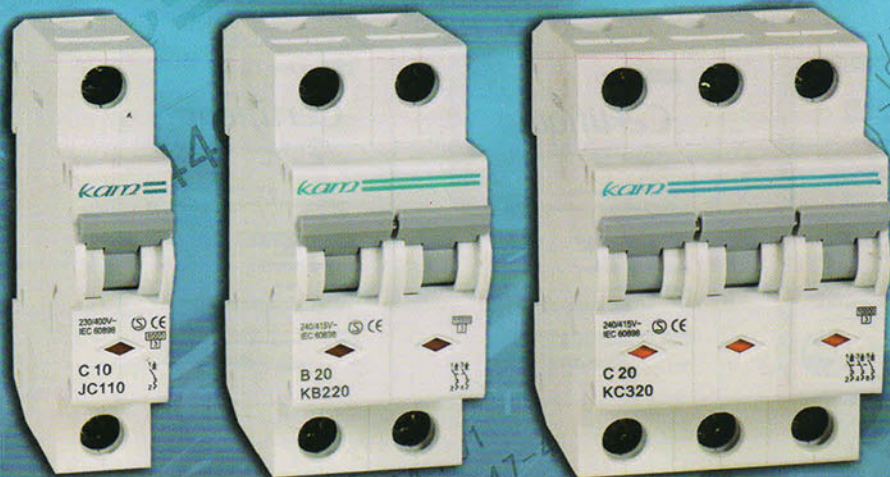


kamTM

- Miniature Circuit Breakers (MCBs)
- Residual Current Circuit Breaker
- Isolating Switches
- Contactors
- Floatless Switch
- Modular Fuse Carriers and Cartridge Fuses
- HRC Knife Fuse & Fuse Base
- HRC Cylindrical Fuse
- Earth Leakage Relay



Circuit Protection



Miniature Circuit Breakers (MCBs)

KM-JB/JC,KB/KC

The Model KM-JB/JC, KB/KC Miniature Circuit Breakers (MCBs) conform with national and international specification ICN 60898, complying with the requirements of modern electrical installations.

The MCBs utilized both thermal and electromagnetic tripping in the overload and short circuit protections. They are well-suited to protect wires and cables against overcurrents.

Two types of overcurrent protection are available, Type B and Type C. The thermal release (bimetal release) of the two types is the same. The delay time tripping operates in the range of 1.05 to 1.3 times the rated current. So the minimum current for the thermal release operates slightly about the rated current in order to protect electrical machinery against overload.

Type B characteristic can be used for general lighting and cables protection.

Type C characteristic is ideally suited for the protection of electrical apparatus. The extended operating current of the electromagnet release protects against nuisance tripping due to high transient currents and starting currents of electrical machinery.

SPECIAL FEATURE OF KM-JB/JC, KB/KC:

- Twin purpose terminals (lift open mouth)
- Busbar positioning optionally above or below
- Terminal connections accept cable sizes up to 25mm²
- Terminal connections suitable for both prong type and fork type copper busbars.



Terminal connections accept cable sizes up to 25mm²

SPECIFICATION

Characteristic Types of MCBs	Test Current / tripping time					
	Thermal operation			Electromagnetic Trip		
	Low test current	High test current*	Trip time	Hold current	Trip Current	Trip time
B	1.13 I _n	-	≥ 1 hr	3 I _n	-	≥ 0.1 s
	-	1.45 I _n	< 1 hr	-	5 I _n	< 0.1 s
C	1.13 I _n	-	≥ 1 hr	5 I _n	-	≥ 0.1 s
	-	1.45 I _n	< 1 hr	-	10 I _n	< 0.1 s

*The high test current is conducted immediately after the low test current





Miniature Circuit Breakers (MCBs)

KM-JB/JC,KB/KC

	In/A	Width in mm 17.5	'B' curve (6kA)	'C' curve (6kA)	'B' curve (10kA)	'C' curve (10kA)
	1 Pole	4	1		JC104	
6		1	JB106	JC106	KB106	KC106
10		1	JB110	JC110	KB110	KC110
16		1	JB116	JC116	KB116	KC116
20		1	JB120	JC120	KB120	KC120
32		1	JB132	JC132	KB132	KC132
40		1	JB140	JC140	KB140	KC140
63		1	JB163	JC163	KB163	KC163

	In/A	Width in mm 17.5	'B' curve (6kA)	'C' curve (6kA)	'B' curve (10kA)	'C' curve (10kA)
	2 Pole	10	2	JB210	JC210	KB210
16		2	JB216	JC216	KB216	KC216
20		2	JB220	JC220	KB220	KC220
32		2	JB232	JC232	KB232	KC232
40		2	JB240	JC240	KB240	KC240
63		2	JB263	JC263	KB263	KC263
80		3	JB280	JC280	KB280	KC280
100		3	JB2100	JC2100	KB2100	KC2100
125		3	JB2125	JC2125	KB2125	KC2125

	In/A	Width in mm 17.5	'B' curve (6kA)	'C' curve (6kA)	'B' curve (10kA)	'C' curve (10kA)
	3 Pole	16	3	JB316	JC316	KB316
20		3	JB320	JC320	KB320	KC320
32		3	JB332	JC332	KB332	KC332
40		3	JB340	JC340	KB340	KC340
50		3	JB350	JC350	KB350	KC350
63		3	JB363	JC363	KB363	KC363
80		4.5	JB380	JC380	KB380	KC380
100		4.5	JB3100	JC3100	KB3100	KC3100
125		4.5	JB3125	JC3125	KB3125	KC3125

	In/A	Width in mm 17.5	'B' curve (6kA)	'C' curve (6kA)	'B' curve (10kA)	'C' curve (10kA)
	4 Pole	16	4	JB416	JC416	KB416
20		4	JB420	JC420	KB420	KC420
32		4	JB432	JC432	KB432	KC432
40		4	JB440	JC440	KB440	KC440
50		4	JB450	JC450	KB450	KC450
63		4	JB463	JC463	KB463	KC463
80		6	JB480	JC480	KB480	KC480
100		6	JB4100	JC4100	KB4100	KC4100
125		6	JB4125	JC4125	KB4125	KC4125



1 POLE



2 POLE



3 POLE



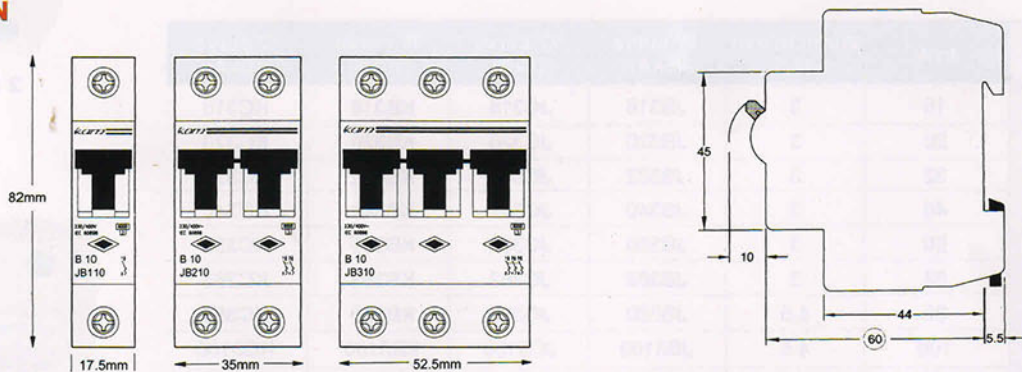
Miniature Circuit Breakers (MCBs)

KM-JB/JC,KB/KC

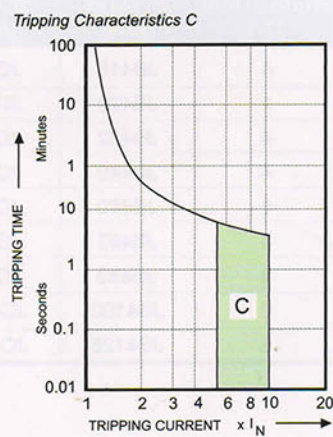
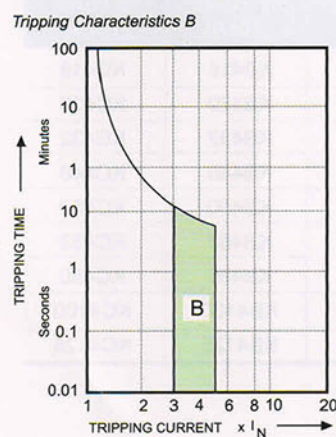
TECHNICAL DATA

Electrical		Mechanical	
According to	IEC/EN 60898/60947-1	Frame size	45 mm
Rated Current	0.5...6 A	Device height	86 mm
Rated Voltage	230/400V; 240/415V	Device width	17.5 mm per hole
Rated frequency	50/60 Hz	Mounting	Rail clip with two positions for DIN rails EN 50022
Rated breaking capacity	6kA and 10kA	Tightening Torque	2 Nm
Characteristics	B, C	Terminals (upper and lower)	Open mouth/lift terminals, support prong/fork type terminals
Back-up fuse Max.	100 A gL	Terminal protection	Finger and hand touch safe
Selectivity class	3	Terminal capacity (1P, 2P, 3P)	1 - 50 mm ²
Calibration temperature	40°C	Busbar thickness	0.8 - 2 mm
Degree of protection	Built-in switch IP40		
Endurance	≥ 8000 switching cycles		

DIMENSION



Time Current Characteristics of Type B and C





Residual Current Circuit Breaker

KM-FD, FE, FF

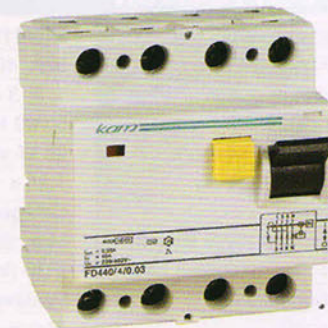
Construction and feature

- 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 equipments against insulating failure
- Provides comprehensive protection to household and commercial distribution systems.

SPECIFICATION	
Design according to	IEC 1008 (EN61008) Undelayed
Tripping time	min. 10ms delay min. 40 ms delay with selective disconnecting function
Rated voltage	230/415V; 50Hz
Rated tripping current	30, 100, 300mA
Sensitivity	AC and pulsating DC
Rated short	10kA with 63A gL back-up fuse 10kA with 80A gL
Circuit strength	(F7 - 80 and - 863) 6kA (rated current 63A) with 63A gL
Maximum back-up fuse for Short Circuit protection	63A gL 80a gL (F7 - 80 and - 863)
Maximum back-up fuse	25A gL (F7 - 25 and -40A)
Overload protection	40A gL (F7 80A)
Resistance to climatic conditions	According to IEC 1008
Degree of Protection	Built-in switch IP40
Endurance	
Electrical comp.	4.000 operating cycles
Mech comp.	20.000 operating cycles



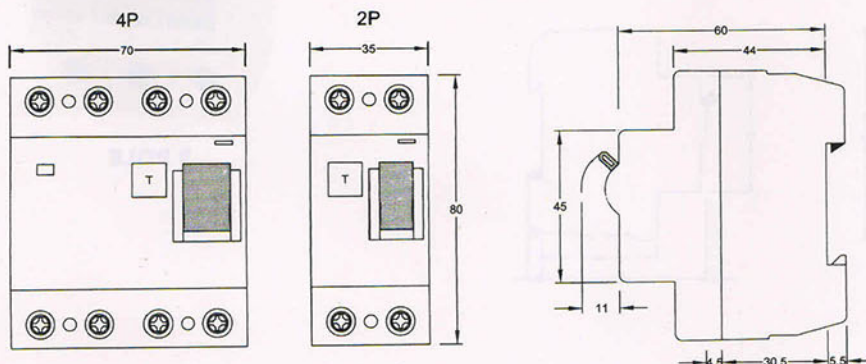
2 POLE



4 POLE

Rated Voltage	Type & Specification	Rated Operating Current	Residual Operating Current Range	Reference No.
230VAC	2 Poles	0.03A (KM-FD) 0.1A (KM-FE) 0.3A (KM-FF)	40A 63A	KM-FD240/263
				KM-FE240/263
415VAC	4 Poles	0.03A (KM-FD) 0.1A (KM-FE) 0.3A (KM-FF)	40A 63A	KM-FF240/263
				KM-FD440/463
				KM-FE440/463
				KM-FF440/463

OVERALL & INSTALLATION DIMENSIONS





Residual Current Circuit Breaker

KM-FD, FE, FF

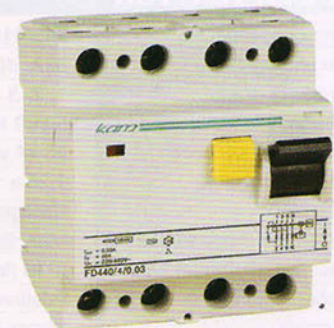
Construction and feature

- 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 equipments against insulating failure
- Provides comprehensive protection to household and commercial distribution systems.

SPECIFICATION	
Design according to	IEC 1008 (EN61008) Undelayed
Tripping time	min. 10ms delay min. 40 ms delay with selective disconnecting function
Rated voltage	230/415V; 50Hz
Rated tripping current	30, 100, 300mA
Sensitivity	AC and pulsating DC
Rated short	10kA with 63A gL back-up fuse 10kA with 80A gL
Circuit strength	(F7 - 80 and - 863) 6kA (rated current 63A) with 63A gL
Maximum back-up fuse for	63A gL
Short Circuit protection	80a gL (F7 - 80 and - 863)
Maximum back-up fuse	25A gL (F7 - 25 and -40A)
Overload protection	40A gL (F7 80A)
Resistance to climatic conditions	According to IEC 1008
Degree of Protection	Built-in switch IP40
Endurance	
Electrical comp.	4.000 operating cycles
Mech comp.	20.000 operating cycles



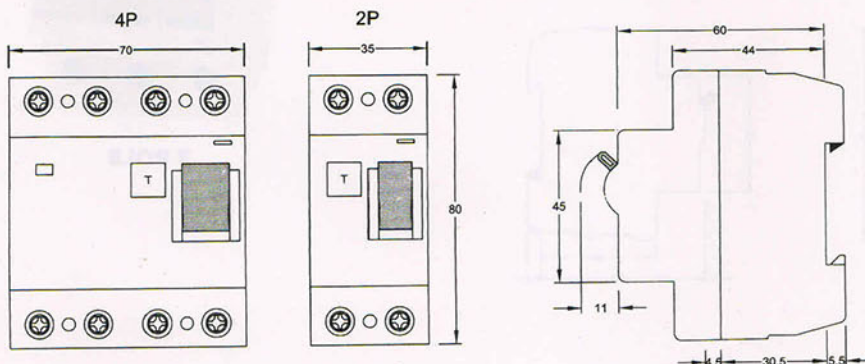
2 POLE



4 POLE

Rated Voltage	Type & Specification	Rated Operating Current	Residual Operating Current Range	Reference No.
230VAC	2 Poles	0.03A (KM-FD)	40A 63A	KM-FD240/263
		0.1A (KM-FE)		KM-FE240/263
415VAC	4 Poles	0.3A (KM-FF)		KM-FF240/263
				KM-FD440/463 KM-FE440/463 KM-FF440/463

OVERALL & INSTALLATION DIMENSIONS





Isolating Switches

KM-SB

Isolators KM-SB

Kam isolators are designed for installation in switchboards and distribution boards on 35mm mounting rails according to DIN EN 50022.

A wide range of ratings are available from 32A to 63A in 1, pole, 2 pole, 3 pole and 4 pole. Their compact dimensions are according to EN 61947/3 or BS 5419/77, and thus matching those of the RCDs and MCBs.

2-pole and 3-pole isolators are useful as main switches in electrical installations. In special applications, isolators are mandatory.

The field of applications cover electrical installations in trade, industry and home in many variations.

- Designed to meet the latest technical requirements
- 2-pole and 3-pole type
- Short-circuits strength 25 kA with 100 A gL back-up fuse
- Generous direct contact position indication display
- Easy wiring through compact dimensions
- 2 connection levels
Convenient pozdrive screws
Generously dimensioned box terminals
- Captive connection screw, opened in supply condition
- According to: EN 61947-3
BS 5419/77
IEC 947/3

SPECIFICATION	
Nominal voltage	240/415 V
Rated current	32A, 40A, 63 A
Number of poles	1, 2, 3 and 4 poles
Frequency	50/60 Hz
Short-circuit strength	25 kA with 100A gL Back-up fuse
Switching capacity	$1.25 \times I_N$; $1.1 \times U_N$
Utilization	Category Ac22
Connection cross section	Max. 50mm ²
Protective enclosure type	IP40 (installed condition)
Disconnection	Positive switch with positive opening operation
Terminals	Shock-hazard protection
Dimensions	
Height	82mm
Width	1 module per pole (17.5mm)



1 POLE

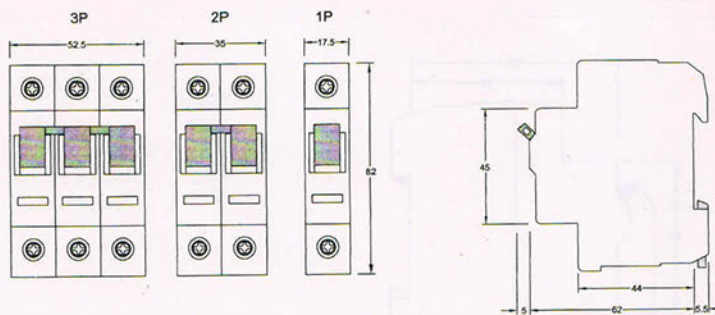


2 POLE



3 POLE

OVERALL & INSTALLATION DIMENSIONS





Contactors

Isolators KM-HS

For the remote switching and control of power circuits

Technical data

The choice of contactor depends upon a number of parameters e.g

- the nature of the supply
- the power it is switching
- the characteristics of the load
- the control voltage required

Coil AC 50/60Hz	Type	Power circuit 50/60Hz	Width in 17.5mm	Reference No.	Pack Qty
230VAC	2NO	25A-250V	1	HS225	1
		40A-400V	2	HS240	1
	4NO	40A-400V	3	HS440	1
		63A-400V	3	HS463	1



1 POLE

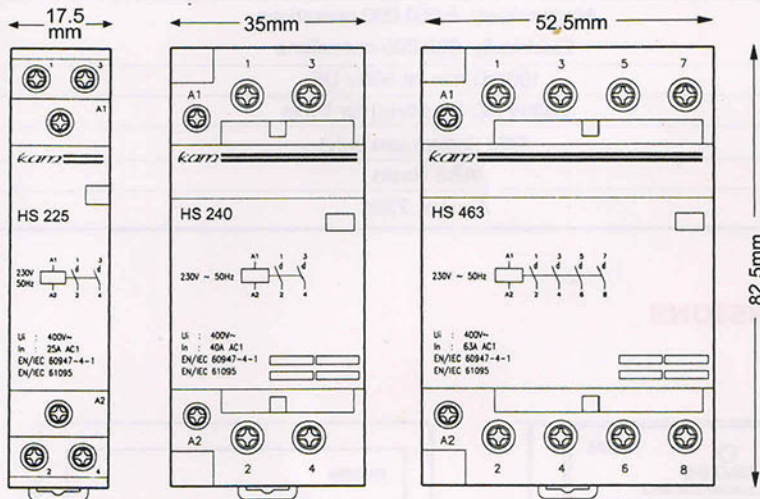


2 POLE



4 POLE

OVERALL & INSTALLATION DIMENSIONS





Modular Fuse Carriers and Cartridge Fuses KM-TFH, KM-TFH2258

The KM-TFH is the carrier for the 10.3 x 38 cartridge fuses.

The KM-TFH provided two in/out lines, providing a power cutting function. The neutral line is isolated when replacing the fuse link. The carriers and fuse link comply to rated voltage of 500V AC with working frequency of 50/60Hz and comply to IEC 269-1, IEC 269-2-1 & IEC 947-3.

They are capable of working under heat caused by rated current and expected short impacting current of up to 100kA.

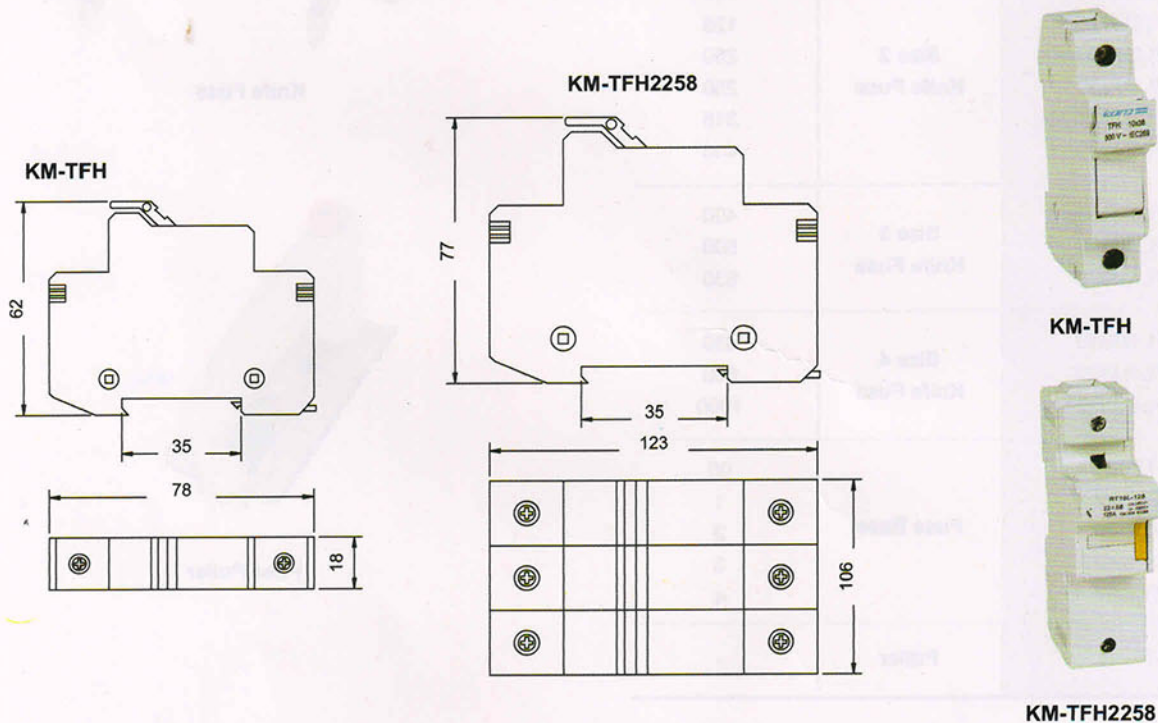
The carrier contacts are of silver-coated copper material. The KAM cartridge fuses are made from high duty ceramic and filled with chemically treated high-purity quartz sand acting as arc-extinguishing medium. Dot welding of fuse element to the silver coated copper cap ensures reliable connection.

The KAM fuse carriers case are plastic injected with fire resistance and self-extinguishing material. The base are formed to be welded and can be used on DIN rail.

Fuse Carriers

Product code	KM-TFH	KM-TFH1451	KM-TFH2258
Fuse link sizes (mm)	DIA. 10.3 X 38mm	DIA. 14 X 51mm	DIA. 22 X 58MM
Rated voltage (V)	500	690	690
Rated current (A)	32	50	125
Weight (G)	56g (1P)	300g (1P)	540g (1P)
Phases	1P, 1P+N, 3P, 3P+N	1P, 2P, 3P, 3P+N	1P, 2P, 3P, 3P+N
Pack qty	12, 6, 4, 3	6, 3, 2, 1	6, 3, 2, 1

DIMENSION





HRC Knife Fuse & Fuse Base

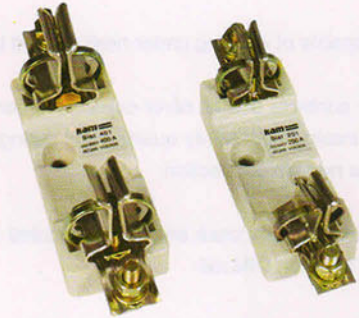
APPLICATION

Protection against overcurrent of any low voltage electrical circuit.

TECHNICAL DATA

- Standard comply to: IEC 269, VDE 0636
- Rated Breaking Capacity: 120KA - 500 V AC
- 6 sizes: 00, 0, 1, 2, 3, 4
- Ratings: 32A to 1000A. 2 application categories at 500V AC
- GL (distribution)
- AM (motor)

Product code	Description	Rating / A
KM-TFLM032	Size 00 Knife Fuse	32
KM-TFLM040		40
KM-TFLM050		50
KM-TFLM063		63
KM-TFLM080		80
KM-TFLM100		100
KM-TFLM125		125
KM-TFL1M125	Size 1 Knife Fuse	125
KM-TFL1M160		160
KM-TFL1M200		200
KM-TFL1M250		250
KM-TFL2M160	Size 2 Knife Fuse	160
KM-TFL2M125		125
KM-TFL2M200		200
KM-TFL2M250		250
KM-TFL2M315		315
KM-TFL2M400		400
KM-TFL3M400		Size 3 Knife Fuse
KM-TFL3M500	500	
KM-TFL3M630	630	
KM-TFL4M630	Size 4 Knife Fuse	630
KM-TFL4M800		800
KM-TFL4M999		1000
KM-TFBM	Fuse Base	00
KM-TFB1M		1
KM-TFB2M		2
KM-TFB3M		3
KM-TFB4M		4
KM-TFPM	Puller	-



Fuse Base



Knife Fuse



Fuse Puller



HRC Cylindrical Fuse

KM-TFL, KM-1451, KM-2258

APPLICATION

Protection and control of circuits against overloads and short circuits.

TECHNICAL DATA

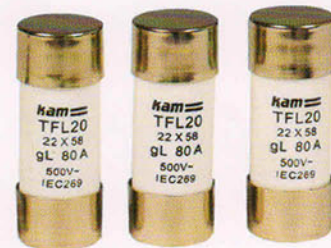
- Standard comply to: IEC 269, VDE 0636
- Rated Breaking Capacity: 120KA - 500 V AC
- 3 sizes: 10x38, 14x51 and 22x58
- Ratings: 1A to 100A. 2 application categories at 500V AC
- GL (distribution)
- AM (motor)



Cylindrical Fuse
10 x 38



Cylindrical Fuse
14 x 51



Cylindrical Fuse
22 x 58

Product code	Description	Rating / A
KM-TFL02	KM-TFL 10 x 38mm Cylindrical Fuse	2
KM-TFL04		4
KM-TFL06		6
KM-TFL08		8
KM-TFL10		10
KM-TFL12		12
KM-TFL16		16
KM-TFL20		20
KM-TFL32		32
KM-1451-04		KM-1451 14 x 51mm Cylindrical Fuse
KM-1451-06	6	
KM-1451-10	10	
KM-1451-16	16	
KM-1451-25	25	
KM-1451-32	32	
KM-1451-40	40	
KM-1451-50	50	
KM-2258-050	KM-2258 22 x 58mm Cylindrical Fuse	50
KM-2258-063		63
KM-2258-080		80
KM-2258-100		100

kamTM

Modular Devices & Metering

- Electronic Energy Meters
- Panel Meters
- Digital Power Meter
- Energy Meter Plus
- Energy Meters (Counter Type)
- FAV + Meters / FAV Meters
- Multi-Function Digital Power Meter
- Hour Run Meter
- Time Switch





FAV + Meters / FAV Meters

FEATURES

- State of the art Microcontroller Based Design
- Relay Output for cutoff / Alarm
- User programmable Alarm set Point, Time Delay & CT ratio
- True RMS measurement
- Auto Scrolling Facility
- Password Protection
- Bar Graph indication for Load

APPLICATION

- Control Panel
- Distribution Systems
- Generator Sets
- Motor Control
- Test Bench

PARAMETERS

- Volts
 - R-Y Voltage
 - Y-B Voltage
 - B-R Voltage
 - R-N Voltage
 - Y-N Voltage
 - B-N Voltage
- Amps
 - R Phase
 - Y Phase
 - B Phase
- Frequency
 - System



FAV + METER



FAV METER

Specification	FAV + Meters	FAV Meters
System	3 Phase 4 Wire / 3 Phase 3 Wire	3 Phase 4 Wire / 3 Phase 3 Wire
Aux. Supply	230V / 110VAC 50Hz (-20% +15%)	230V / 110VAC 50Hz (-20% +15%)
Burden on Aux.	<4 VA	<4 VA
Voltage Input	110/415/440 VAC (L-L) 500 V max	110/415/440 VAC (L-L) 500 V max
Current Input	1 Amps / 5 Amps	1 Amps / 5 Amps
Burden on CT	< 0.2 VA	< 0.2 VA
Temp	0 ~ 55° C	0 ~ 55° C
Humidity	< 90% RH (non condensing)	< 90% RH (non condensing)
Weight	500 gms	500 gms
Accuracy		
Voltage	0.5% of FS ± 2 Digit	0.5% of FS ± 2 Digit
Current	0.5% of FS ± 2 Digit	0.5% of FS ± 2 Digit
Frequency	± 0.02 Hz	± 0.02 Hz
Resolution		
Volts	1V	1V
Hz	0.1Hz	0.01Hz
Amps		
0 ~ 99	0.1A	0.1A
100~999	1A	1A
>1000	0.01KA	0.01KA
Dimension		
Depth (behind bezzel)	96x96mm	96x96mm
Panel Cut out	80mm	80mm
	92x92mm	92x92mm

kam Hour Run Meter

KM-EHM APPLICATION

- This product is suitable for usage of House, Industry, Air condition, etc.
- Time setting range available from 0 to 99, 999.99 hours



KM-EHM



KM-QT170

kam Time Switch (Weekly)

KAM TIME SWITCH (WEEKLY)

KM-QT170 APPLICATION

- Latest technology COMS quartz Micro-controller
- Repeat programs with 8 ON/OFF settings
- LCD displays real time to Hour/Minute and ON/AUTO/OFF
- In compliance with standard EN 60730

kam TIME SWITCH (DAILY)

KAM TIME SWITCH (DAILY)

KM-SUL181H APPLICATION

- Electromechanical time switches 1 channel for daily programming
- Din rail installation & reserve time up to 150 hours
- To control lighting, heating, household appliances, shop etc



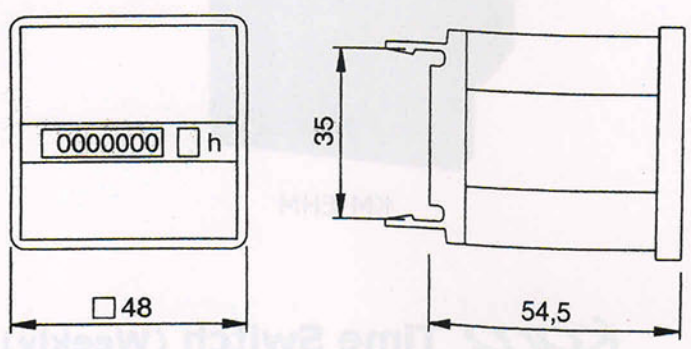
KM-SUL181H

Item No	KM-EHM	KM-QT170	KM-SUL181H
Supply voltage	AC110V, 220V 50Hz	AC180V-264V (50/60Hz)	AC230V (45-60Hz)
Dimension	48x48x40	36 x 82 x 66	2.5x90x65.5
Time range	0-99, 999.99	weekly	Hourly
Net weight	50g	150g	130g

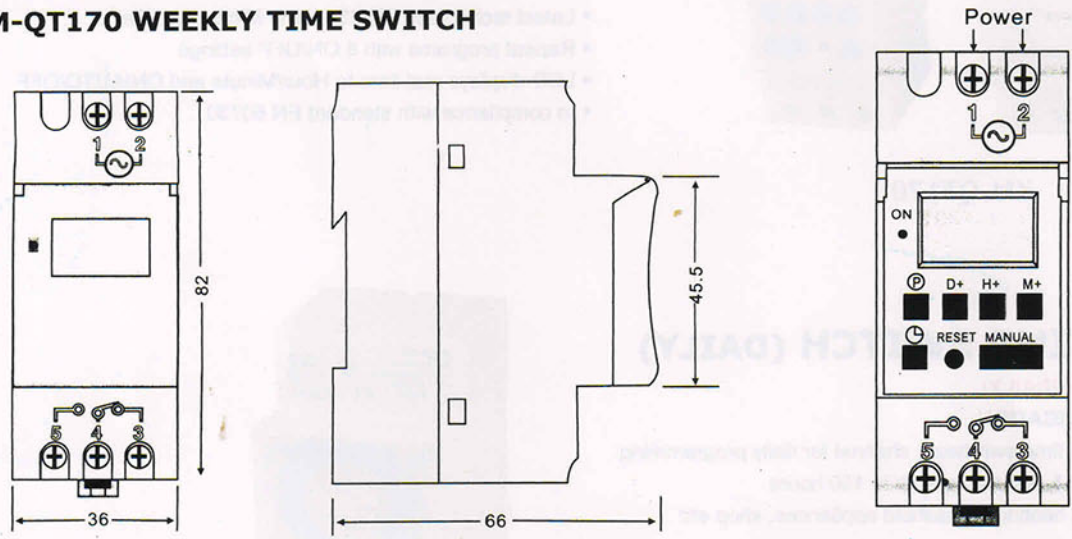


DIMENSION

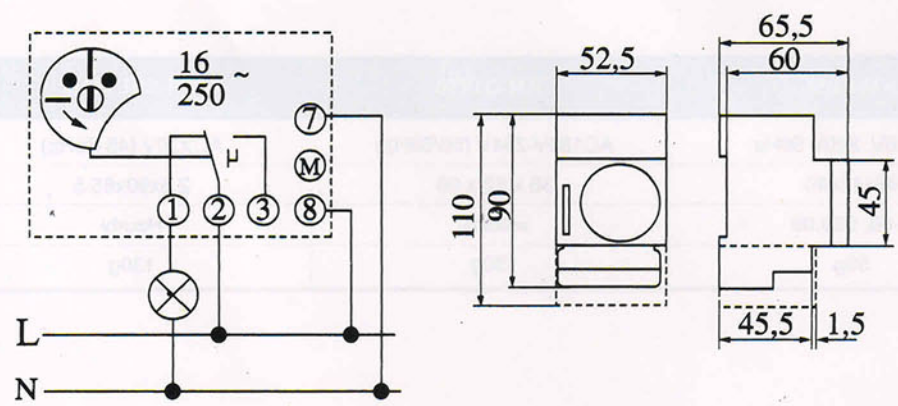
KM-EHM HOUR RUN METER



KM-QT170 WEEKLY TIME SWITCH



KM-SUL181H DAILY TIME SWITCH





Cam Switches M-ASW, WAM, WVM

General

Cam switches are composed of identical contact bearings arranged in a row on a mile. Cam switches are used in motor connections, panel meter switching, control and distribution panels. Kam cam switches are manufactured according to IEC 6097-3/EN 6097-3 standards and CE certification.

Cam switches are manually operated switches. Contractor and relays are used in controlling medium and high powered motors, but controlling low power is made by cam switches as they are simple and economic.

Cam switches have two, three or four silver coated contacts in each section and cam switches can be used in different controlling operations by increasing the number of sections. As the camshafts make the contacts work at the same time, controlling of all circuits or phases can be done safely at the same time without any delay.



KM-WTP01



KM-WTP02



KM-WTP03



KM-WTP04

General table

		Type	KCS1				
Cam switches IEC 6094-3, EN 6094-3	Utilization Categories	Rated Terminal Current Ith (A)	10	16	20	25	
		Rated Insulation Voltage Ui (V) 50-60 Hz	690	690	690	690	
Rated Operating Current (A) for	AC1	220-240 V	10	16	20	25	
		380-440 V	6	10	13	16	
		660-690 V	4	6	8	10	
	AC15	220-240 V	3	5	6	7.5	
		380-440 V	2	4	4	5	
		660-690 V	-	-	-	-	
AC21A	220-240 V	10	16	20	25		
	380-440 V						
	660-690 V						
Rated Operating Power (kW) for	AC23A	220-240 V	1P	1.25	2	2.5	3
			3P	2.2	3.7	3.7	6
		380-440 V	1P	2	3	3.7	5
			3P	3.7	6	7.5	10
		660-690 V	1P	2	3	4	5
			3P	3.7	6.5	7.5	10
	AC3	220-240 V	1P	1	2	2.2	3
			3P	1.8	3	3	5
		380-440 V	1P	2	3	3	5
			3P	3	5	5.5	8
		660-690 V	1P	2	3	3	5
			3P	3	5.2	5.5	8
Protection Fuses gL/gG (A)			16	20	25	32	



On-Off Switches

Type	Rated Terminal Current Ith (A)	Number of Poles - Stages	Front Plate	Connecting Diagram	Order Codes
KCS1	10	1 pole - 1 Stage			KM-WTP-04
	16	2 poles - 1 Stage			
	20	3 poles - 2 Stages			
	25	4 poles - 2 Stages			

Change Over Switches

Type	Rated Terminal Current Ith (A)	Number of Poles - Stages	Front Plate	Connecting Diagram	Order Codes	
KCS1	10	1 pole - 1 Stage			KM-WTP-01	
	16					
	20					3 poles - 2 Stages
	25					
KCS1	10	3 poles - 2 Stages			KM-WBP-01	
	16					
	20					
	25					

Type	Rated Terminal Current Ith (A)	Number of Poles - Stages	Front Plate	Connecting Diagram	Order Codes
KCS1	10	1 pole - 1 Stage			KM-WTP-02
	16	2 poles - 1 Stage			
	20	3 poles - 2 Stages			
	25	4 poles - 2 Stages			



KM-WAM



KM-WVM



KM-WBP01



KM-WBP02



Ammeter Switch

Type	Rated Terminal Current Ith (A)	Number of Poles - Stages	Front Plate	Connecting Diagram	Order Codes
KCS1	10	3 Phase current 3 C/T 3 Stages			KM-WAM
	16				
	20				
	25				

Voltmeter Switch

Type	Rated Terminal Current Ith (A)	Number of Poles - Stages	Front Plate	Connecting Diagram	Order Codes
KCS1	20	3 Phase 3 Stages 4 Wires			KM-WVM

Selector Switch

Type	Rated Terminal Current Ith (A)	Number of Poles - Stages	Front Plate	Connecting Diagram	Order Codes
KCS1	10	3 Phase Current 3 C/T 3 Stages			KM-WTP-03
	16				
	20				
	25				

Key Switch

Type	Rated Terminal Current Ith (A)	Number of Poles - Stages	Front Plate	Connecting Diagram	Order Codes
KCS1	10	1 Pole - 1 Stage			KM-WBP-02
	16	2 Poles - 1 Stage			
	20	3 Poles - 2 Stages			
	25	4 Poles - 2 Stages			

NOTE: Special front plate design on request.



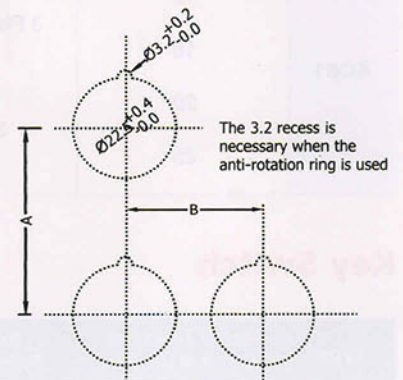
Control Units

Space-saving, thin style contact blocks
 Separate operator part makes handling easy

- Small & light-weight
- Finger-safe screw terminals of IP20 enhance safety
- Separate contact block makes installing and removing easy
- Pilot lights feature a large lens to ensure a wide viewing angle for increased safety.



Specification	
Operating Conditions	Operating temperature: -20 to +55°C (no freezing) Operating humidity: 45 to 80% RH (no condensation) Storage temperature: -45 to +80°C
Degree of Protection	Storage humidity: 95% RH maximum From Pan front: IP65 (IEC 60529) Contact block: IP20 (IEC 60529)
Insulation Resistance	100M
Dielectric Strength	3500V, 1 minute
Vibration Resistance	Operating extremes: 5 to 55 Hz, amplitude 0.5mm Damage limits: 30Hz, amplitude 1.5mm
Shock Resistance	Operating extremes: 100 m/s ² Damage limits: 1000 m/s ²
Mechanical Life	< and illuminated pushbutton> Momentary: 5,000,000 operations minimum maintained: 250,000 operations minimum
Electrical Life	<Selector switch> 250,000 operations minimum Pushbutton; 100,000 operations minimum Selector switch: 100,000 operations minimum



Incandescent Lamp Ratings:

Unit	A (minimum)	B (minimum)
Pushbutton Selector Switch	50mm	30mm
Mushroom Pushbutton	50mm	40mm
Pilot Light	30mm	30mm



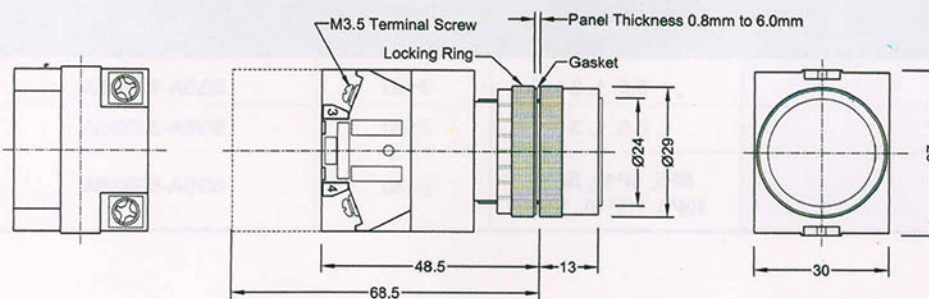
Pushbutton Flush Type

KM-ABW101 (closed), KM-ABW110 (open)

Product code	Operation	Contact	Button Color Code
ABW 110	Momentary	1 NO	B (Black) G (Green) R (Red) Y (Yellow)
ABW 101		1 NC	
ABW 411	Emergency Push Button	1 NO	Red
AVV 401	Emergency Push Button	1 NC	Red



KM-ABW 411



KM-ABW 110/101

Pilot Light

Product code	Diameter	Vol	Color
APL24	22MM	24V	G (Green), R (Red), Y (Yellow)
APL230	22MM	230V	G (Green), R (Red), Y (Yellow), B (Blue), W (White)
APL2416	16MM	24V	G (Green), R (Red), Y (Yellow)



KM-APL 230/24

Selector Switch

Product code	No. of Position	Contact Configuration	Contact Block Mounting Position		Operator Position		
					1	2	3
ASW 210	90° 2-position 	1 NO (10)	①	NO			
			②			●	
ASW 320	45° 3-position 	2 NO (20)	①	NO	●		
			②				
			③	NO			



KM-ASW 210/320



**KM-CT103, KM-CT5T15,
KM-CT105, KM-CT101**

Measuring Current Transformer (Ring Type)

General

A comprehensive range of Current Transformers for measuring and protective applications. Three types are available: the **Tape Wound Ring Type**, **Encapsulated Type** and the **Cast Resin Type**. In Compliance to IEC 60044-1.

Transformers' functions are:

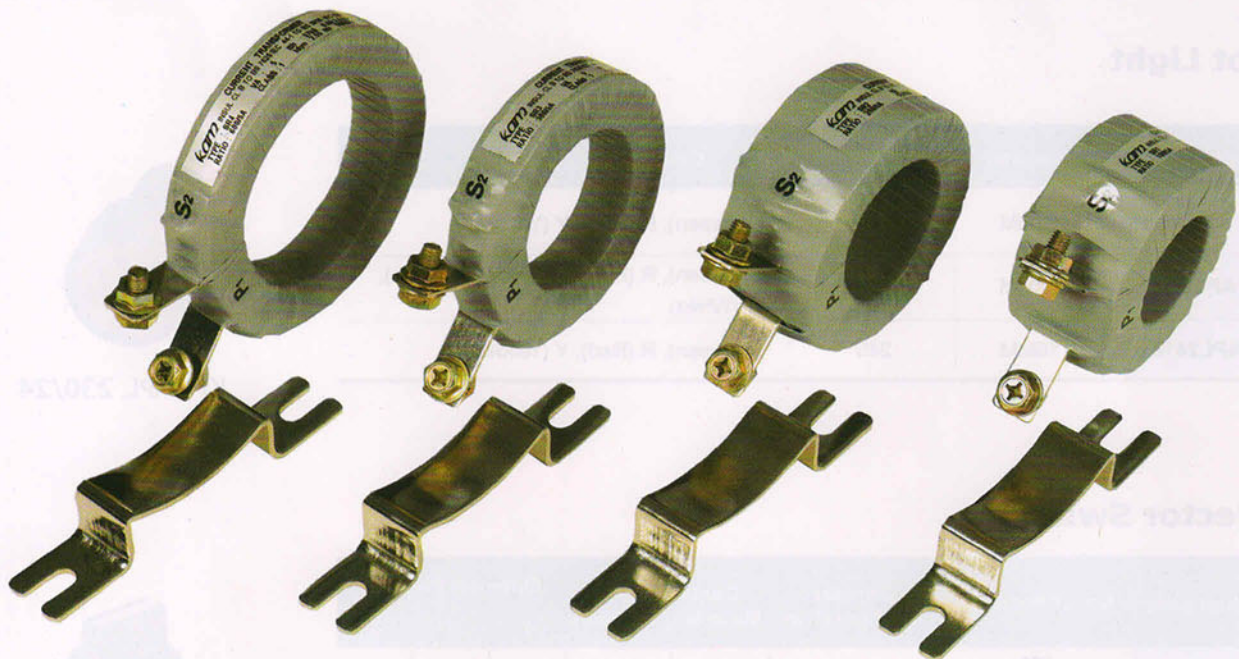
Isolation and separation of circuits and equipment for measuring, protection etc, from high voltage power lines.

To avoid disturbances due to carrying high currents

Reduction of short-circuit currents up to admissible values for sensitive protection and measuring equipment.

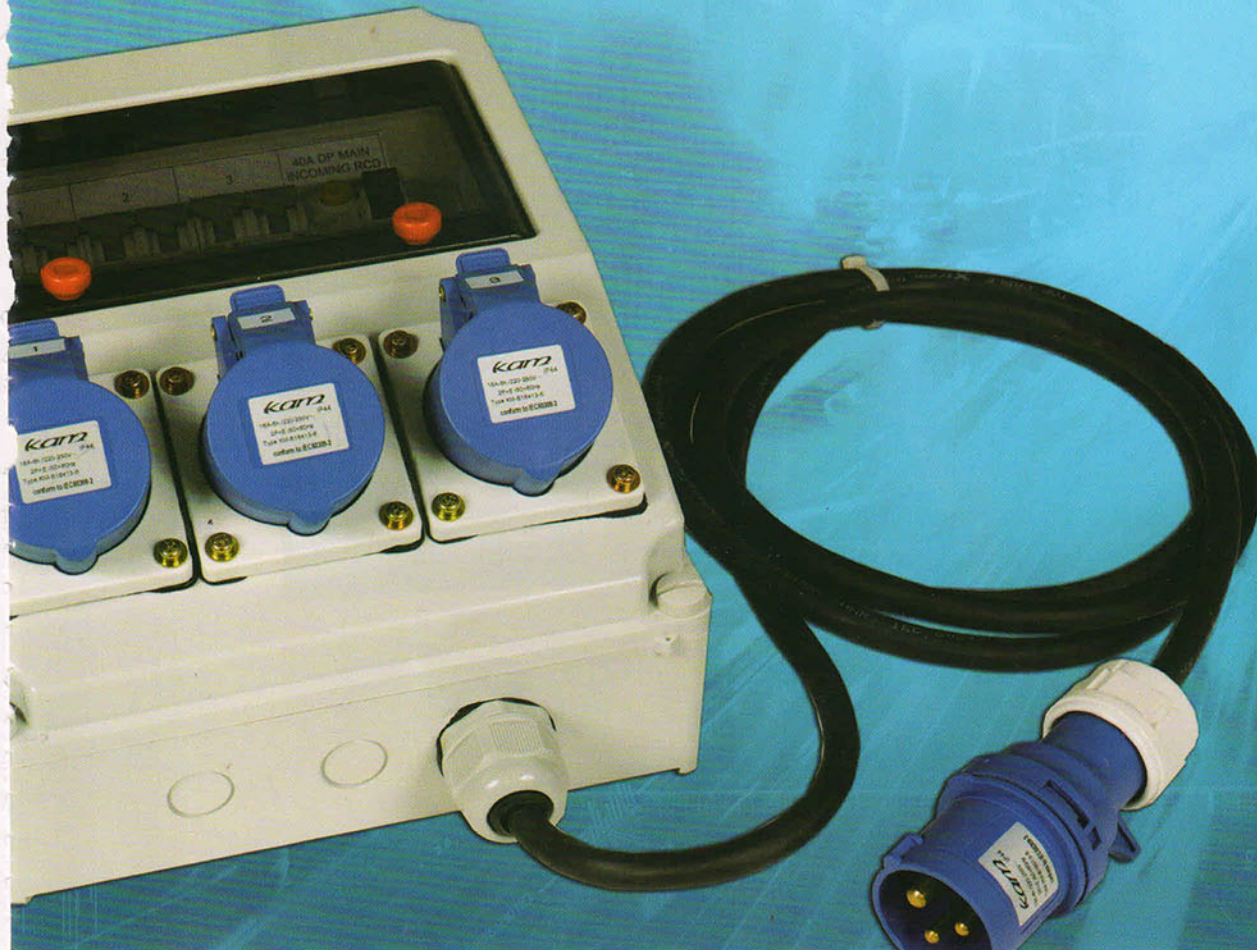
To obtain currents and voltage values proportional to those wanted to be measured or monitored in order to be sent to appropriate measuring instruments.

Type	Class	Burden VA	Range
Encapsulated - measuring	0.5, 1, 3	3~30	60/5A-3200/5A
Tape wound ring - measuring	0.5, 1, 3	3~30	60/5A-3200/5A
Tape wound ring - protection	5P5, 5P10, 5P20, 10P5, 10P10, 10P15	5~30	60/5A-5000/5A



kamTM

- Metal-Clad Consumer Units (MCU)
- Distribution Box
 - Metal Enclosure
 - PVC Enclosure
- Polycarbonate Enclosures (Consumer Unit)
- Hensel Cable Junction Box



Enclosures



Metal-Clad Consumer Units (MCU)

The Surface type Metal-Clad Consumer Unit consists of 6 different sizes from ME-MCU-10 to ME-MCU-80 and the Flush type Metal-Clad Consumer Unit consists of 6 different sizes from ME-MCU-10F to ME-MCU-80F.

The Metal-Clad Consumer Unit is designed and manufactured in accordance with IEC 60439-1 standards. It serves as power receiving, feeding, metering and lighting in residential buildings. Our metal-Clad Consumer Units are designed with complete Knock-Down (CKD) system which is easier for assembly, installation and wiring.

All Metal-Clad Consumer Unit are complete with Neutral link and earth bar. Opening for the cable entry can be arranged in top and bottom of the unit.

- Degree of protection IP42
- Power coated RAL 7035 (Grey)
- Reversible door for left/right opening



Enclosures



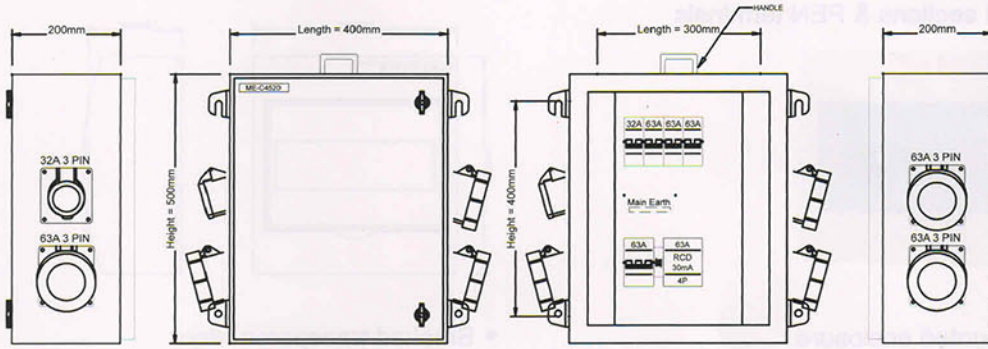
Distribution Box

- Variety selection of socket ranging from 16~125A, 3-5P (SOC Types IP44/IP67) as for incoming or outgoing socket
 - Detail on socket selection can refer to connection accessories (industrial plug and socket)
 - Come with MCB 10kA Type C and RCD (KAM)
 - Handle can be included for easy carry
 - Special design on the size of the enclosure upon request
-
- Type of distribution box: PVC ENCLOSURE

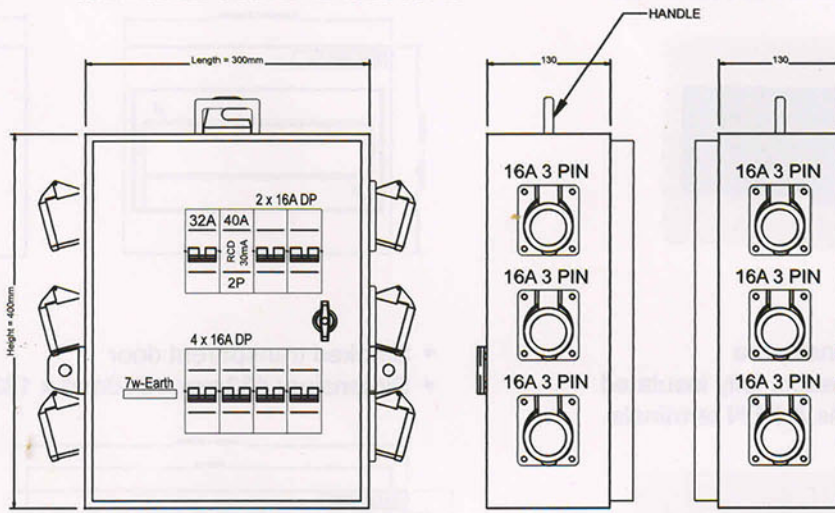




Distribution Box (Metal Enclosure)

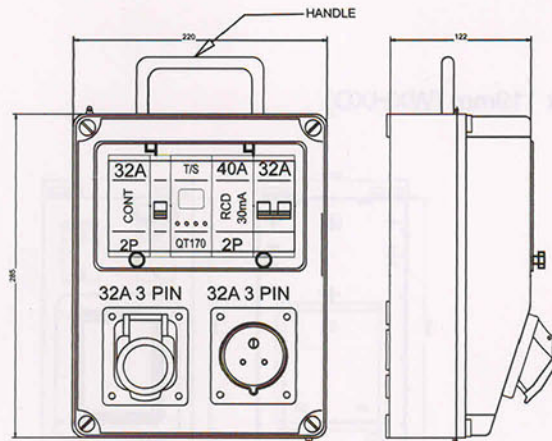


63A MOBILE SOCKET ENCLOSURE



32A MOBILE SOCKET ENCLOSURE

Distribution Box (PVC Enclosure)



32A DB



Test Terminal & PUB Indicator Light

KM-VTTB, KM-APPL

Kam's Test Terminal can be used for testing a wide range of electrical equipment including metering installations to facilitate site-testing of polyphase meters and protective relays, without disturbing the normal load circuit.

Features

- Glossy black-colored finishing moulded bakelite
- Terminal arrangements cover a wide range of applications. Current rating: 50 amps
- Front & back connected types
- All terminals and screws are plated brass
- Moulded insulation barriers between sets of terminals
- Link facilitates for testing purposes

Case/Cover

Designed for protection mounting on switchboards or panels, terminals blocks can be supplied with front or back connection terminals.

The cover is secured by two knurled nuts which can be sealed to prevent unauthorised access.

Two detachable strips are fitted into the upper and lower edges of the terminal cover. These strips can be reversed to allow the cover to be in place during tests.

Terminal Arrangement

The test terminal block is provided with 13 terminals each with 6mm (1/4") diameter holes. It consists of 3 groups of current terminals and 4 voltage terminals.

Each group of current terminals shall consist of 3 terminals with inter-terminal sorting links for the short-circuiting of the current transformers secondaries that are connected to the terminals.

This is necessary for the purpose of insertion of check meters and for portable current injection test set. Connections are possible from both ends of the terminals. Blanking strips are provided to prevent unauthorised entry to the terminals when the cover is sealed.

Electrical Characteristics

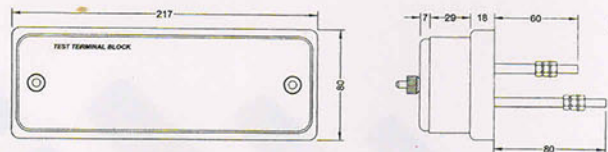
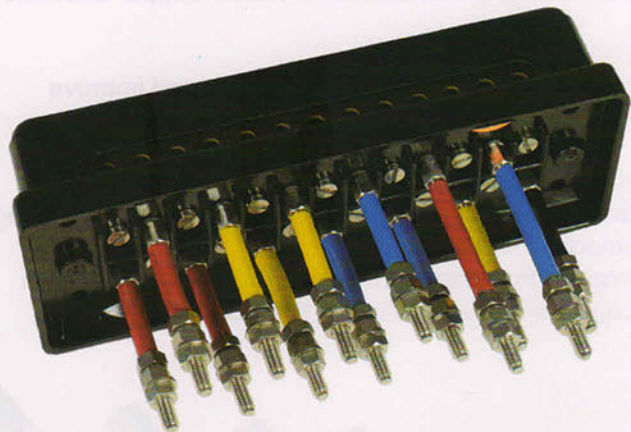
Voltage insulation level: 660 volts

Mounting

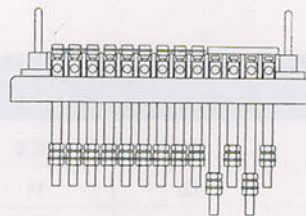
It is suitable for protection/surface mounting

Phase Barriers

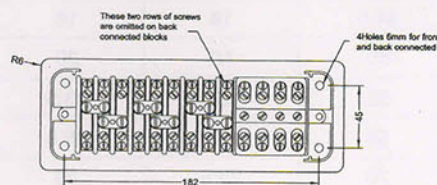
Each terminals shall be separated by phase barriers, moulded integrally with the base of the terminal block. The voltage terminal is shrouded in moulded bakelite.



Section View



Top View



KM-APPL





Comb Busbar

KM-VKE, KM-VKD

The multi-comb bars are used as the main busbars for 3 Poles or 1 Pole MCB to IEC 898 dimension fitted in Load Centre or Distribution Board. The busbars are insulated throughout its entire length. Its advantages are that it is compact in size therefore save space, replaces hard wiring therefore save cost and increase volume. 100A 3 Phase with 40A outgoing. Available in 6, 9, 12, 15, 18, 21, 24, 27 & 30 ways with incoming terminals. 69 ways is available but without incoming terminals.

Advantages

- High conductivity copper busbar used.
- Convenient & quick for assembly, save time & labour cost
- Terminals to receive incoming cables are available
- Withstand insulation voltage upto 3.5kV for 1 min
- Compact and rigid in size, occupies very small space

Specification

Busbar material	Copper
Rated operational voltage	240/415V
Rated operational current	100A

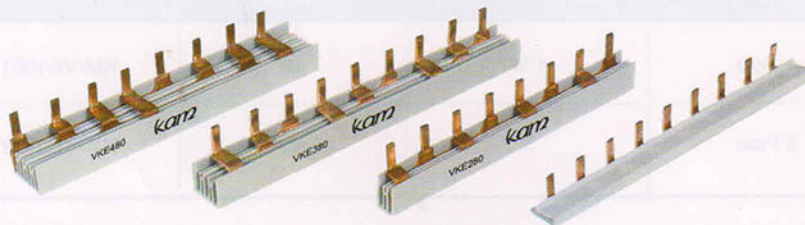
Comb busbar is available for specialist applications and can be supplied in both pin and fork type formats.

Comb busbar supplied in 1 metre lengths.

Comb Busbar End Covers for DP, TP & FP busbar configuration, supplied in packs of 10.

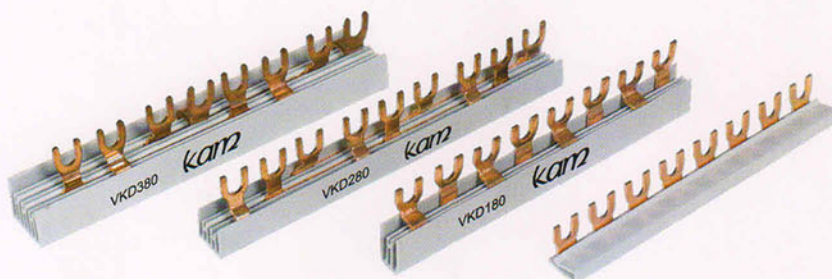
Insulated Busbars - prong

Description	Section In	Width module	Pack Qty	Order code	
1 Pole, 1 Step Insulated	20	100A	56	10	KM-VKE190
2 Pole, 2 Step Insulated	16	80A	56	10	KM-VKE280
3 Pole, 3 Step Insulated	16	80A	54	10	KM-VKE380
4 Pole, 4 Step Insulated	16	80A	56	10	KM-VKE480



Insulated Busbars - fork

Description	Section In	Width module	Pack Qty	Order code	
1 Pole, 1 Step Insulated	20	100A	56	10	KM-VKD190
2 Pole, 2 Step Insulated	20	80A	56	10	KM-VKD280
3 Pole, 3 Step Insulated	20	80A	54	10	KM-VKD380
4 Pole, 4 Step Insulated	20	80A	56	10	KM-VKD480





Connection Blocks

KM-VC

Application

Connection blocks 1 to 35 to connect incoming cables and continue live feed.

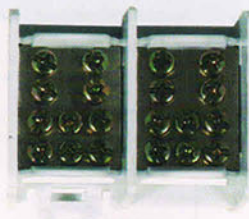
Specification

Connection	Incoming: 2 x 25mm or 2 x 35mm Outgoing 16mm or 25mm
Mounting	Fixing on DIN Rail
Connection locks include	One insulated support, brass connection and cover
Standard	IEC 998-2-1
Rated current	100A
Rated voltage	500V
Max. cable size	35mm



KM-VC1001

Designation	Characteristics	Width in 17.5mm	Pack Qty	Order code
Connection Blocks Connection on each pole incoming: 2 x 35mm 3 separate outgoing ways: 16mm	1 Pole	1 ¾	20	KM-VC1001
	2 Pole	3	10	KM-VC1002



KM-VC1002



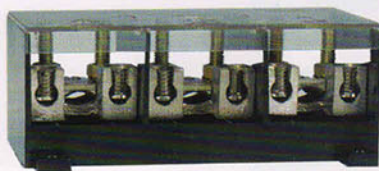
Branching Connectors

KM-VTD

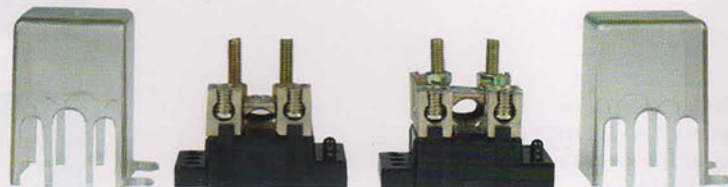
The branching connection clamps are mounted over an insulated base and protected by a sealed, transparent, caps, both are made of self-extinguishable polycarbonate. They can be linked and remain fixed by M5 bolts, in addition to having the advantage of being able to complete the connections among the principal conductors and the branching of independent form. This wide range of clamps allows the connection of 1 or 2 principal conductors to 2 or 4 branch conductors, offering great flexibility and comfort at the time of finishing installations with electric connections of this type.

Technical characteristics:

- Recovered in tin with a minimum thickness of 6 microns at all point
- The bimetallic connection clamps are entirely fabricated in copper alloy.
The insulated part of the branching clamps is fabricated in auto extinguishable polycarbonate.

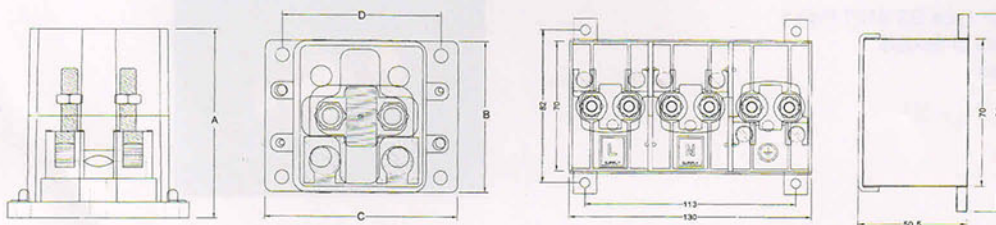


KM-VTDH



KM-VTD

Model	Section mm.						Dimensions mm.			
	Principal			Branchings			A	B	C	D
	Num.	Max.	Min.	Num.	Max.	Min.				
KM-VTD B2-95	1	95	10	2	25	2.5	75	50	67	55
KM-VTD B2-150	1	150	16	2	50	6	90	61	78	65
KM-VTD B2-240	1	240	50	2	95	6	120	85	112	92
KM-VTD2B2-95	2	95	10	2	25	2.5	75	50	67	55
KM-VTD2B2-150	2	150	16	2	50	6	90	61	78	65
KM-VTD2B2-240	2	240	50	2	95	6	120	85	112	92
KM-VTD B4-95	1	95	10	4	25	2.5	75	50	67	55
KM-VTD B4-150	1	150	16	4	50	6	90	61	78	65
KM-VTD B4-240	1	240	50	4	95	6	120	85	112	92
KM-VTD2B4-95	2	95	10	4	25	2.5	75	50	67	55
KM-VTD2B4-150	2	150	16	4	50	6	90	61	78	65
KM-VTD2B4-240	2	240	50	4	95	6	120	85	112	92





Industrial Plugs and Sockets

- In compliance with IEC 60309-2 standards
- SOC included flush-mounting socket-outlet, low voltage from 50V up to 690V
- SOC types (IP44) spring lid & (IP67) spring lid with locking ring and gasket.

Plugs

Poles	Hr Pos.	Voltage	Ampere
2P+E	4	100/130V	16
2P+E	6	200/250V	16
3P+E	6	380/415V	16
3P+N+E	6	380/415V	16
2P+E	4	100/130V	32
2P+E	6	200/250V	32
3P+E	6	380/415V	32
3P+N+E	6	380/415V	32

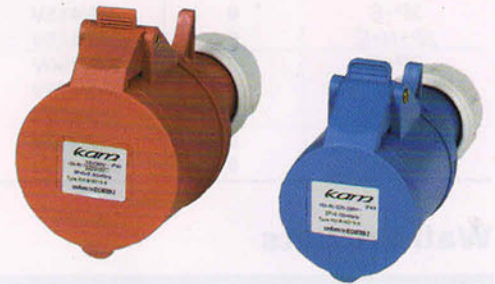
IP44



Connectors

Poles	Hr Pos.	Voltage	Ampere
2P+E	4	100/130V	16
2P+E	6	200/250V	16
3P+E	6	380/415V	16
3P+N+E	6	380/415V	16
2P+E	4	100/130V	32
2P+E	6	200/250V	32
3P+E	6	380/415V	32
3P+N+E	6	380/415V	32

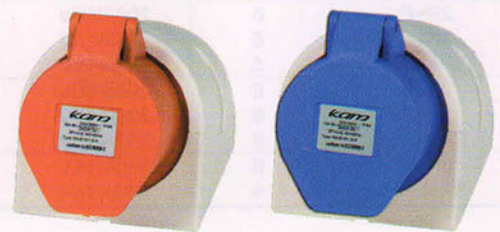
IP44



Wall Sockets

Poles	Hr Pos.	Voltage	Ampere
2P+E	4	100/130V	16
2P+E	6	200/250V	16
3P+E	6	380/415V	16
3P+N+E	6	380/415V	16
2P+E	4	100/130V	32
2P+E	6	200/250V	32
3P+E	6	380/415V	32
3P+N+E	6	380/415V	32

IP44



Panel Sockets

Poles	Hr Pos.	Voltage	Ampere
2P+E	4	100/130V	16
2P+E	6	200/250V	16
3P+E	6	380/415V	16
3P+N+E	6	380/415V	16
2P+E	4	100/130V	32
2P+E	6	200/250V	32
3P+E	6	380/415V	32
3P+N+E	6	380/415V	32

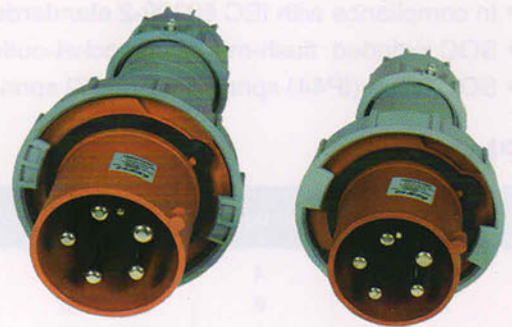
IP44





Plugs

Poles	Hr Pos.	Voltage	Ampere
2P+E	6	200/250V	16
3P+E	6	380/415V	16
3P+N+E	6	380/415V	16
2P+E	6	200/250V	32
3P+E	6	380/415V	32
3P+N+E	6	380/415V	32
2P+E	6	200/250V	63
3P+E	6	380/415V	63
3P+N+E	6	380/415V	63
3P+E	6	380/415V	125
3P+N+E	6	380/415V	125



IP67

Connectors

Poles	Hr Pos.	Voltage	Ampere
2P+E	6	200/250V	16
3P+E	6	380/415V	16
3P+N+E	6	380/415V	16
2P+E	6	200/250V	32
3P+E	6	380/415V	32
3P+N+E	6	380/415V	32
2P+E	6	200/250V	63
3P+E	6	380/415V	63
3P+N+E	6	380/415V	63
3P+E	6	380/415V	125
3P+N+E	6	380/415V	125



IP67

Wall Sockets

Poles	Hr Pos.	Voltage	Ampere
2P+E	6	200/250V	16
3P+E	6	380/415V	16
3P+N+E	6	380/415V	16
2P+E	6	200/250V	32
3P+E	6	380/415V	32
3P+N+E	6	380/415V	32
2P+E	6	200/250V	63
3P+E	6	380/415V	63
3P+N+E	6	380/415V	63
3P+E	6	380/415V	125
3P+N+E	6	380/415V	125



IP67

Panel Sockets

Poles	Hr Pos.	Voltage	Ampere
2P+E	6	200/250V	16
3P+E	6	380/415V	16
3P+N+E	6	380/415V	16
2P+E	6	200/250V	32
3P+E	6	380/415V	32
3P+N+E	6	380/415V	32
2P+E	6	200/250V	63
3P+E	6	380/415V	63
3P+N+E	6	380/415V	63
3P+E	6	380/415V	125
3P+N+E	6	380/415V	125



IP67

KamTM

- Thermostats
- Small Semiconductor Heater
- Busbar Support
- Dinrail (Cold rolled steel)
- Perspect
- Neutral Break
- Alarm Bell
- Spring Clamp
- Separator
- Electrode Holder
- Electrode
- Terminal Block

KAM
KM-OS-3S
ELECTRODE HOLDER



Panel Accessories



Thermostats

Features

- Simple to mount
- Large setting range
- Small size

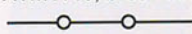
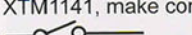
(A) XTM1140 (Thermostat for heater)

Thermostat (normally closed) contact breaker for regulating heaters.
Option on 30 watt heater and 55 watt heater.

(B) XTM1141 (Thermostat for fan)

Thermostat (normally open) contact maker for regulation of filter fans and heat exchangers or for switching signal transmitters when temperature limit has been executed.
Option on 4" fan & 6" fan.

SPECIFICATION - XTM1140, XTM1141

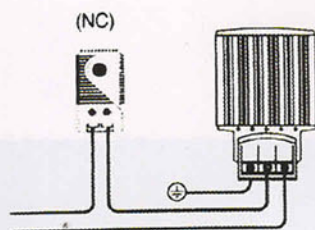
Sensor element	Thermostatic bimetal
Temperature range	Adjustable 0 ~ 60°C Temperature switch difference approx. 7K
Contact type	Break or Make Snap action contact
Breaking capacity	XTM1140, break contact: 6A (1) 250V AC  XTM1141, make contact: 6A (1) 250V AC 
Interference suppression grade	N (VDE 0875)
Connections	2 pole terminal 2.5mm ²
Mounting	Clip for 35mm Din rail (EN 50022) integrated
Dimensions	60 x 33 x 35mm (H x W x D)
Casing	Plastic, UI94 V0
Weight	36g
Protection type	IP20



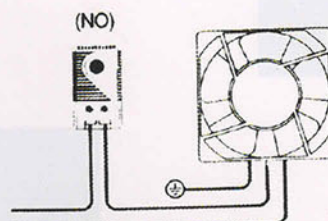
XTM1140 (heater)



XTM1141 (fan)



Heater



e.g. Fan



Terminal Blocks (with Finger Protection Cover)

Type: IN13BK-C

Rated voltage:	600V
Rated current:	20A
Dielectric Strength:	2500V, 1min
Insulation Resistance:	100M Ω min
Applicable Wire:	2mm ² max
Circuits Poles:	3 poles



Type: IN20BK-C

Rated voltage:	600V
Rated current:	30A
Dielectric Strength:	2500V, 1min
Insulation Resistance:	100M Ω min
Applicable Wire:	3.5mm ² max
Circuits Poles:	3 poles



Type: IN30BK-C

Rated voltage:	600V
Rated current:	50A
Dielectric Strength:	2500V, 1min
Insulation Resistance:	100M Ω min
Applicable Wire:	8mm ² max
Circuits Poles:	3 poles



Type: IN411SB-C

Rated voltage:	600V
Rated current:	50A
Dielectric Strength:	2500V, 1min
Insulation Resistance:	100M Ω min
Applicable Wire:	14mm ² max
Circuits Poles:	1 pole



Type: IN60BK-C

Rated voltage:	600V
Rated current:	90A
Dielectric Strength:	2500V, 1min
Insulation Resistance:	100M Ω min
Applicable Wire:	22mm ² max
Circuits Poles:	1 pole



Type: IN100K-C

Rated voltage:	600V
Rated current:	130A
Dielectric Strength:	2500V, 1min
Insulation Resistance:	100M Ω min
Applicable Wire:	38mm ² max
Circuits Poles:	1 pole



Type: IN200K-C

Rated voltage:	600V
Rated current:	240A
Dielectric Strength:	2500V, 1min
Insulation Resistance:	100M Ω min
Applicable Wire:	100mm ² max
Circuits Poles:	1 pole

