

TRABAJO PESADO

Heavy duty

Electronic voltage protector

Overview

The BREAKERMATIC HEAVY DUTY is designed to prevent damage to your 120V commercial or industrial equipment caused by voltage fluctuations. It connects via a power strip covered by a safety cap that prevents accidental contact with the terminals. It easily attaches to the wall or equipment chassis with a convenient bracket supplied with screws.

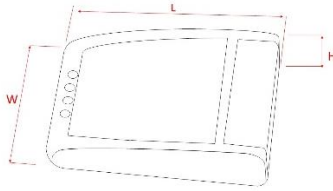
Operation

1. **Protection against steady-state voltage variations.** The BREAKERMATIC TRABAJA PESADO disconnects the output if the steady-state voltage is above the high cut-off voltage or below the low cut-off voltage. The response time for voltage variations is typically 1 s. The voltage must remain outside the range longer than the response time for the disconnection to be activated. While the fault persists, the corresponding high or low voltage indicator will remain illuminated.
2. **Models** The standard model has fixed cut-off voltages. The M Model has knobs to adjust the cut-off voltages.
3. **Reconnection delay or wait cycle.** Upon energizing the protector, or upon termination of a voltage fault, the protector will initiate a time delay before connecting the output. The time delay duration is typically 4 minutes. The wait cycle protects sensitive equipment from short operating cycles. For example, in the case of refrigeration or air conditioning equipment, it delays startup long enough to allow pressure equalization in the system.
4. **Blackout and Brownout detection.** The protector will disconnect the load if it detects a sudden voltage drop below 50% of the nominal voltage and will initiate a standby cycle. The response time of the blackout detector is instantaneous; the minimum blackout duration is specified in the specifications, but it is guaranteed to be greater than the maximum transfer time on distribution lines.

Models

Reference	Model	Nominal Voltage	Nominal amperage	Maximum load motores	Cut off voltages	Reconnection delay	Autostart	Response delay	On/Off Switch	Language
PBE110-000EST	TRABAJO PESADO	120VAC	30A	1 H.P.	93V – 140V	4 min	No	1.5s	No	Esp. – Ing.
PBE110-M00EST	TRABAJO PESADO M	120VAC	30A	1 H.P.	Ajustable	4 min	No	1.5s	No	Esp. – Ing.

Specifications

Electrical				
Nominal Voltage		120	VAC	
Nominal Frequency		50 - 60	Hz	
Steady state voltage protection				
		000	M	
Low cut-off voltage, minimum position		93 +/- 3%	80 +/- 3%	VAC
Low cut-off voltage, maximum position			114 +/- 3%	VAC
High cut-off voltage, minimum position		140 +/- 3%	114 +/- 3%	VAC
High cut-off voltage, maximum position			150 +/- 3%	VAC
Reconnection Hysteresis		5 - 10		VAC
Response delay		1 +/- 20%		s.
Standby Cycle				
Reconnection delay time		3:50 +/- 20%		Min:seg
Blackout detection				
Minimum blackout duration (0% nominal voltage)		32 -64		ms
Minimum brownout duration (50% nominal voltage)		>100		ms
Maximum load				
Maximum Resistive Load (cos φ = 1)				
Current (Amperage)		30		A
Power		3.75		KW
Electric motors, maximum load capacity				
Motor nominal power		1 / 0.74		H.P. / KW
Nominal amperage Maximum		9		A
Maximum Input nominal power		1.1		KW
Maximum Load for Conventional Air Conditioner or Refrigeration Equipment				
Input power consumed Maximum		1.4		KW
Nominal amperage Maximum		12		A
Apparent Power (No load)		15		VA
Mechanicals				
Dimensions				
		Length L	102	mm
		Width W	109	mm
		Height H	43	mm
		Weight	280	gr.
Conection terminals				
Screw thread		M4		
Screwdriver				
Phillips		PH2		
Flat		1.0 x 5.5		mm
Tightening torque min./max.		1.2 / 1.8		Nm
Wire section / gauge (solid or multifilament) (see notes 2, 3, 4 and 5)				
Minimum		0.34/ 22		mm² / AWG
Maximum		4 / 10		mm² / AWG
Recommended wire stripping length		7-8		mm
Isolation materials				
Enclosure		ABS		
Conection terminals		PA66		
Printed circuit board		FR4		
Flame retardant classification (UL94)				
Enclosure		V0, 5VA		
Conection terminals		V0		
Printed circuit board		V0		
Isolation resistance (NTC1650:2004 Num 17.1)		>550		Mohms
Dielectric strength (NTC1650:2004 num 17.2)		>2		KV
Environmental				
Maximum operating ambient temperature		45		°C

Place of use: Indoor use, in a dry and ventilated place Outdoor use and/or in wet places	Yes No	
Enclosure ingress protection IP (IEC 60529)	IP40	

Note 1 N/A

Note 2: For currents greater than 20A with direct cable connection to the terminal block, use solid wire.

Note 3: The terminals supplied are for 12-10 AWG (2.05 – 2.5 mm²) wire and can be used up to 30A with multi-strand wire.

Note 4: For two identical conductors on a terminal, maximum 2.5 mm² or 10 AWG.

Note 5: Use the appropriate wire gauge for the current of your equipment according to the national electrical standard or the specifications of the manufacturer of the equipment to be protected.

Product certificates

NOM NOM-003-SCFI-2014 (NMX-J-515-ANCE)

Application notes

1. The maximum cooling capacity will depend on the efficiency of the A/C or refrigeration equipment. To determine the input power consumed by your equipment, divide the rated cooling capacity by the EER (not to be confused with the SEER). It should not exceed the rating indicated in the protector's specification.

Care should be taken to use consistent units. If the cooling capacity is expressed in BTU/h, the EER is expressed in BTU/Wh. Alternatively, the cooling capacity can be expressed in W or kW and the EER in W/W.

Example: a) Nominal capacity 15,000 BTU/h b) EER 10.9 BTU/Wh

We obtain: $P_{in} = 15,000/10.9 = 1376W = 1.37 KW < 1.4 KW$ OK

Shipping packaging

Type	Capacity	Dimensions (Length x Width x Height) (cm)	Models	Weight (Kg)
Carton corrugado CC54	54 pcs (9 x 6 pack)	51 x 35 x 50	- M	16.35 16.7
CC 6 pack	6 pcs en blister	33.5 x 16 x 16	- M	1.82 1.86