

HST™ 10 turbocompressor

A highly efficient and reliable single-stage centrifugal compressor for the provision of oil-free, low-pressure compressed air.

Construction

High-speed electric motor

A vertically mounted high-frequency electric motor for variable speed operation. The motor is air-cooled by an integrated shaft mounted fan and the windings are protected by Pt100-sensors monitored by the local control system.

Air end

The impeller has been designed to optimize performance and is machined from a solid piece of high-strength aluminium alloy. The volute and other main components are made from cast aluminium. A non-contact seal between air-end and motor minimizes losses to maintain high efficiency.

Variable frequency drive

Flow control is provided by a built-in variable frequency drive which also accommodates variations in outlet pressure and ambient inlet conditions. The variable frequency drive's soft-start facility eliminates peak starting currents.

Active magnetic bearings

Two radial bearings and two axial bearings support the rotor. The magnetic bearing controller uses data provided by multiple sensors to continuously manage the position of the rotor.

Blow-off valve

The blow-off valve is mounted within the acoustic enclosure. Further attenuation can be provided by an optional integrated silencer.

Acoustic enclosure

The enclosure provides protection for the electrical and mechanical components and provides efficient noise attenuation for the machine. The enclosure is constructed from zinc-plated steel. It is suitable for indoor use (IP23, NEMA 2).

Air inlet

The compressor draws the air from the room. The filters for cooling air and the motor cooling air are integrated into the main assembly. Alternatively the air inlet can be ducted with external filters.



Compressor control

Local control

The built-in local Human-Machine-Interface (HMI) provides control and monitoring for the safe and efficient operation of the machine. Flow may be controlled directly by the operator, or alternatively, the turbocompressor can follow a given reference value. The local HMI provides access to the operator.

Connections

Analog and digital control and monitoring connections are built in. Fieldbus connections such as Profibus, Profinet, Modbus RTU, Modbus TCP, and EtherNet/IP are available as options.

Remote connections

A secure connection facilitating service and monitoring can be ordered as an option.

Options

Various options for handling special requirements regarding e.g. temperature, dusty environments and locations with high moisture can be selected.

Accessories

Pipework accessories for installation such as flexible joints, valves, silencers, and air filters are available from Sulzer.

Performance testing

Compressor performance tests are performed on every machine manufactured and certificates issued to confirm compliance. The tests are carried out at the Sulzer factory test facility. Performance is guaranteed with a manufacturing tolerance of $\pm 2\%$ and a measurement tolerance according to ISO 5389. Optionally tests can be performed in full accordance with ISO 5389 or ASME PTC 10. The test can be witnessed by the customer or a third party inspector.

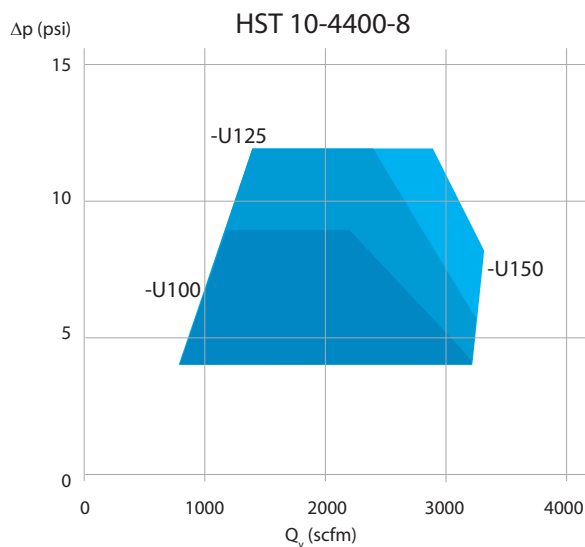
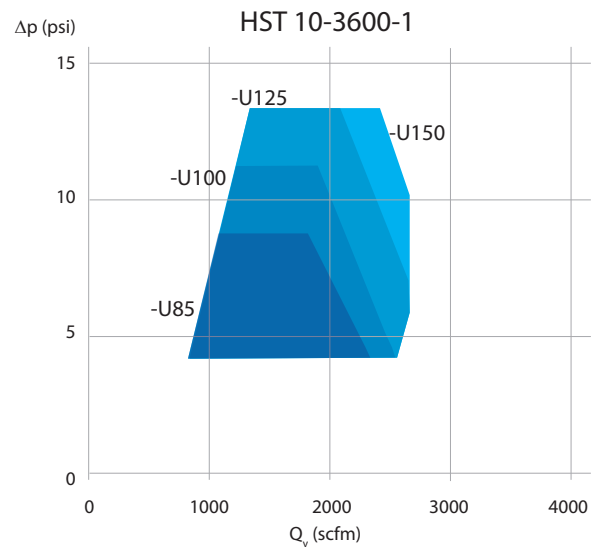
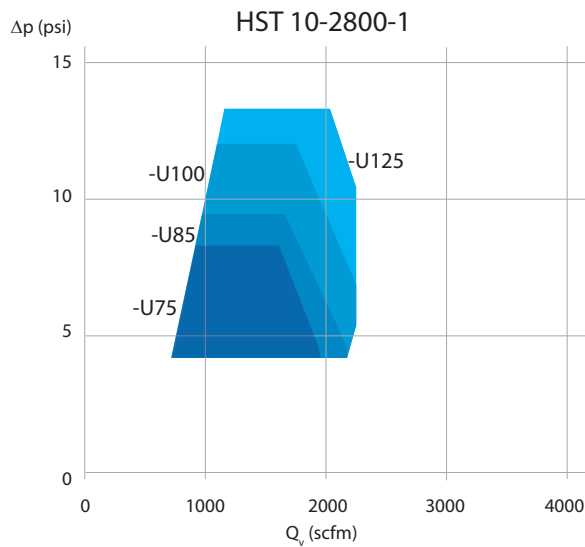
Certification and standards

The product is certified according to the relevant UL and CSA standards:

- UL 1450
- CSA C22.2 No. 68 / No. 301

The product is designed and manufactured in accordance with the EN 61800-3 standard and intended for use in second environment locations, e.g. in industrial areas.

Performance



Compressor data

	HST 10-2800-1-U75	HST 10-2800-1-U85	HST 10-2800-1-U100	HST 10-2800-1-U125
Air flow range [scfm]	700-1900	700-2100	700-2200	700-2200
Pressure rise [psi]	4.4-8.0	4.4-9.4	4.4-12.3	4.4-13.1
Max. noise level [dB] ⁽¹⁾	75/80	75/80	75/80	75/80
Input power [hp]	75	85	100	125
Main supply voltage [V]	460-480	460-480	460-480	460-480
Input power frequency [Hz]	50/60	50/60	50/60	50/60
Max. input current [A] ⁽²⁾	74	84	98	123
Cable size [AWG or MCM] ⁽²⁾	3x3+6	3x2+6	3x1+6	3x2/0+6
Fuse size [A] ⁽²⁾	80	90	100	125

	HST 10-3600-1-U85	HST 10-3600-1-U100	HST 10-3600-1-U125	HST 10-3600-1-U150
Air flow range [scfm]	900-2400	900-2600	900-2700	900-2700
Pressure rise [psi]	4.4-8.7	4.4-10.9	4.4-13.1	4.4-13.1
Max. noise level [dB] ⁽¹⁾	75/80	75/80	75/80	75/80
Input power [hp]	85	100	125	150
Main supply voltage [V]	460-480	460-480	460-480	460-480
Input power frequency [Hz]	50/60	50/60	50/60	50/60
Max. input current [A] ⁽²⁾	84	98	123	148
Cable size [AWG or MCM] ⁽²⁾	3x2+6	3x1+6	3x2/0+6	3x3/0+4
Fuse size [A] ⁽²⁾	90	100	125	150

⁽¹⁾ The first value is valid for a machine taking inlet air from the room and equipped with the low noise option. The second value is for ducted inlet and without the low noise option.

⁽²⁾ The maximum input current is calculated using the nominal voltage. The cable and fuse sizes are recommendations and based on the supply current and cables rated to 70 °C [158 °F].

	HST 10-4400-8-U100	HST 10-4400-8-U125	HST 10-4400-8-U150
Air flow range [scfm]	850-3100	850-3300	850-3300
Pressure rise [psi]	4.4-8.7	4.4-10.9	4.4-10.9
Max. noise level [dB] ⁽¹⁾	75/80	75/80	75/80
Input power [hp]	100	125	150
Main supply voltage [V]	460-480	460-480	460-480
Input power frequency [Hz]	50/60	50/60	50/60
Max. input current [A] ⁽²⁾	98	123	148
Cable size [AWG or MCM] ⁽²⁾	3x1+6	3x2/0+6	3x3/0+4
Fuse size [A] ⁽²⁾	100	125	150

⁽¹⁾ The first value is valid for a machine taking inlet air from the room and equipped with the low noise option. The second value is for ducted inlet and without the low noise option.

⁽²⁾ The maximum input current is calculated using the nominal voltage. The cable and fuse sizes are recommendations and based on the supply current and cables rated to 70 °C [158 °F].

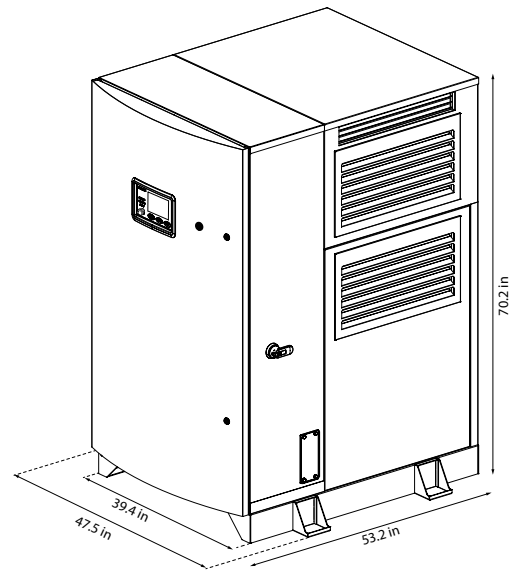
Installation requirements

Maximum altitude	8200 ft above sea level
Air quality, permitted chemical vapors	IEC 60721-3-3 class 3C3
Ambient temperature	Min. +14 °F, max. +113 °F
Ambient relative humidity	< 95%, non-condensing, non-corrosive, no dripping water
Inlet process air temperature	Min. -22 °F, max. +122 °F

Sulzer may approve applications outside these criteria.

Weight

Air intake from the room	1430 lb
Ducted air inlet	1320 lb



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