



# 3 FASES

## Three-phase electronic voltage protector.

### Overview

The BREAKERMATIC 3-Phase monitors the line and phase voltages of a three-phase appliance, protecting it against voltage fluctuations and preventing the machine from starting when the direction of rotation dictated by the phases has been reversed or when a phase is missing. It has high and low cut-off voltage settings and a delay time setting.

It has an output relay that can control an external contactor or any stop signal that allows the machine to stop. The disconnection operation is automatic after detect a voltage condition, as is reset after the condition disappears. Five LEDs display faults and the protector's status.

It can be mounted directly to a wall using screws inserted through a supplied mounting bracket.

#### Ideal for:

Hydro pneumatic pumps - Elevators and three-phase motors - Refrigeration, ventilation, and air conditioning equipment - Industrial transport.

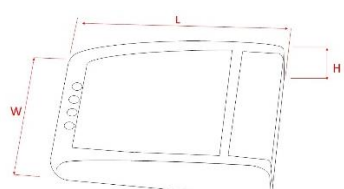
### Operation

- Protection against steady-state voltage variations.** The BREAKERMATIC 3-Phase disconnects the output if the steady-state line voltage is above the voltage set on the "high voltage" knob or below the voltage set on the "low voltage" knob. The response time is 1 second. The voltage must remain outside the range longer than the response time for the disconnection to be activated. While the fault persists, the corresponding indicator will remain lit.
- 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 "wait cycle" knob between 5 s and 300 s (5 min). The standby cycle protects sensitive equipment from short operating cycles.
- Detection of blackouts, sags, etc.** 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 the distribution lines. Therefore, this maneuver does not affect the protector and does not disconnect the load.
- Absence of a phase.** The protector will disconnect the output and indicate absence of a phase.
- Reversal of the direction of rotation or phase sequence.** If the phase sequence is reversed, the protector will immediately disconnect the output. The response time to this disturbance is less than one line cycle.

### Models

Model	Line Voltage	Nominal amperage	Frequency	No. Phases	Cut off voltages	Reconnection delay	Response delay	unbalance	Phase loss	Rotation direction	Language
PTE208-ADOEST	208VAC	5A	50/60 Hz	3	Adjustable	Adjustable	1s	No	Yes	Yes	Spa. - Eng.
PTE440-ADOEST	440VAC	5A	50/60 Hz	3	Adjustable	Adjustable	1s	No	Yes	Yes	Spa. - Eng.
PTE480-ADOEST	480VAC	5A	50/60 Hz	3	Adjustable	Adjustable	1s	No	Yes	Yes	Spa. - Eng.

# Specifications

Electrical					
	Model	PTE208	PTE440	PTE380	
Nominal Line voltage		208	440	480	VAC
Nominal Frequency		50 / 60			Hz
Steady state voltage protection					
Low cut-off voltage, minimum position		140 +/- 3%	300 +/- 3%	340 +/- 3%	VAC
Low cut-off voltage, maximum position		210 +/- 3%	440 +/- 3%	480 +/- 3%	VAC
High cut-off voltage, minimum position		210 +/- 3%	440 +/- 3%	480 +/- 3%	VAC
High cut-off voltage, maximum position		280 +/- 3%	580 +/- 3%	620 +/- 3%	VAC
Reconnection Hysteresis		5 +/- 0.5			VAC
Response delay		1 +/- 20%			s.
Stand by cycle					
Reconnection delay time, minimum position		5 +/- 5%			seg
Reconnection delay time, maximum position		5:00 +/- 5%			Min:seg
Blackout detection					
Minimum blackout duration (0% nominal voltage)		32 -64			ms
Minimum brownout duration (50% nominal voltage)		>100			ms
Interrupter (control output)					
Switching capacity					
Current (Amperage) TC-NA		5			A
Current (Amperage) TC-NC		5			A
Voltage between Contacts		Nominal Voltage			
Apparent Power (No load)		7	24	24	VA
Mechanicals					
Dimensions					
		Length L	102		mm
		Width W	109		mm
		Height H	43		mm
		Weight	260		gr.
Connection terminals					
Screw thread		6-32			
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 1,2, y 3 )					
Minimum		0.34/ 22			mm² / AWG
Maximum		4 / 8			mm² / AWG
Recommended wire stripping length		7-8			Mm
Isolation materials					
Enclosure		ABS			
Terminals block		PA-66			
Printed circuit board		FR4			
Flame retardant classification (UL94)					
Enclosure		V0, 5VA			
Terminals 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:** The supplied terminals are for 12-10 AWG (2.05-2.5 mm<sup>2</sup>) wire.

**Note 2:** For two identical conductors on a single terminal, a maximum of 2.5 mm<sup>2</sup> or 10 AWG is required.

**Note 3:** The current draw of this protector is less than 40 mA per phase. We recommend wiring with 16-20 AWG wire gauge. In all cases, consider the coil current of the contactor to be used when selecting the wire gauge.

## Shipping packaging

Type	Capacity	Dimensions (Length x Width x Height) (cm)	Weight (Kg)
Carton CC54	54 pcs (9 x 6 pack)	51 x 35 x 50	16
Carton CC 6 pack	6 pcs in blister	33.5 x 16 x 16	1.78