			680 ± 10%	
Max. discharge current Imax (kA)(8/20us)	10	20	40	60	70
Response time (ms)	540 540		< 25		
Power withstand (J)(ams)	300	390	640	1500	1580
Ambient temperature			-40~+80		
Function unit colour	deep yellow	light yellow	light grey	brown	red
Min. terminal connection(mm²)		phas	e, neutral 2.5, ea	arth 4	



OA16 Modual Signal Lamp





Application

The Modular Signal Lamp is applicable to circuit with rated voltage 230V ~ and frequency 50/60Hz for visual indication and signaling.

Construction and Feature

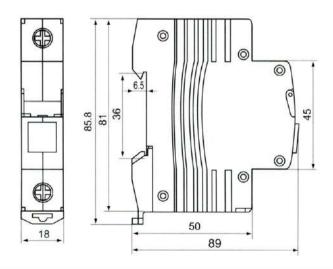
- Low service duration, minimum power consumption
- Compact design in modular size
- Easy installation

Technical Data

- Rated voltage:230V AC
- Rated frequency:50/60Hz
- Colour :red ,green,yellow
- Connection terminal: pillar terminal with clamp
- Connection capacity: rigid conductor 10mm²
- Installation:
- ☐ On symmetrical DIN rail
- ☐ Panel mounting
- Terminal Connection Height: H=19mm

OA16 LED Signal Lamp

- Max power: 0.6W
- lumination: LED
- Service duration: 30.000 hours



OY16 Modular Pushbutton Switch



Application

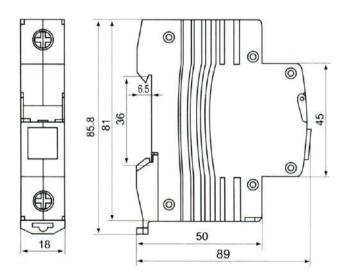
The Modular Pushbutton Switch is applicable to circuit with rated voltage up to 250V~ and frequency 50Hz for controlling, signaling and interlocking

Construction and Feature

- Minimum power consumption
- Compact design in modular size
- Easy installation

Technical Data

- Ambient temperature:-25~+40 °C
- Service duration: cycles ≥ 100,000 hours
- Insulating resistance: ≥ 50M Ω
- Rated current:3A
- Rated voltage:250V
- Contact resistance: ≤ 50m Ω





BT Bell Transformer





Application

Applicable to circuit with rated voltage 230V~ and rated frequency 50/60Hz, used to power electric bell of extra low voltage.

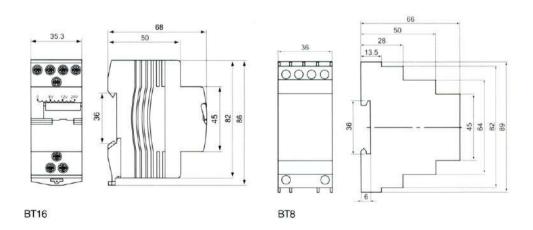
Construction and Feature

- Safe electrical separation between primary and secondary circuit
- Provides extra low voltage up to 24V
- Low temperature rising
- High output accuracy
- Extra overload capacity up to 25% within 24 hours

Technical Data

- Rated input voltage:230V AC
- Rated output voltage:
- ☐ BT16: 8,12,24V
- ☐ BT8:4,6,8,12,16,24v
- Rated frequency:50/60Hz
- Rated power output:8VA
- Consumption:1.15W
- Service period: continuous operating
- Pollution class:2

- Connection terminals: pillar terminal with clamp
- Connection capacity: rigid conductor 10mm²
- Installation:
- ☐ On symmetrical DIN rail
- ☐ Panel mounting
- Terminal Connection Height :H=15.5mm



BE16 Electric Bell



Application

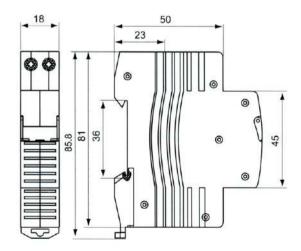
The electric bell is suitable for audible signaling for intermittent use only in domestic and commercial installations.

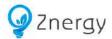
Construction and Feature

- Elegant appearance, compact size and easy installation
- Low consumption
- Product with rated current up to 24V AC to be powered by bell transformer BE16

Technical Data

- Rated voltage:8,12,24,230V AC
- Rated frequency: 50/60Hz
- Service mode: intermittent
- Connection terminal: pillar terminal with clamp
- Connection capacity: rigid conductor 10mm²
- Installation:
- ☐ On symmetrical DIN rail
- □ Panel mounting
- Terminal Connection Height: H=17mm





선 선 2
Me To We To Fr D. Su. Derinc /

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Me To We To Fr St St. Detec / /

