Vission 20/20 control panel

Features and specifications

Vilter™

EMERSON™
Climate Technologies

Increased functionality, greater flexibility, superior reliability, robust security, intuitive usability

The Vission 20/20 control panel is a high quality embedded industrial controller for screw compressors. The control panel is a complete factory assembled, wired and tested assembly mounted on the screw compressor unit. The Vission 20/20 is designed to control and protect the compressor unit.

Hardware

- Industrial embedded CPU control unit
- Field wiring terminal strip
- Oil heater relay
- Emergency Stop button
- Solid state input and output circuits
- DC power supply
- Circuit breakers
- AC line filter for EMC suppression

Transducers & Sensors

- Vission 20/20 accepts most sensor types, which can be easily set-up in the control panel configuration screen.
- Standard pressure sensors are high quality refrigeration-rated devices with 4-20 mA output signal.
- Standard temperature sensors are RTDs.
- Motor current sensors can be CTs or 4-20 mA transmitters.
- No refrigerant piping in the control panel.

Display & Data Entry

The Vission 20/20 screen layout is unique in the refrigeration industry in that the most important parameters and controls remain visible regardless of what screen the operator is on. Most importantly, the compressor stop button is always visible and is not hidden when navigating to other screens.

Operating Controls

- Pressure/Temperature control set-points
  - (2) Suction pressure controllers
  - (2) Process temperature controllers
- Auto-cycle control points
- VFD control set-points
- Pump-down control set-points
- Pull-down control set-points

Historical Data

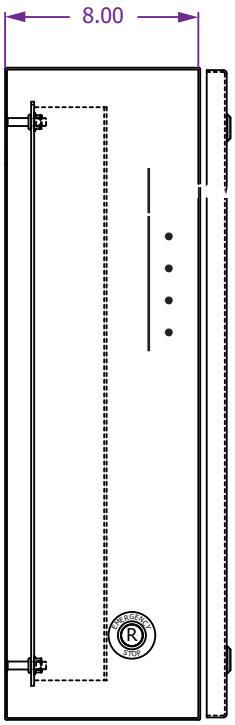
A historical data trending screen is provided to graph selected parameters that are monitored by the Vission 20/20. Short term data is stored in the Vission 20/20 memory and long term data is stored to a USB thumb drive.

System Safeties (Alarms and Trips)

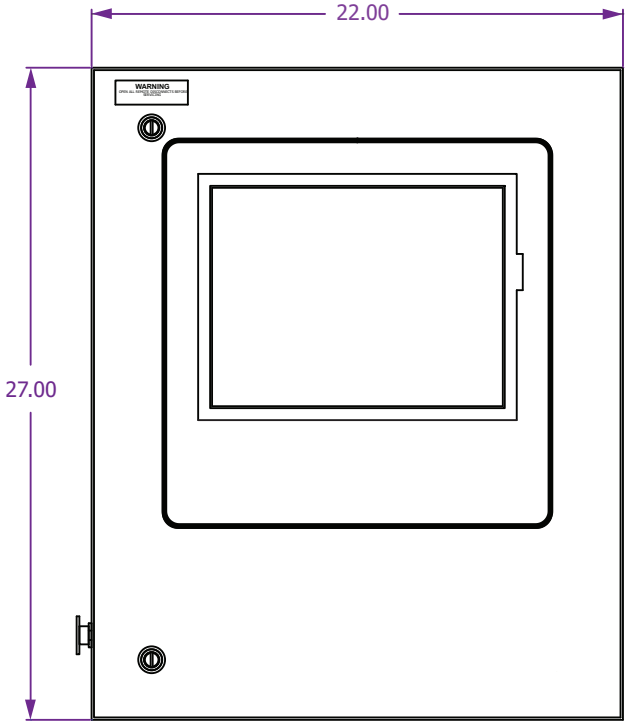
- Low suction pressure set-points
- High process temperature set-points
- Low suction temperature set-points
- Low oil separator start temperature set-points
- Low oil injection temperature set-points
- Pre-lube oil pressure set-points
- High start filter differential pressure set-points
- High motor amperage set-points
- High discharge pressure set-points
- Low process temperature set-points
- High discharge temperature set-points
- Low oil separator run temperature set-points
- High oil injection temperature set-points
- Run oil pressure set-points
- High run filter differential pressure set-points

Technical Specifications

Dimensions and Weights	
Overall size	27” H x 22” W x 9” D (686 mm H x 559 mm W x 229 mm D)
Weight	70 lbs
Design	NEMA 4 (NEMA 4X stainless optional)
Material	Powder coated steel (stainless optional)
Finish	Vilter™ blue



LEFT VIEW



FRONT VIEW

Panel Display	
Size	15” diagonal (304.13 mm x 228.1 mm)
Dot format	1024 x 768 pixels
Type	Color XGA LCD with durable 8-wire touch screen interface
Brightness	350 cd/m²
Backlight	Dual lamp CCFL
Overlay	Polycarbonate
Touchscreen	An 8-wire industrial rated touch screen is incorporated for greater reliability than the commercial rated 5-wire touch screens used by many manufacturers.

Certifications		
• UL 508A	• cUL	• CE

Environmental Operating Ranges	
Operating temperature	32°F to 140°F (0°C - 60°C) with optional panel heating and cooling. *Panel heating option required for low temperature operation.*
Storage temperature	32°F to 176°F (0°C - 80°C)
Humidity (non condensing)	0% to 90%
Vibration	2.0 g's (19.61 m/s²)
Shock	100 g's (980 m/s²)
RFI immunity	15 v/m (15 Hz to 1.5 gHz)
EMI immunity	Complies with CE EMC directive

Input/DC Output Power	
Input power	• 88 - 125 VAC, 47 - 63 Hz (standard) • 185 - 264 VAC, 47 - 63 Hz (optional)
DC output power	• 5 VDC and 12 VDC @ 4 amps (32 watts maximum) • 24 VDC @ 2.2 amps (52.8 watts maximum)

CPU		
Type	ETX-AT	
Clock	1600 MHz	
I/O	• 8-wire touch • CCFL control • TFT display • (2) USB ports • (2) RS-485 ports • Mouse port	• 5-wire touch • LVDS display • CF card slot • Ethernet port • Keyboard port

Analog Outputs	
Type	4 - 20 mA

Analog Inputs		
Type	• 0 - 5 VDC • 0 - 10 VDC • ICTD	• 1 - 5 VDC • 4 - 20 mA • RTD

Digital Output Modules	
Type	Triac, zero-crossing solid state relay
Isolation	3 KV
Operating current	3 amps maximum
Peak 1-cycle surge current	30 amps maximum
Voltage	400 VAC maximum
Fusing	6 amps

Digital Input Modules	
Type	Opto-isolated
Isolation	5 KV
Voltage	264 VAC maximum

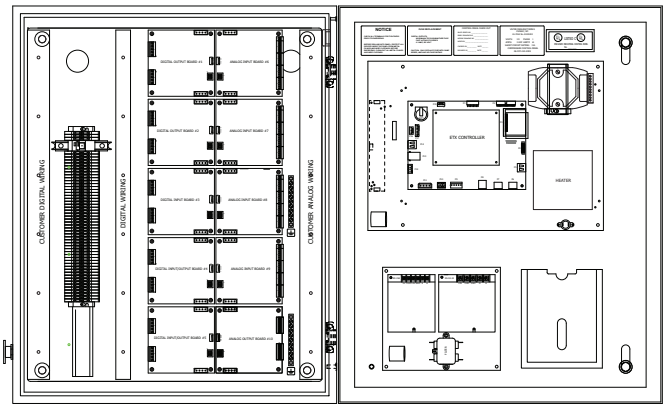
Temperature Sensor	
Type	100Ω RTD

Pressure Sensor	
Material	100% stainless steel welded parts
Over pressure	2X range
Burst pressure	5X range
Technology	Signal-conditioned silicon strain gauge
Range	0 - 200 psia and 0 - 414.5 psia
Output	4 - 20 mA
Accuracy	+/- 1% of span
Excitation voltage	9 - 30 VDC
Temperature range	-67°F to 221°F (-55°C to 105°C)

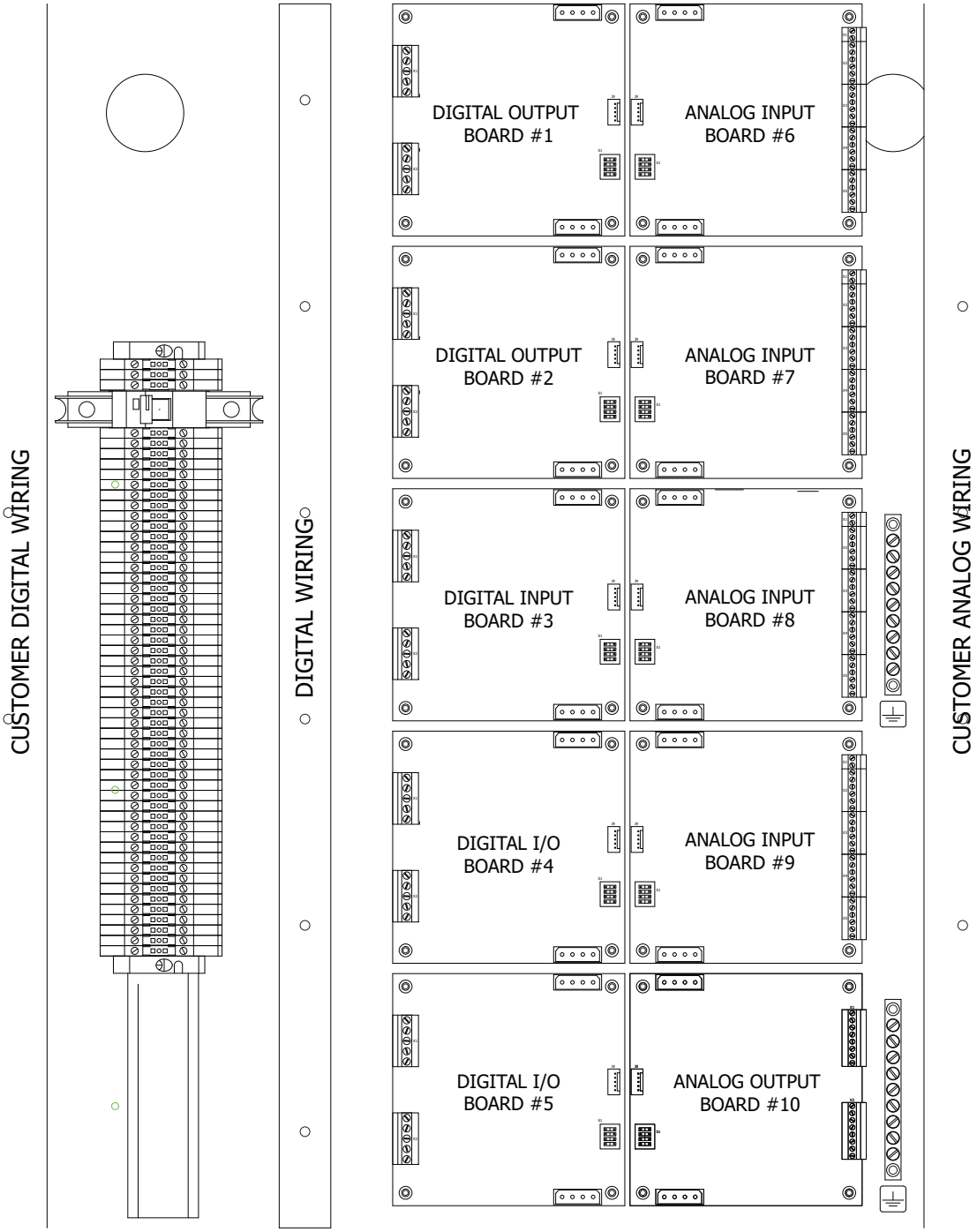
Motor Current Sensor	
Technology	Current transformer or 4-20 mA transmitter
Output	X00:5
Accuracy	+/- 2%
Temperature range	-76°F to 212°F (60°C to 100°C)

External Communication Ports		
Serial port #1	Type	RS-485
	Protocol	MODBUS RTU
	Baud rate	9.6K to 115K
High speed port #1	Type	Ethernet
	Protocol	• MODBUS TCP • Ethernet I/P
	Data rate	10 MB/s
USB #1	USB 2.0 compliant	
USB #2	USB 2.0 compliant	

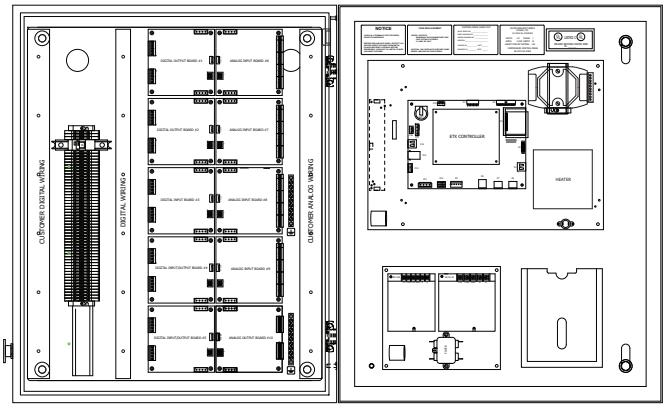
Board and Wiring Layout



FRONT VIEW DOOR OPEN



Interior Door Layout



FRONT VIEW DOOR OPEN