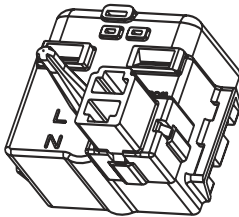


Embraco is introducing into the market a new electronic starting system for high efficiency compressors, which stands out from all others due to the following characteristics:

- Combo concept - overload protector, electronic board and cover in a single casing;
- Fully electronic concept;
- Full integration of starting and protection devices;
- Eliminates PTC power consumption;
- Free from mechanical and electromagnetic noises;
- Easy assembly, compatible with EM and EG shells and applications in R 600a and R 134a;
- Connection to customer system according to need (terminals fast on 6,3 - 4,8 or Molex);
- Developed for use with "4TM" overload protectors.



TECHNICAL CHARACTERISTICS

- Rated Voltage **115 V**
 - Upper Limit 142
 - Lower Limit 85

- Auxiliary Winding Locked Rotor Current *

X	Y	Z	W
15	12	8	4

- Application Temperature -20°C to 85°C
- ON time @ 85°C > 400 ms
- Recovery Time < 30 s
- Power Consumption ~ 0W

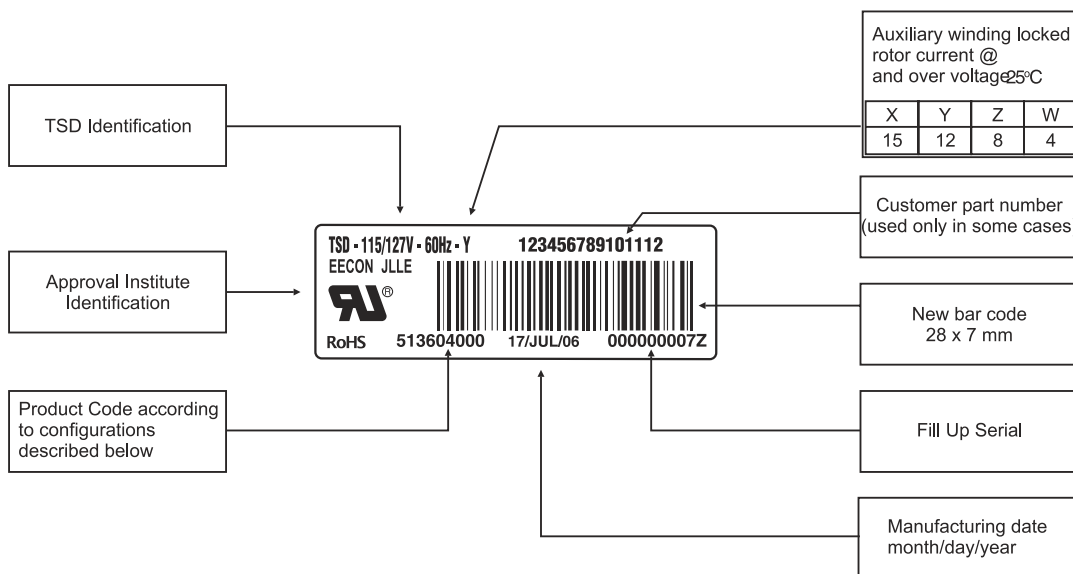
APPROVAL

- UL SA 5967
- CSA MC 159423

PATENTS

- PI 0003448-7 / WO 0209264
- PI 0103585-1
- PI 0103370-0

IDENTIFICATION



Note: * Locked Rotor condition at 25°C and over voltage.

CONFIGURATIONS

APPLICATION IN 115/60Hz
 AUXILIARY WINDING LOCKED ROTOR CURRENT UP TO 15 A

RUN CAPACITOR RANGE
 APPLIED WITH TSD

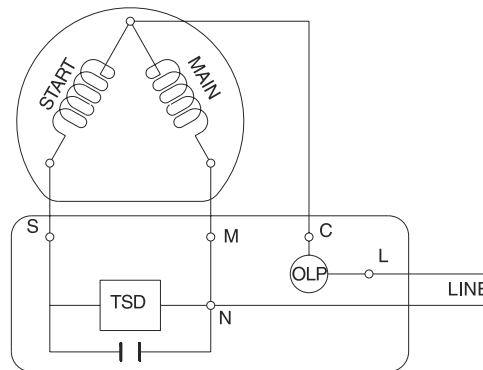
POLE		TERMINALS	
		PHASE	NEUTRAL
45 mm (1.77") / 38 mm (1.50")	With Insulation Tower	4.8	4.8
		6.3	4.8
		6.3	6.3
	Without Insulation Tower	4.8	4.8
		6.3	4.8
		6.3	6.3
		Molex	Molex

VERSION 115V - μ F
10
12
15
20

* with coating application.

ELECTRICAL AND DIMENSION DIAGRAM

ELECTRICAL CONNECTION DIAGRAM

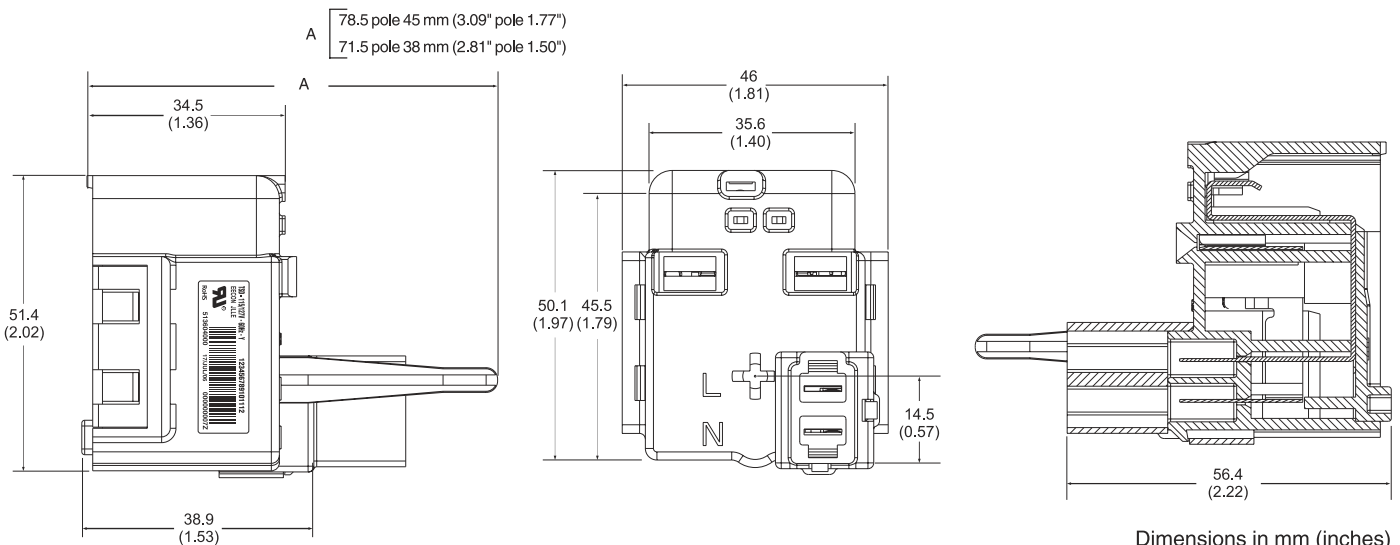


DIMENSIONS in mm (inches)

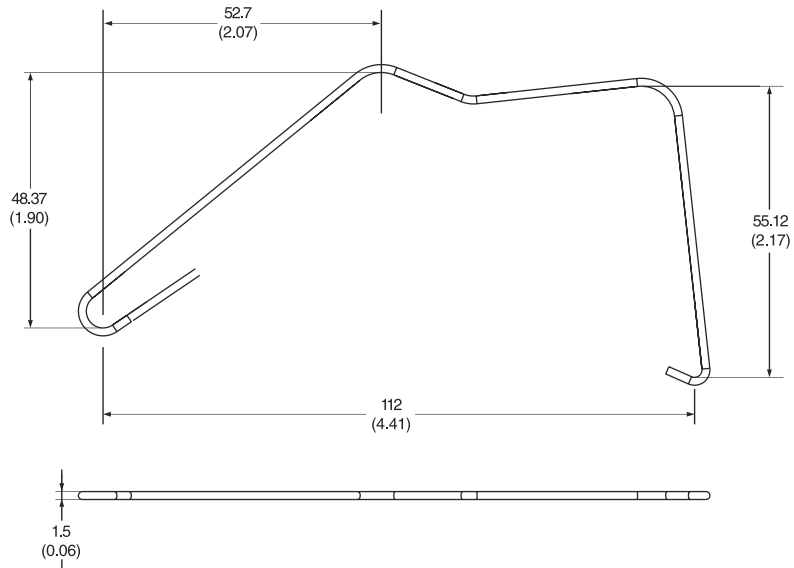
TSD WITHOUT INSULATION TOWER

TSD WITHOUT INSULATION TOWER

TSD WITH INSULATION TOWER



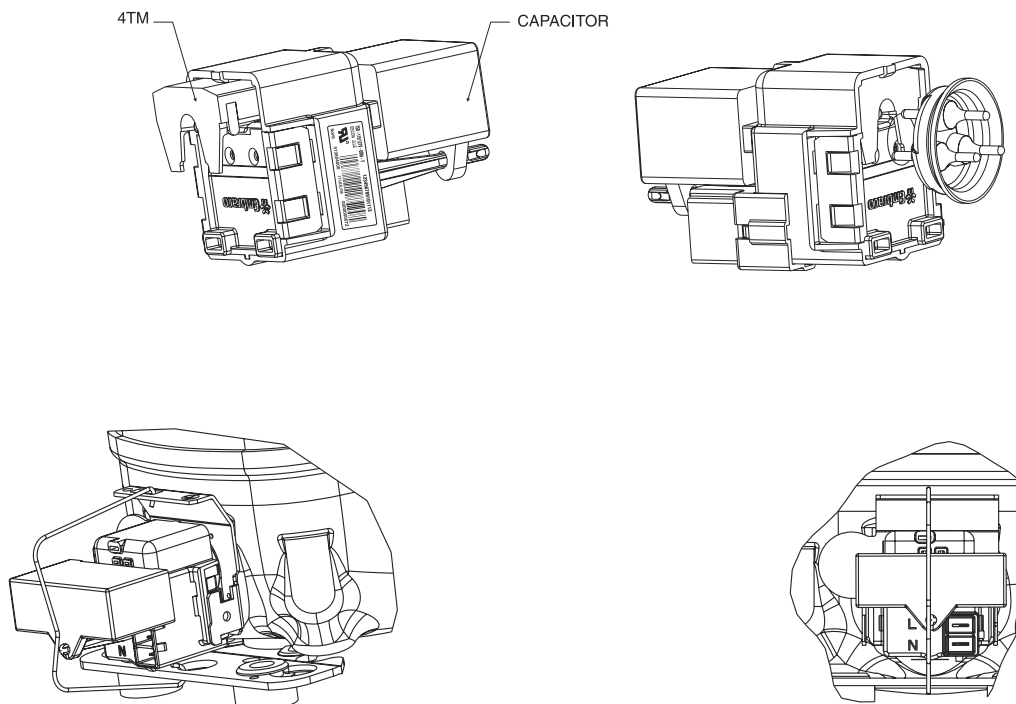
FIXING CLAMP



STAINLESS STEEL WIRE Ø 1.5

Dimensions in mm (inches)

ASSEMBLY



RECOMMENDATIONS FOR USE

- The TSD must not be applied to refrigeration systems with defrosting electrical resistance or any other component in parallel to the thermostat. Systems with this configuration can maintain a residual voltage over the compressor when the thermostat is opened, obstructing the proper functioning of the TSD. It is vital for the TSD circuit and compressor to remain completely de-energized after opening the thermostat.
- Use of the fixing clamp is essential, as this prevents disconnection or bad TSD contact in relation to the compressor as well as to running capacitor in relation to the TSD. The ones that assemble it have to guarantee a perfect connection between the parts. Bad contacts and sparking can burn out the electronic circuit.
- The electronic circuit was designed taking the mandatory use of the running capacitor into consideration. The 115V version is rectangular box, assembling directly onto the TSD body.
- The plastic box was projected to offer protection against contamination and mechanical shock normally present in refrigeration system production lines.
- The TSD's internal components may undergo degradation when in contact with chemical elements such as Cl_2 , H_2S , NH_3 , SO_x , NO_x . Some plastic isolation of cables may release chemical elements when submitted to high temperature conditions. Thus, check if the isolation of the cables used on the terminal board are in accordance with this recommendation.

TROUBLESHOOTING

COMPRESSOR DOES NOT SWITCH ON OR STOPS DURING RUNNING:

- Check if the connections have been properly inserted; (see Assembly Instruction Item for details).
- Check the voltage between TSD terminals "L" and "N". The voltage should be according to the Technical Specification Item.
- Check if the overload protector is tripping. If this occurs, check the Table of Main Refrigeration Problems. (Compressor Application Manual from Embraco).
- If you have done all the items above and the problem persist, change the TSD.

NOTE: For further details, please check the Compressor Application Manual - Embraco.

NOTES

- The TSD was designed for the operation with a run capacitor and Embraco domestic compressor; any other application must be previously evaluated by Embraco's technical team.
- Embraco reserves the right to check the customer's handling of the manufacturing / assembly process, indicating possible adjustments should any be required.
- After replacement, the compressor and it's accessories must have proper processing, and the components must be recycled according to the material group (ferrous, non-ferrous, polymers, oils, ...) directives. These recommendations are intended to minimize the adverse impacts that may be caused to the environment.