MITSUBISHI ELECTRIC

Changes for the Better

for a greener tomorrow

MINIATURE CIRCUIT BREAKERS, RESIDUAL CURRENT CIRCUIT BREAKERS & ISOLATING SWITCHES

DIN Series

Empowering Industries

13 A

Breaking Through The

Introducing the DIN Series...

High-quality, high-performance circuit breakers suitable for household electrical distribution panels

DIN Series

Industry

INDEX

Features

(1) All models fully comply with IEC regulations

(2) Units can be mounted on a standard IEC 35mm rail

(3) High current-limiting performance

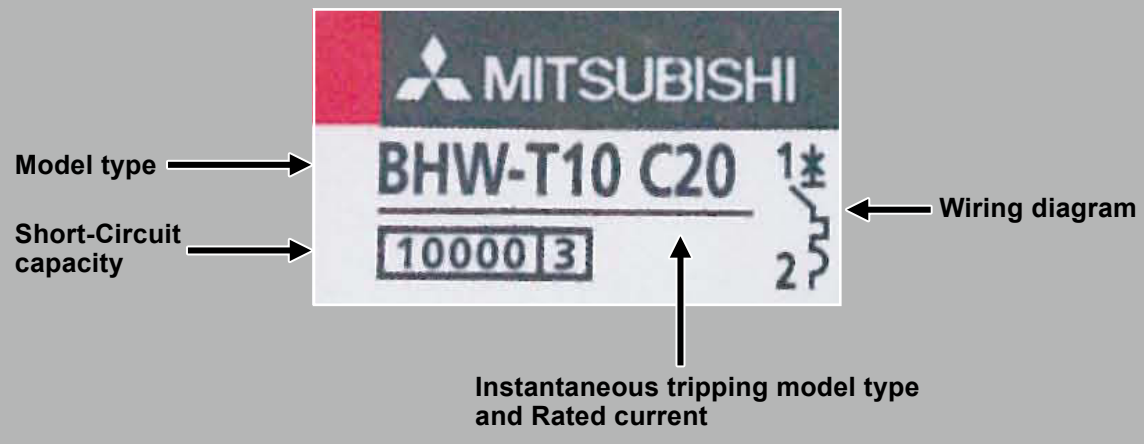
(4) Compliance with IP2X protection rating (front surface)

(5) All models are compatible with reverse connection

Product Line-up

Model type		No of poles (P)	Rating	Instantaneous tripping	Voltage (V)	Short-Circuit capacity (kA)	Compliance standard
MCB	BHW-T10	1, 1+N, 2, 3, 3+N, 4	6 to 63A	TYPE B	240/415AC	10	IEC 60898-1
		1, 1+N, 2, 3, 3+N, 4	0.5 to 63A	TYPE C, D	240/415AC		IEC 60898-1
RCCB	BVW-T	2(1+N), 4(3+N)	16 to 63A	–	240/415AC	–	IEC 61008-1
Isolating Switch	KBW-T	1, 2, 3, 4	25, 40, 63A	–	240/415AC	–	IEC 60947-3
		2, 3, 4	80, 100, 125A	–	240/415AC	–	IEC 60947-3

Explanation of Markings (Example Model Type : BHW-T10)



Technical Specifications

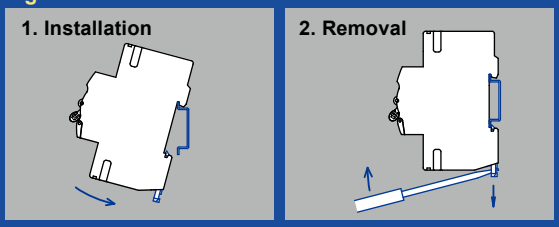
Ambient temperature range	-10 to +40℃
Frequency	50/60Hz

Points to Note

1 Installation

Standard IEC 35mm rail installation is possible.
Fix by attaching a slip stopper.

Fig-1



2 Connection

At the time of wire connection, fasten the terminal screws with the torque stated in the table below.

Fastening torque

Screw diameter	Fastening torque (N·m)	Model type
M5	2	BHW-T10, BVW-T, KBW-T(25 to 63A), Shunt trip
M6	2.5	KBW-T(80 to 125A)

3 Opening, Closing and Tripping Operations

Move the handle up/down to turn power On/Off. Tripping operation refers to automatic opening (breaking) of circuits.

4 Earth-leakage Test

Earth-leakage test steps:

(1) Move the handle to the On position under rated voltage.
(2) Push the yellow test button.
* Please conduct the above test regularly.
* Do not use the test button to switch off the RCCB.
(3) At this time, the RCCB must be tripped within the specified time.
(4) The handle will move to the Off position.

5 Withstand Voltage Test

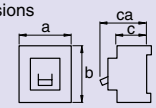
(1) Withstand voltage test: The voltage applied to the main circuit during the withstand voltage test is 2,000VAC (effective for 1min). Do not conduct a withstand voltage tests using voltages exceeding 2,000VAC.
(2) Measurement of insulation resistance and withstand voltage test
Please note the following restrictions (① and ② below) that apply when using earth-leakage circuit breakers.

① Measuring insulation resistance:
– Do not use a 1000V insulation resistance tester. Please use a 500V insulation resistance tester.
– The "▲" marks in the table are based on minimum insulation resistance values.

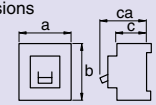
② Testing withstand voltage: The "×" marks in the table below indicate that the test voltage is not to be applied to that model. (If a test voltage is accidently applied to one of these models, do not reuse the product regardless of whether or not they were tripped.)

Measuring position / Test				Insulation resistance measurement		Withstand voltage test	
Handle position				ON	OFF	ON	OFF
Between main circuit live part and ground				○	○	○	○
Between different poles	On line side	BVW-T 2P		▲	○	×	○
		BVW-T 4P	Between right pole (terminal symbol 6) and N pole	▲	○	×	○
			Between poles other than above	○	○	○	○
	On load side	BVW-T 2P		▲	▲	×	×
		BVW-T 4P	Between right pole (terminal symbol 6) and N pole	▲	▲	×	×
			Between poles other than above	○	○	○	○
Between terminals on line side and load side				–	○	–	○

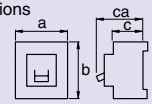
Specifications

				MCB											
Type				BHW-T10											
Image															
No. of poles [P]				1	1+N*1	2	3	3+N*1	4	1	1+N*1	2	3	3+N*1	4
Instantaneous tripping				Type B*2						Type C, D*2					
Rated insulation voltage U_i [V]				660						660					
Rated current I_n [A] at ambient temperature 30℃				6, 10, 16, 20, 25, 32, 40, 50, 63						0.5, 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63					
Rated short-circuit capacity [kA]	IEC/EN 60898-1 (Icn)	AC	240V	10						10					
			240/415V	10	–	10				10	–	10			
			415V	–		10				–		10			
Energy limiting class*3				Class 3											
Number of operating cycles	Without current			4,000											
	With current			4,000											
Dimensions [mm] 	a			18	36		54	72		18	36		54	72	
	b			92.6											
	c			44											
	ca			Max. 73.5											
Type of overcurrent release				Thermal-magnetic											
Mounting				IEC 35mm rail											
Applicable wire size				1 to 25mm^2											
Mass [kg]				0.13	0.25	0.26	0.39	0.51	0.52	0.13	0.25	0.26	0.39	0.51	0.52
Accessories (optional)*4	Auxiliary switch (AX)			○											
	Shunt trip (SHT)			○											
Terminal connection				Solderless											
Based on standard				IEC/EN 60898-1											
CE marking				○											

*1: N pole is a switched neutral pole (without overcurrent release device).
*2: Type B: (3 I_n <, ≦ 5 I_n), Type C: (5 I_n <, ≦ 10 I_n), Type D: (10 I_n <, ≦ 20 I_n)
*3: Except for Type D
*4: Factory fitted
*5: In case of installing breakers side by side, reduce the passing current to under 80% of the rated current.

			RCCB	
Type			BVW-T	
Image				
No. of poles [P]			2(1+N)*1	4(3+N)*1
Rated current I_n [A] at ambient temperature 30℃			16, 25, 32, 40, 63	
Rated voltage [VAC]			240	415
Rated current sensitivity $I_{\Delta n}$ [mA]			30, 100, 300	
Max. operating time at 5 $I_{\Delta n}$ [s]			0.04	
Pulsating current sensitivity			Type AC	
Dimensions [mm] 	a		36	72
	b		90	
	c		44	
	ca		74	
Rated making and breaking capacity I_m [A]			500(In 16, 25, 32, 40A), 630(In 63A)	
Rated conditional short-circuit current I_{nc} [kA]			6	
Rated residual making and breaking capacity $I_{\Delta m}$ [A]			500(In 16, 25, 32, 40A), 630(In 63A)	
Rated conditional residual short-circuit current $I_{\Delta c}$ [kA]			6	
Number of operating cycles	Without current		4,000*2	
	With current		2,000	
Type of overcurrent release			–	
Mounting			IEC 35mm rail	
Applicable wire size			1 to 25mm^2	
Mass [kg]			0.22	0.44
Terminal connection			Solderless	
Based on standard			IEC/EN 61008-1	
CE marking			○	

*1: N pole is a switched neutral pole (without overcurrent release device).
*2: In case of ampere rating 32, 40 and 63A, the number of operating cycles is 3,000.

			Isolating switch						
Type			KBW-T						
Image									
No. of poles [P]			1	2	3	4	2	3	4
Utilization category			AC-22A				AC-22A		
Rated current I_n [A] at ambient temperature 30℃			25, 40, 63				80, 100, 125		
Rated voltage [VAC]			240	240/415			240/415		
Short time withstand current I_{cw} [A]			12×In, 1s				12×In, 1s		
Short-circuit making capacity I_{cm} [A]			12×In				12×In		
Rated impulse withstand voltage Uimp [kV]			6				6		
Pollution degree			2				2		
Dimensions [mm] 	a		18	36	54	72	36	54	72
	b		92.6				92.6		
	c		44				44		
	ca		Max. 73.5				Max. 73.5		
Number of operating cycles	Without current		10,000				10,000 8,000(125A)		
	With current		1,500				1,500 1,000(125A)		
Mounting			IEC 35mm rail				IEC 35mm rail		
Applicable wire size			1 to 25mm^2				16 to 50mm^2		
Mass [kg]			0.12	0.22	0.33	0.47	0.2	0.3	0.4
Terminal connection			Solderless				Solderless		
Based on standard			IEC/EN 60947-3				IEC/EN 60947-3		
CE marking			○				○		

Accessories

Functions of Accessories

Internal accessory	Function
AX Auxiliary switch	Electrically indicates the On/Off status of the circuit breaker.
SHT Shunt trip	Electrically trips the circuit breaker from a remote location. Permissible working voltage is 100% of the rated voltage.

Equipping of Accessories

Accessory \ Model name	BHW-T10	BVW-T, KBW-T
AX	○	–
SHT	○	–

○: Accessory equipment
–: Accessory not equipped

Specifications

Type		AX
Contact	Configuration	1A1B
	Contact capacity	220VAC 6A
Connection		Lead wire
Compliance standard		IEC 60947-5-1

Specifications

Type	SHT			
Cut-off switch	Equipped			
Voltage	12VDC	24VDC	48VDC	220VAC
Input power requirement	40	110	300	250
Operating time [ms]	<20			
Connection	Solderless			
Compliance standard	IEC 60947-1			

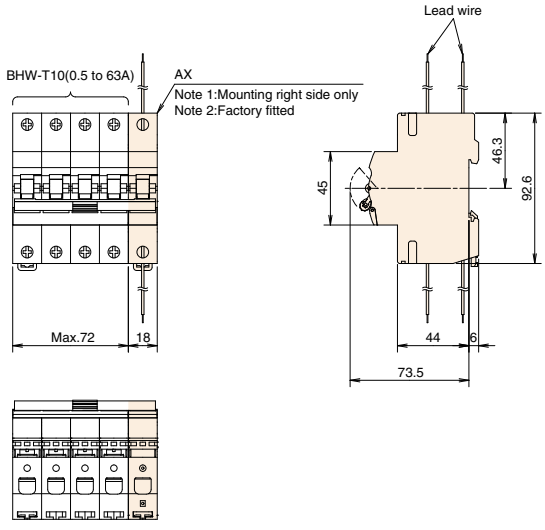
* Secure a sufficient input power supply so that the voltage will not drop below the permissible working voltage (100% of the rated voltage).
* The operating time denotes the time from when the rated voltage is applied to SHT until the time the main contact of the breaker starts to open.

Combinations of Accessories

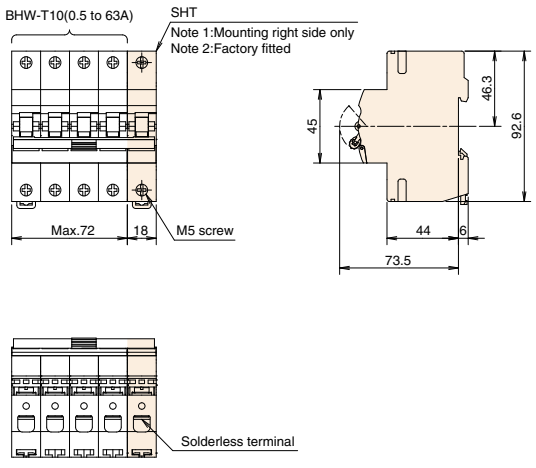
Accessory connection combinations	AX	
	SHT	

Outer Dimensions

BHW-T10 with AX



BHW-T10 with SHT



Characteristics and Dimensions

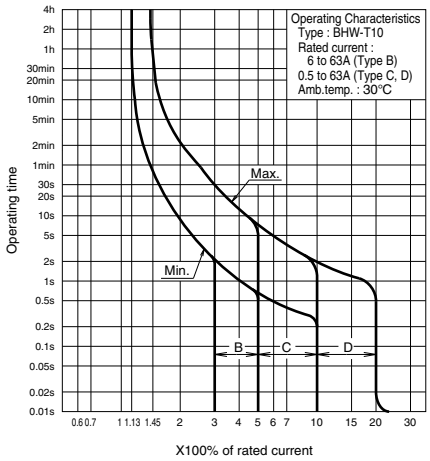
Miniature Circuit Breakers (MCB)

BHW-T10

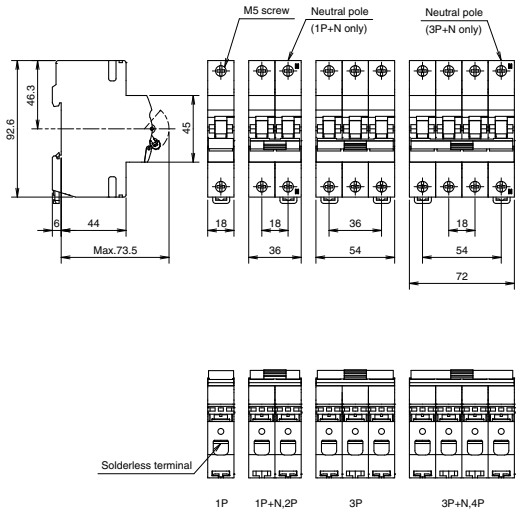
Type				BHW-T10											
No. of poles [P]				1	1+N*1	2	3	3+N*1	4	1	1+N*1	2	3	3+N*1	4
Instantaneous tripping				Type B						Type C, D					
Rated insulation voltage U_i [V]				660						660					
Rated current I_n [A] at ambient temperature 30℃				6, 10, 16, 20, 25, 32, 40, 50, 63						0.5, 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63					
Rated short-circuit capacity [kA]	IEC/EN 60898-1 (Icn)	AC	240V	10						10					
			240/415V	10	–	10				10	–	10			
			415V	–		10				–		10			

*1: N pole is a switched neutral pole (without overcurrent release device).

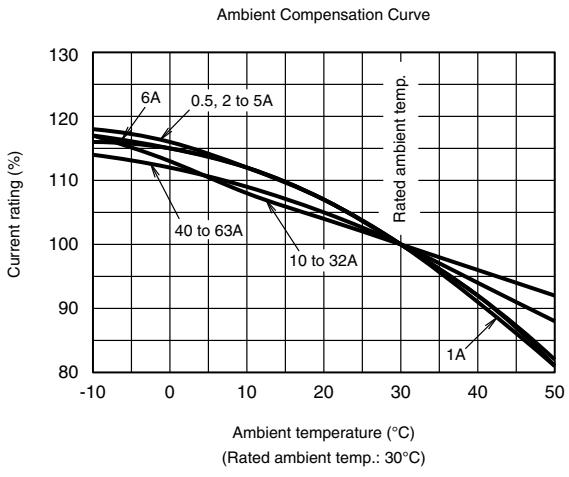
■Operating Characteristics



■Outer Dimensions



■Ambient Compensation Curve



* In case of installing breakers side by side, reduce the passing current to under 80% of the rated current.

Characteristics and Dimensions

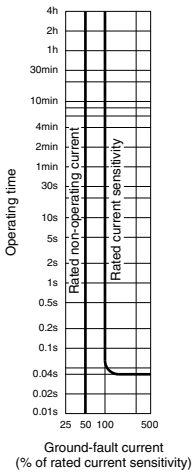
Residual Current Circuit Breakers (RCCB)

BVW-T

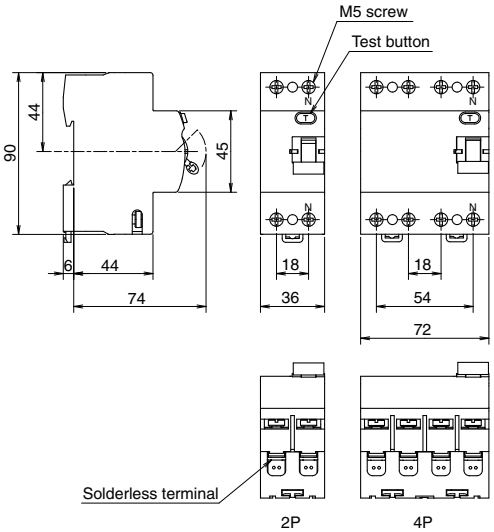
Type	BVW-T	
No. of poles [P]	2(1+N)*1	4(3+N)*1
Rated operational voltage Ue [AC V]	240	415
Rated current I_n [A] at ambient temperature 30℃	16, 25, 32, 40, 63	
Rated current sensitivity $I_{\Delta n}$ [mA]	30, 100, 300	
Max. operating time at 5 $I_{\Delta n}$ [s]	0.04	
Pulsating current sensitivity	Type AC	
Residual operation	Independent of line voltage	
Rated making and breaking capacity I_m [A]	500(In 16, 25, 32, 40A) 630(In 63A)	
Rated conditional short-circuit current I_{nc} [kA]	6	
Rated residual making and breaking capacity $I_{\Delta m}$ [A]	500(In 16, 25, 32, 40A) 630(In 63A)	
Rated conditional residual short-circuit current $I_{\Delta c}$ [kA]	6	

*1: N pole is a switched neutral pole (without overcurrent release device).

■Earth-Leakage Tripping Characteristics



■Outer Dimensions

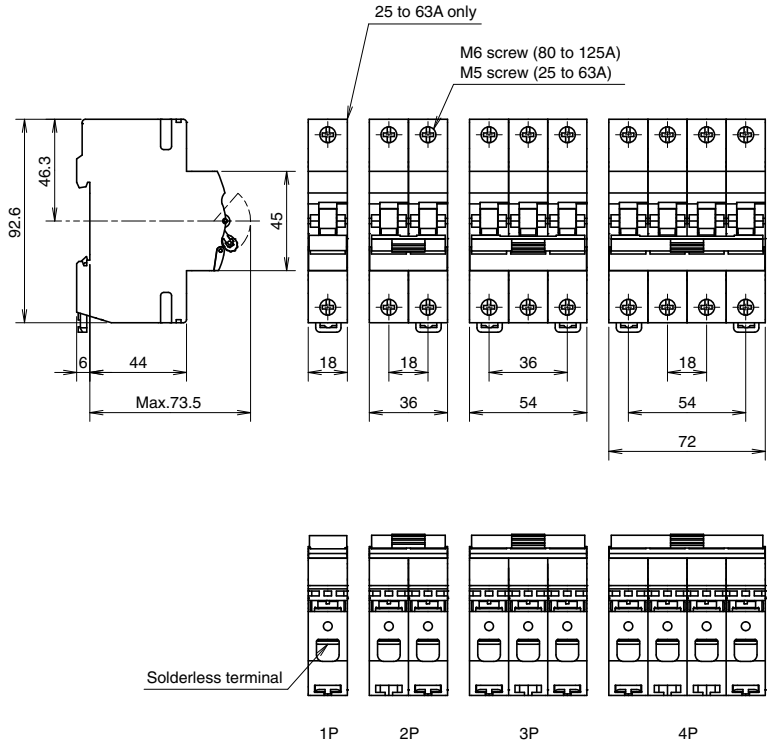


Characteristics and Dimensions
Isolating Switches

KBW-T

Type	KBW-T						
No. of poles [P]	1	2	3	4	2	3	4
Utilization category	AC-22A				AC-22A		
Rated insulation voltage U_i [V]	660				660		
Rated voltage Ue [VAC]	240	240/415			240/415		
Rated current I_n [A] at ambient temperature 30℃	25, 40, 63				80, 100, 125		
Short-time withstand current I_{cw} [A]	12×In, 1s				12×In, 1s		
Short-time making current I_{cm} [A]	12×In				12×In		

■Outer Dimensions



Ordering Information

Please specify items with ☐

Type name	Number of poles	Operating characteristics	Rated current	Internal accessory	Quantity
BHW-T10	1P	Type C	16A	SHT(12VDC)	12
↓	↓	↓	↓	↓	
BHW-T10	1P, 1P+N, 2P, 3P, 3P+N, 4P	Type B Type C Type D	0.5, 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63A	Shunt trip: SHT(12VDC), SHT(24VDC), SHT(48VDC), SHT(220VAC) Auxiliary switch: AX	

Type name	Number of poles	Rated current	Quantity
KBW-T	1P	63A	12
↓	↓	↓	
	1P, 2P, 3P, 4P	25, 40, 63, 80, 100, 125A	

Type name	Number of poles	Rated current	Rated sensitivity current	Quantity
BVW-T	2P	63A	30mA	6
↓	↓	↓	↓	
	2P, 4P	16, 25, 32, 40, 63A	30, 100, 300mA	

Information from Fukuyama Works

http://www.MitsubishiElectric.co.jp/haisei/lvs/

Four Key Features

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Israel	Gino Industries Ltd.	26, Ophir Street IL-32235 Haifa, Israel	+972 (0)4-867-0656
Italy	Mitsubishi Electric Europe B.V.	Viale Colleoni 7, Palazzo Sirio, I-20864 Agrate Brianza (MB), Italy	+39 039-60 53 1
Kazakhstan	TOO KAZPROMAVTOMA TIKA	UL. ZHAMBYLA 28, KAZ-100017 Karaganda, Kazakhstan	+7 7212 - 50 10 00
Lebanon	Comptoir d'Electricite Generale-Liban	Cebaco Center - Block A Autostrade Dora, P.O. Box 11-2597 Beirut - Lebanon	+961-1-240445
Lithuania	RIFAS UAB	Tinklu 29A, LT-5300 Panevezys, Lithuania	+370 (0)45-582-728
Malaysia	Mittric Sdn Bhd	No. 5 Jalan Pemberita U1/49, Temasya Industrial Park, Glenmarie 40150 Shah Alam, Selangor, Malaysia	+603-5569-3748
Malta	ALFATRADE LTD	99 Paola Hill, Malta-Paola PLA 1702, Malta	+356 (0)21-697-816
Netherlands	Imtech Marine & Offshore B.V.	Sluisjesdijk 155, NL-3087 AG Rotterdam, Netherlands	+31 (0)10-487-19 11
North America	Mitsubishi Electric Automation, Inc.	500 Corporate Woods Parkway, Vernon Hills, IL 60061 USA	+847-478-2100
Norway	Scanelec AS	Leirvikasen 43B, NO-5179 Godvik, Norway	+47 (0)55-50 60 00
Middle East Arab Countries & Cyprus	Comptoir d'Electricite Generale-International-S.A.L.	Cebaco Center - Block A Autostrade Dora P.O. Box 11-1314 Beirut - Lebanon	+961-1-240430
Poland	Mitsubishi Electric Europe B.V.	ul. Krakowska 50, PL-32-083 Balice, Poland	+48 (0) 12 630 47 00
Republic of Moldova	Intehsis SRL	bld. Traian 23/1, MD-2060 Kishinev, Moldova	+373 (0)22-66 4242
Romania	Sirius Trading & Services SRL	Aleea Lacul Morii Nr. 3, RO-060841 Bucuresti, Sector 6, Romania	+40-(0)21-430 40 06
Russia	Moscow Liaison Office	52, bld. 3 Kosmodamianskaya nab. 8 floor, RU-115054 Moscow, Russia	+7 495 721-2070
Saudi Arabia	Center of Electrical Goods	Al-Shuwayer St. Side way of Salahuddin Al-Ayoubi St. P.O. Box 15955 Riyadh 11454 - Saudi Arabia	+966-1-4770149
Singapore	Mitsubishi Electric Asia Pte. Ltd.	307 Alexandra Road, Mitsubishi Electric Building, Singapore 159943	
Slovakia	SIMAP s.r.o.	Jana Dorku 1671, SK-91101 Trench, Slovakia	+421 (0)32 743 04 72
Slovenia	INEA RBT d.o.o.	Stegne 11, SI-1000 Ljubljana, Slovenia	+386 (0)1-513 8116
Spain	Mitsubishi Electric Europe B.V.	Carretera de Rubí 76-80, E-08190 Sant Cugat del Vallés (Barcelona), Spain	+34 (0)93-565 3131
Sweden	Euro Energy Components AB	Järnvägsgatan 36, SE-434 24 Kungsbacka, Sweden	+46 (0)300-69 00 40
Switzerland	TRIELEC AG	Muehlentalstrasse 136, CH-8200 Schaffhausen, Switzerland	+41-(0)52-625 84 25
Turkey	Mitsubishi Electric Turkiye - Umraniye Subesi	Serifali Mahallesi Nutuk Sokak No.5, TR-34775 Umraniye - ISTANBUL, Turkey	+90 (0)216-526 39 90
United Kingdom	Mitsubishi Electric Europe B.V.	Travellers Lane, UK-Hatfield, Herts. AL10 8XB, United Kingdom	+44 (0)1707-28 87 80
Uruguay	Fierro Vignoli S.A.	Avda. Uruguay 1274, 11.100 Montevideo, Uruguay	+598-2-902-0808
Venezuela	Adesco S.A.	Calle 7 La Urbina Edificio Los Robles Locales C y D Planta Baja, Caracas - Venezuela	+58-212-241-9952
Vietnam	Mitsubishi Electric Vietnam Company Limited	Unit 01-04, 10th Floor, Vincom Center 72 Le Thanh Ton Street, District 1, Ho Chi Minh City, Vietnam	+84 (8) 3910-5945

For Safety : Please read the instruction manual carefully before using the products in this catalog. Wiring and connection must be done by the person have a specialized knowledge of electric construction and wiring.

eco Changes

for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

MITSUBISHI ELECTRIC CORPORATION

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