TECHNICAL DATASHEET

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.

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 orderd 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 ±2% and a measurement tolerance according to ISO 5389. Optionally tests can be performed in full accordance with ISO 5389 and/or witnessed by the client.

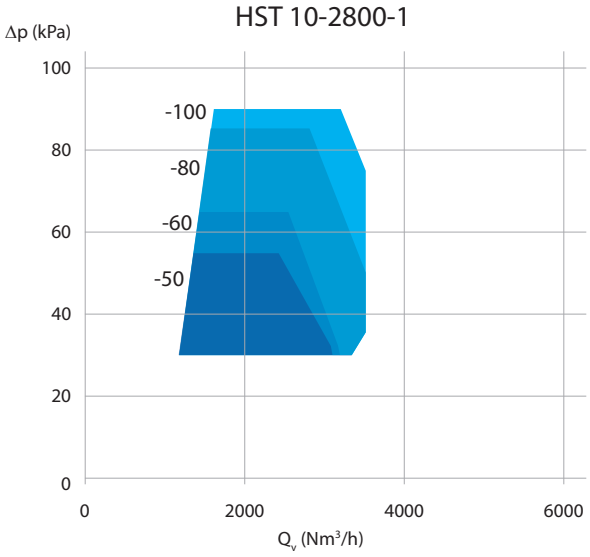
Certification and standards

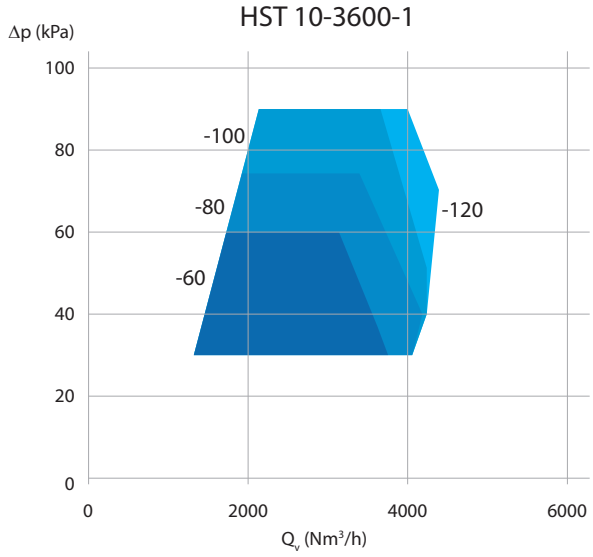
The product is CE certified. For CE marking it complies with:

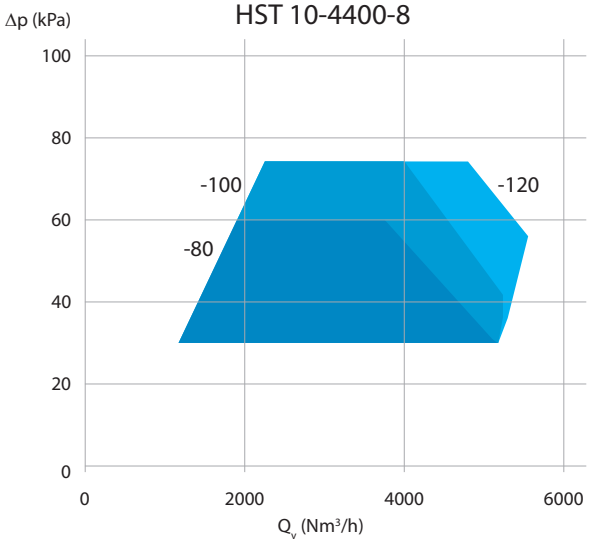
- Machinery directive (MD) 2006/42/EC
- Electromagnetic compatibility (EMCD) 2014/30/EU

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 10-2800-1-50	HST 10-2800-1-60	HST 10-2800-1-80	HST 10-2800-1-100
Air flow range [Nm³/h]		1100-3100	1100-3300	1100-3500	1100-3500
Pressure rise [kPa]		30-55	30-65	30-85	30-90
Max. noise level [dB] (1)		75/80	75/80	75/80	75/80
Input power [kW]		50	60	80	100
Main supply voltage [V]		380-500	380-500	380-500	380-500
Input power frequency [Hz]		50/60	50/60	50/60	50/60
400 V	Max. input current [A] (2)	79	95	127	158
	Cable size [mm²] (2)	3x25+16	3x35+16	3x50+25	3x70+35
	Fuse size [A] (2)	80	100	160	160
500 V	Max. input current [A] (2)	63	76	101	127
	Cable size [mm²] (2)	3x16+16	3x25+16	3x35+16	3x50+25
	Fuse size [A] (2)	80	80	125	160

		HST 10-3600-1-60	HST 10-3600-1-80	HST 10-3600-1-100	HST 10-3600-1-120
Air flow range [Nm³/h]		1300-3800	1300-4100	1300-4300	1300-4400
Pressure rise [kPa]		30-60	30-75	30-90	30-90
Max. noise level [dB] (1)		75/80	75/80	75/80	75/80
Input power [kW]		60	80	100	120
Main supply voltage [V]		380-500	380-500	380-500	380-500
Input power frequency [Hz]		50/60	50/60	50/60	50/60
400 V	Max. input current [A] (2)	95	127	158	190
	Cable size [mm²] (2)	3x35+16	3x50+25	3x70+35	3x95+50
	Fuse size [A] (2)	100	160	160	200
500 V	Max. input current [A] (2)	76	101	127	152
	Cable size [mm²] (2)	3x25+16	3x35+16	3x50+25	3x70+35
	Fuse size [A] (2)	80	125	160	160

(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.

		HST 10-4400-8-80	HST 10-4400-8-100	HST 10-4400-8-120
Air flow range [Nm³/h]		1300-5200	1300-5300	1300-5400
Pressure rise [kPa]		30-60	30-75	30-75
Max. noise level [dB] (1)		75/80	75/80	75/80
Input power [kW]		80	100	120
Main supply voltage [V]		380-500	380-500	380-500
Input power frequency [Hz]		50/60	50/60	50/60
400 V	Max. input current [A] (2)	127	158	190
	Cable size [mm²] (2)	3x50+25	3x70+35	3x95+50
	Fuse size [A] (2)	160	160	200
500 V	Max. input current [A] (2)	101	127	152
	Cable size [mm²] (2)	3x35+16	3x50+25	3x70+35
	Fuse size [A] (2)	125	160	160

(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.

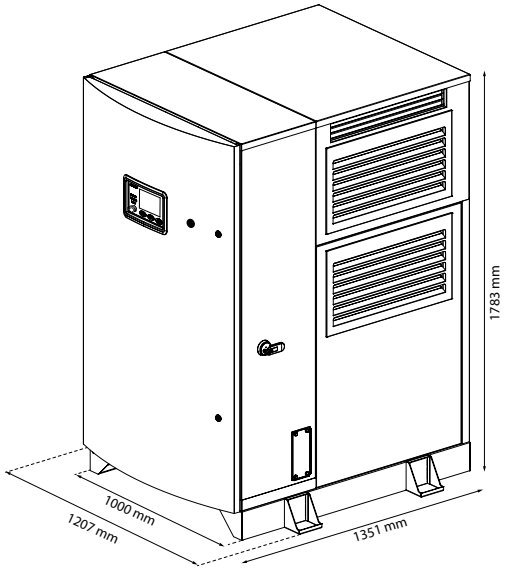
Installation requirements

Maximum altitude	2500 m above sea level
Air quality, permitted chemical vapors	IEC 60721-3-3 class 3C3
Ambient temperature	Min. -10 °C, max. +45 °C
Ambient relative humidity	< 95%, non-condensing, non-corrosive, no dripping water
Inlet process air temperature	Min. -30 °C, max. +50 °C

Sulzer may approve applications outside these criteria.

Weight

Air intake from the room	650 kg
Ducted air inlet	600 kg



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