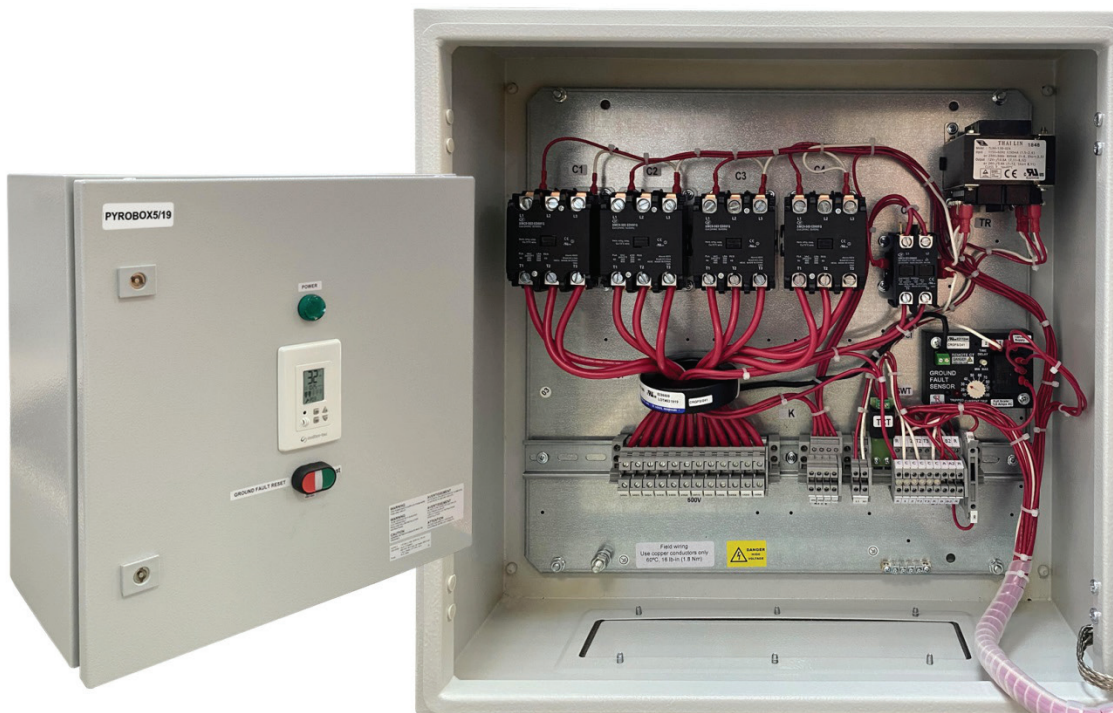


FEATURES & BENEFITS

- Automatic control and power distribution for deicing and snow melting
- Integrated electronic controller with backlit LCD display
- User friendly interface
- Up to 5 zones activation
- Interface to B.M.S and Smart-Home using BACNET and MODBUS over RS485 communication wires
- Sequencing option between the zones – Allowing larger snow melting area with less available power on site
- Multiple snow sensors inputs – optional with Aerial, Ground, Gutter or 3rd party input.
- Master/Slave capability – connecting several PYROBOX units to work together
- Critical zones settings – these areas will be heated whenever it is snowing while other zones will stagger
- Up to 600A & 600V outputs to heaters
- Integrated adjustable Ground Fault Sensor
- Adjustable Temperature set-point, Upper and Lower Limit Temperature
- Adjustable Hold/On/OFF Delay and Manual On
- Adjustable splitting time between the zones Technician testing / commissioning mode for easy and fast system test all year long (even during summer or at high temperatures)
- Energy Efficient algorithm
- ETL certification



DESCRIPTION

The COMBOX 19 is a “Plug and Play” controlled power distribution panel for frost protection, ice and snow melting applications.

It is equipped with built-in communication interface to Building Management System (B.M.S. or B.A.S.) and Smart-Home applications using RS485 connection by BACNET and MODBUS protocols.

When receiving a signal from the snow sensor/s, it activates the contactors energizing the heating elements. Based on the DIP switches configuration, the zones are activated either continuously or in customized sequencing between the zones.

The outdoor temperature set-point as well as ground upper limit temperature and ambient lower limit temperature can be easily set. The Technician Settings mode allows installer or technician to adjust the parameters for customized installations.

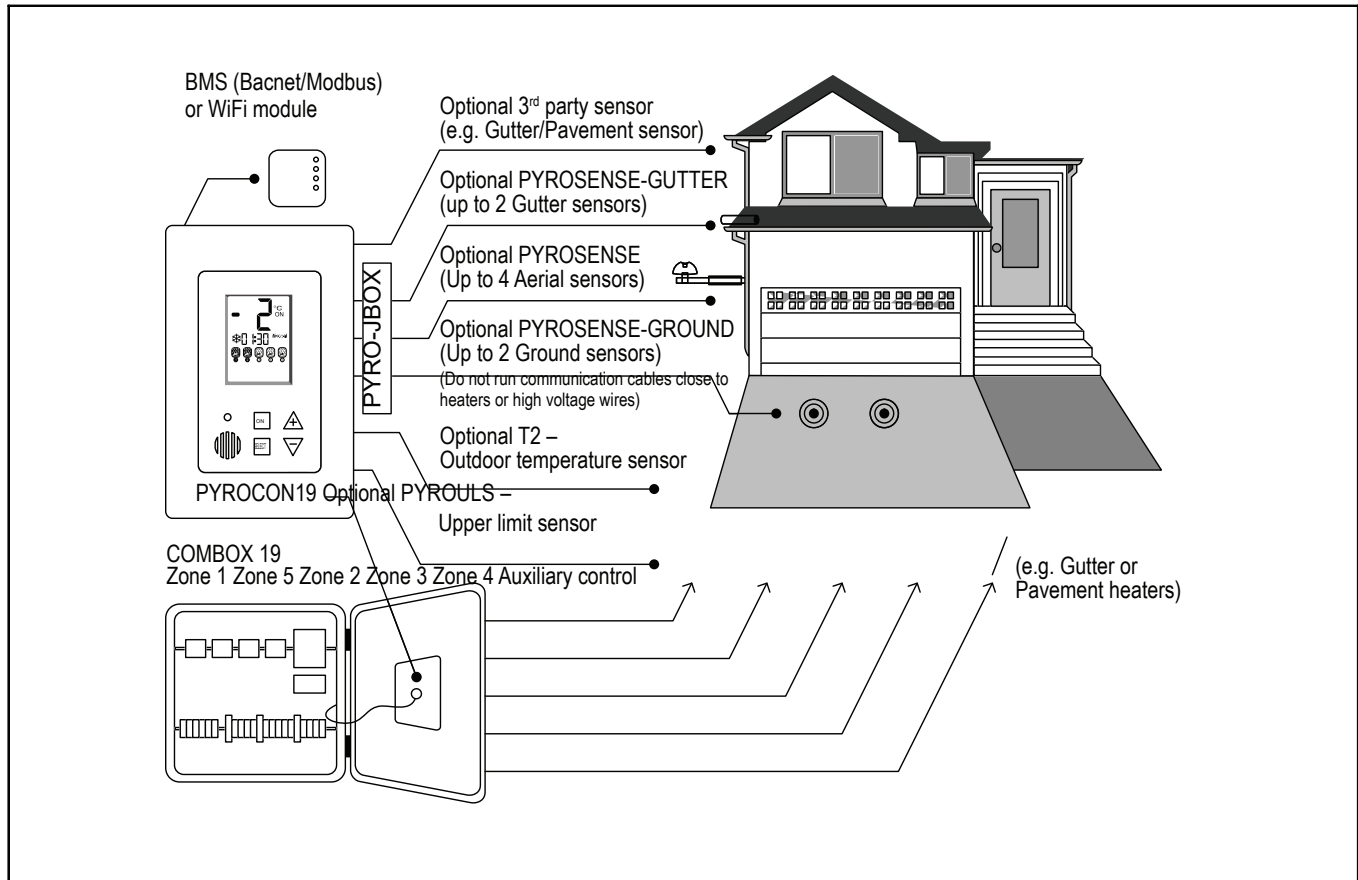
The parameters that can be modified are as follow:

- Temperature set-point
- Lower ambient temperature limit
- Slab Upper Temperature Limit to deactivate heaters for Energy Efficiency
- Time delay (Hold-on) before deactivating the heaters
- ON time for Manual mode
- Heaters cycle time / Splitting time between zones
- Number of zones and sequence of operation (Sensors and heaters control logic)
- Snow sensor RH sensitivity
- Snow detection threshold
- Number of snow sensors connected
- Critical zones setting
- Master and slave settings if more than one COMBOX 19 are used
- MAC Address for the MODBUS and BACNET communication

Comparison table between COMBOX vs COMBOX 19

	COMBOX	COMBOX 19
Connecting Aerial sensors	Up to 4	Up to 4
Connecting ground snow sensor	-	Up to 2
Connecting gutter snow sensor	-	Up to 2
Connecting 3 rd party snow sensor	+	+
Connecting slab temp sensor	+	+
Critical zones	-	+
Master and Slave Settings	-	+
Connection to Smart-Home / BMS	-	+
ETL certification (US and Canada)	+	+
Connection to mobile App	-	+ (with Wi-Fi module)
GFEP Test button	Inside	Outside (on door)

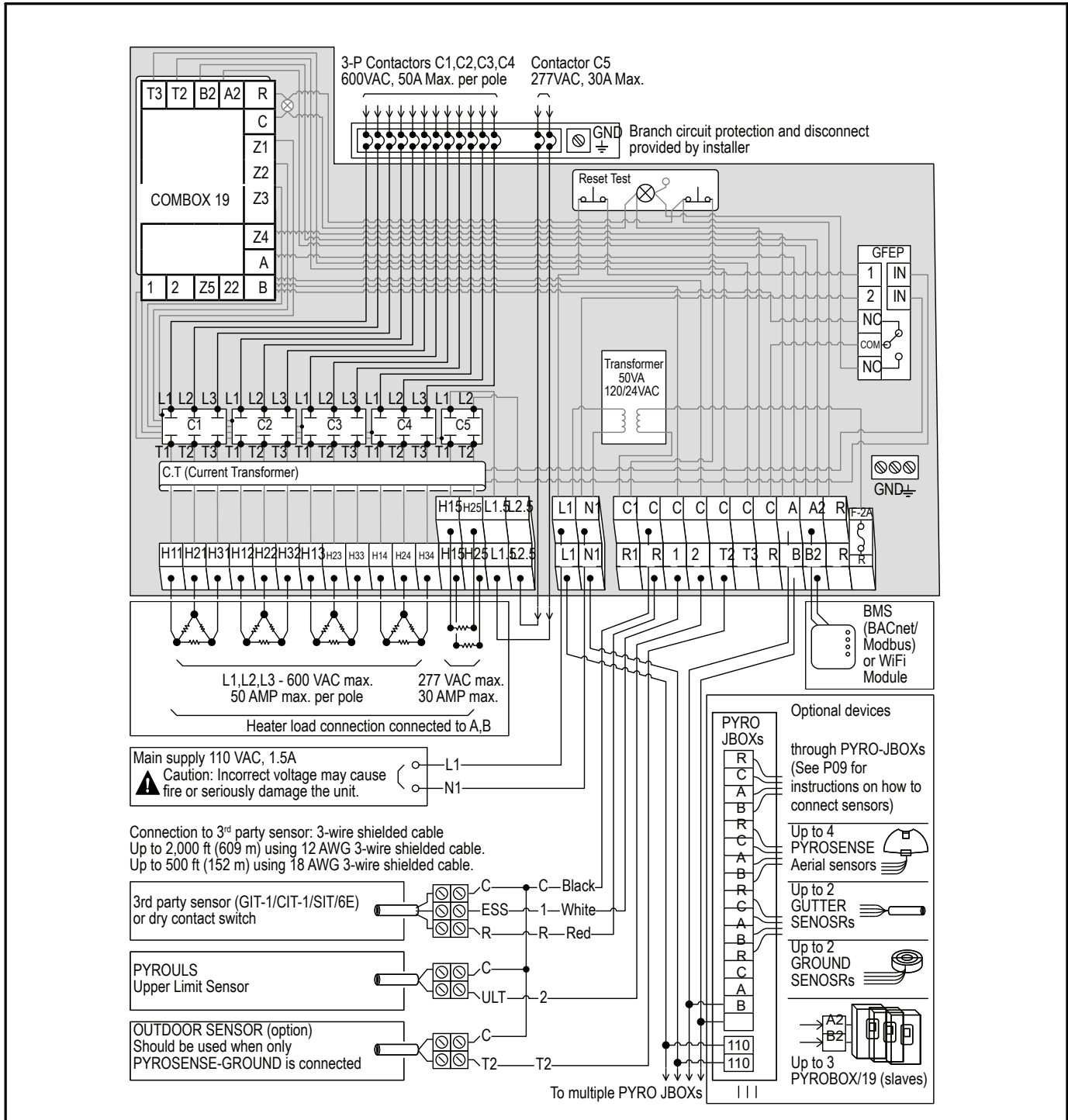
GENERAL SYSTEM LAYOUT



TECHNICAL SPECIFICATIONS

Approvals	ETL Listed	Manual Reset GFEP	Push button on Front Panel
	CAN/CSA-C22.2 No. 14 UL-508A		
Enclosure Protection	IP20, Indoor Mounting	Four Satellite Contactors	600 VACS, 50 A Max (Resistive), 50/60 Hz, 3-Poles
Dimensions	18x18x8 inch (50x50x25 cm)	One Satellite Contactor	277 VAC, 30 A Max (Resistive), 50/60 Hz, 1-Pole 600 VAC / 50 A per pole
Ground Fault Equipment Protection GFEP	Adjustable trip current 0.1-1 A (default 0.2A) Adjustable time delay 0.1-1 sec. (default 0.1 sec.)		
		Terminal blocks	6 mm ² , 10 AWG (max)
		Warranty	1 Year

WIRING DIAGRAM



The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult Warmup Inc. or a representative. Warmup shall not be liable for damages resulting from misapplication or misuse of its products.

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