Anest Iwata Air Engineering, Inc

SLE-20(H)

Oil-Free Scroll 20HP Enclosed Air Compressor System

BID SPECIFICATION

General

The Anest Iwata Scroll Enclosed Air Compressor System is designed to provide clean, dry air for applications where the quality of the compressed air is critical. The standard unit is rated for a maximum of 115 PSIG. A high-pressure version (max. 145 PSIG) is also available. The unit is rated for 20HP (4 x 5HP) using oil less scroll pumps.
The Control Panel is UL 508A.

Scroll Enclosed Air Compressor System

The package shall include multiple oil-less scroll air compressors and associated equipment. The only field connections required will be system intake if remote intake option is chosen, exhaust, and power connection at the control panel.

Oil-Free Scroll Compressor Pumps

Each compressor pump shall be belt driven oil less rotary scroll single stage, air-cooled with absolutely no oil needed for operation. The rotary design shall not require any inlet or exhaust valves within the compressor pump housing or structure and shall be rated for 100% continuous duty. Direct drive compressors shall not be used. Tip seals shall be a composite PTFE material and be rated for 10,000 hours operation (5,000 hours for high pressure version). Compressor pump bearings shall be external to the air compression chamber and pin crank and moving scroll bearings shall be serviceable for extended compressor life. Bearing maintenance shall not be required until 10,000 run hours (5,000 run hours for high pressure version). Compressor pumps with bearings that are not accessible for service have an integral radial flow fan for cooling. Each compressor pump shall have flexible connectors on intake and discharge. Each compressor pump shall have a non-metallic heat insulating liner for the discharge air pipe where it threads into the compressor housing.

Each compressor pump shall be provided with an electric drive motor, an air-cooled after-cooler, and a high discharge temperature shut down switch. Auxiliary cooling fans shall operate from 120volt power provided by the transformer included in the system controls.

Motors

Each compressor shall be belt driven by a 4 pole, TEFC, NEMA construction motor. Motors running at speeds higher than 1800 RPM shall not be acceptable. Motors are EISA compliant and premium efficient.

System Controls

The controls operate the duplex, triplex or quadplex air compressor modules as needed in response to a pressure signal from a pressure transducer located in the system manifold. An illuminated on/off push button controls power to the motor starters. When the button is in the off position, the system is merely in stand-by mode, not powered off.

The pressure transducer sends a signal to the programmable logic controller (PLC) which is programmed to operate two, three or four compressor modules as needed to maintain the system pressure requirements. An HMI touch screen interface displays system status and alarm conditions. Pressure settings are user adjustable within factory predetermined setting limits.

The PLC will alternate each compressor module based on demand as well as timed alternation. If a compressor module is running longer than ten minutes continuously, the control will alternate to the next available compressor module to

equalize run time and synchronize maintenance intervals. On initial start-up or if air pressure drops rapidly, simultaneous motor starts are prevented by a programmed three second stagger. One 12V AC control circuit transformer with primary and secondary fuses is installed for control circuit voltage. Motor circuit breakers with lockable disconnects are provided for each compressor module. Operating hours, high temperature alarms, motor overload alarms, run indication, and hours to scheduled maintenance for each compressor module are displayed on the screen. All alarm history is kept in the alarm log. Easily navigated menus are provided to allow the user to select the display conditions and acknowledge the alarms. Remote alarms contacts are provided as shown on the system wiring program. Unit has emergency E-stop.

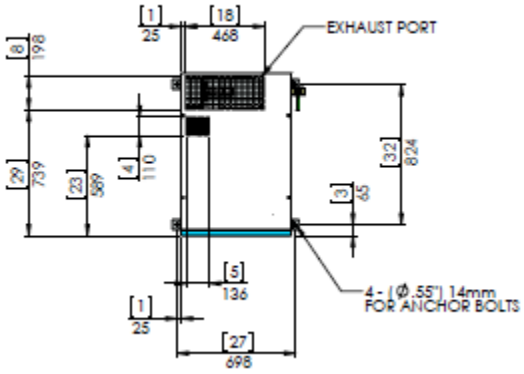
BACnet connections available for remote monitoring from Idec PLC.

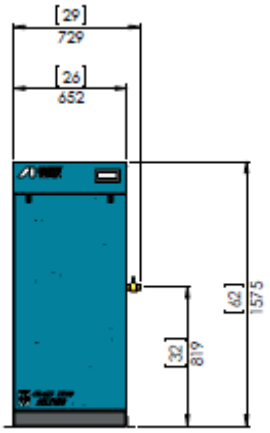
Inlet Filters

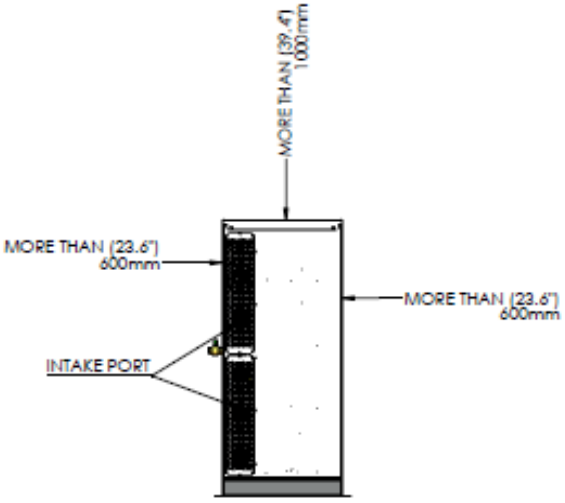
The system includes a single inlet filter with a pleated element and a canister with silencing tubes. The single inlet filter serves all of the compressor modules in the system. The filter is located inside the sound reducing cabinet protected by a convenient access panel.

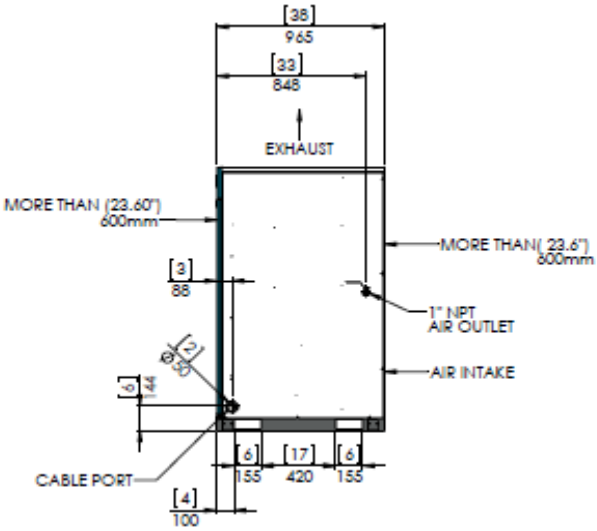
Sound Reducing Enclosure

This system is constructed with an internal frame and steel base system with individual vibration isolation mounted compressor modules. The sound reducing
enclosure has a front access panel to allow service of the electrical controls. The enclosure has rear cooling intake and all exhaust air leaves the enclosure from the top.









Scroll Compressor Unit Specifications								
System Model No.	HP	Max Working Pressure	CFM	dBA	Motor FLA			Weight (Lbs.)
					208	230	460	
SLE-20	20	115	59.2	58	16.7	15.2	7.6	1060
SLE-20H	20	145	46.8	58	16.7	15.2	7.6	1060

Item / Model		SLE-20	SLE-20H
Compressor	**Pump Model**	SL-165E-US x 4	SL-1651E-US x 4
	Control System	Multi-stage (Pressure start-stop detected by sensor)	
	Discharge Pressure (PSI)	*1 94-115	123-145
	Air Delivery (CFM)	59.2	46.8
	Air End Revolution (RPM)	3200 (Each Pump)	3050 (Each Pump)
	Driving System	V-Belt	
	Discharge Air Temperature (Degree F)	Intake temperature + less than 63	
	Air Outlet	NPT 1" (Ball Valve)	
	Air Receiver (GAL)	More than 120 (Recommendation)	
	Noise Level at 4.9ft from front (dB A)	*2 58	
	Ground Vibration (dB)	*3 Less than 45	
Motor	**Motor (Each)**	5HP, 208-230V/460V, 3phase, TEFC, 4-pole, F class insulation	
	Output (HP)	20HP (5HPx4)	
	Starting System	Direct on-line start with magnetic contactor (serial start)	
Protection	**Over Temperature**	Equipped (With Advance Caution)	
	Over Current	Equipped (Thermal Relay)	
Others	**Dimensions (W x L x H) (Inch)**	*4 26 x 38 x 62	
	Approx. Mass (Lbs.)	1060	

Note

1.) Air delivery means average discharge air volume at 94 PSI/123PSI (maximum operating pressure) converted into atmospheric pressure. It is not a warranted figure.
2.) Noise level is measured in an anechoic room
3.) The ground vibration is measured at the position of 0.4in from compressor side. (The ground vibration changes by the ground condition. This data is reference value when compressor is left on a usual concrete floor.
4.) Dimensions are outer dimensions excluding extruding parts.