



Trabajo Pesado Pro

Electronic voltage protector for conventional A/C and refrigeration equipment

Overview

The BREAKERMATIC TRABAJO PESADO PRO is designed to prevent damage to your 110V equipment caused by voltage fluctuations. It features three adjustment knobs on the front for high and low cutoff voltage and the duration of the standby cycle, as well as a switch to turn the protector on and off.

The protector can be mounted using an omega rail (DIN rail) for electrical panels, or directly to a wall using the built-in mounting brackets.

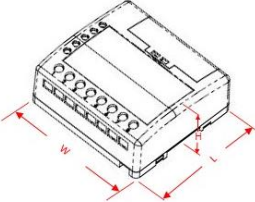
Operation

1. **Steady-state voltage protection.** The BREAKERMATIC TRABAJO PESADO PRO disconnects the output if the steady-state voltage is above the voltage set on the "over voltage" knob or below the voltage set on the "under voltage" knob. 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. **Reconnection delay or standby cycle.** When the protector is energized, or at the end of a voltage fault, the protector will initiate a time delay before connecting the output. The duration of the time delay can be adjusted using the "delay time" knob between 2 min 30 s and 4 min 30 s. The wait cycle protects sensitive equipment from short operating cycles.
3. **Blackout detection, sag detection, etc.** The protector will disconnect the load if it detects a sudden voltage drop below 50% of the nominal voltage and initiate a standby cycle. The blackout detector's response time is instantaneous; the minimum blackout duration is specified in the specifications, but it is guaranteed to be longer than the maximum transfer time on distribution lines.

Models

Model	Nominal Voltage	Nominal amperage	Frequency	Phases	Cut off voltages	Reconnection delay	Response delay	On-off switch	Language
PMP110-D00EST	120VAC	30A	50/60 Hz	1	Adjustable	adjustable	1 s	Yes	Eng. – Spa.

Specifications

Electrical		
Nominal Voltage	120	VAC
Nominal Frequency	50 - 60	Hz
Steady state voltage protection		
Low cut-off voltage, minimum position	80 +/- 3%	VAC
Low cut-off voltage, maximum position	115 +/- 3%	VAC
High cut-off voltage, minimum position	115 +/- 3%	VAC
High cut-off voltage, maximum position	150 +/- 3%	VAC
Reconnection Hysteresis	3 - 6	VAC
Response delay	1 +/- 20%	s.
Standby cycle		
Reconnection delay time, minimum position	2:30 +/- 20%	min:seg
Reconnection delay time, maximum position	4:30 +/- 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	3.6	KW
Electric motors, maximum load capacity		
Motor nominal power	1 / 0.75	H.P. / KW
Nominal amperage Maximum	9	A
Maximum Input nominal power	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)	8	VA
Mechanicals		
Dimensions		
Length L	102	mm
Width W	109	mm
Height H	43	mm
Weight	280	gr.
Connection Terminals		
Screw thread	6-32	
Screwdriver		
Phillips	PH2	
Flat	1.0 x 5.5	mm
Tightening torque min. / max.	0.8 / 1	Nm
Wire section / gauge (solid or multifilament) (see notes 2, 3, 4 and 5)		
Minimum	0.34/ 22	mm ² / AWG
Maximum	4 / 8	mm ² / AWG
Recommended wire stripping length	7-8	Mm
Isolation materials		
Enclosure	ABS	
Terminal Block	PBT	
Printed circuit board	FR4	
Flame retardant classification (UL94)		
Enclosure	V0, 5VA	
Terminal Block	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	Yes	
Outdoor use and/or in wet places	No	
Enclosure ingress protection IP (IEC 60529)	IP40	

Note 1: N/A

Note 2: For currents above 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.

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

Note 5: Use the appropriate wire 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 12,000 BTU/h b) EER 8.8 BTU/Wh

We obtain: $P_{in} = 12000/8.8 = 1363 \text{ W} = 1.36 \text{ KW} < 1.4 \text{ KW OK}$

Example 2: Nominal capacity 3.58 kW, ERR 2.56 W/W

$P_{in} = 3.58/2.56 = 1.4 \text{ kW OK}$

Shipping packaging

Type	Capacity	Dimensions (Length x Width x Height) (cm)	Weight (Kg)
Carton CC48	48 pcs (6 x 8 pack)	58 x 33 x 52	14.75
CC 8 pack	8 pcs in blister	28 x 18.58 x 22	2.46