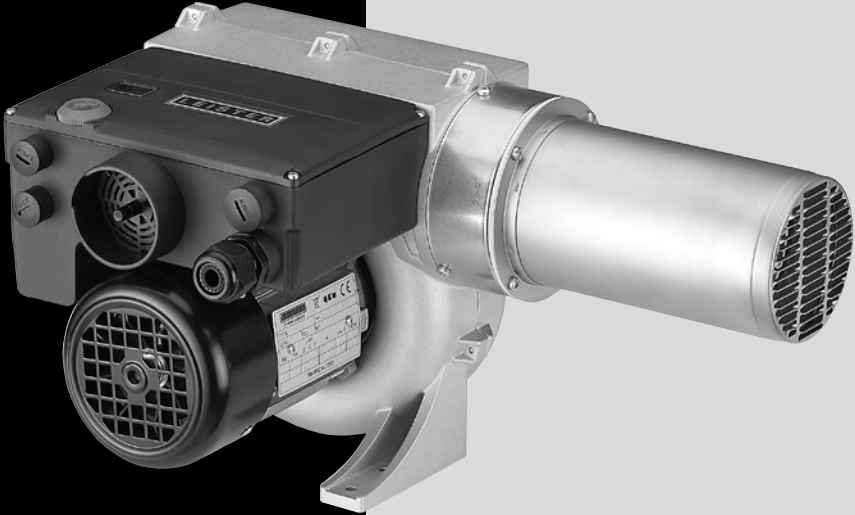
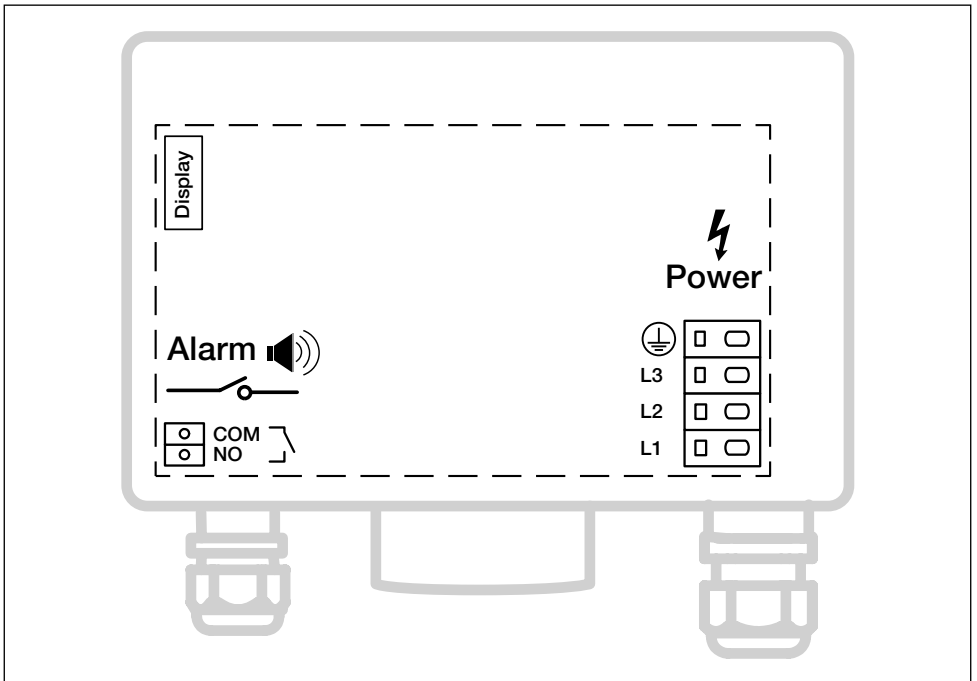
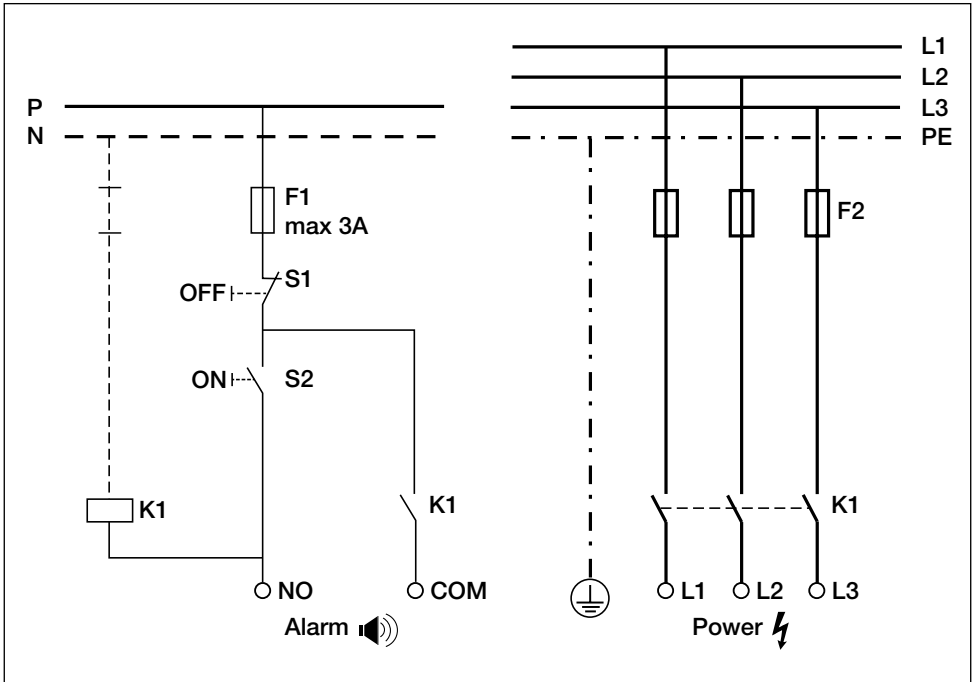


LEISTER®

ALLIED
POWER TOOLS

VULCAN SYSTEM







Operating Instructions

Congratulations on purchasing a VULCAN SYSTEM!

You have chosen a top-class hot air blower by Leister, made from high-quality materials. Every VULCAN SYSTEM undergoes stringent quality checks before leaving the factory in Switzerland.



Please read operating instructions carefully before use and keep for future reference.

Hot air blower VULCAN SYSTEM

Application

The hot air blower VULCAN SYSTEM is suitable for building into machines, installations or appliances and is designed for continuous operation.

Its most important applications include; drying and heating, thawing, accelerating and removal, sterilising, smoothing, polishing, activation and dissolving, separating and fusing, shrinking, removal.



Warning



Danger of death when opening the device, as live parts and connections are exposed. The device must be fully disconnected from the mains before opening it.



Incorrect use of the hot air blower can present a **fire and explosion hazard** especially near combustible materials and explosive gases.



Danger – can cause burns! Do not touch the heating element tube and nozzle while they are hot. Allow the device to cool. Do not direct hot-air stream towards people or animals.



Caution



The **nominal voltage** indicated on the device must correspond to the mains voltage. EN 61000-3-11; $Z_{max} = 0.033 \Omega + j 0.021 \Omega$. If necessary, consult your electricity supply utility.



Devices of protection class I must be earthed with a protective earth conductor.



The device **must not be left unattended** when in use. Heat can reach combustible materials which are out of sight. The device may only be used **by trained personnel** or under their supervision. Children may not use the device under any circumstances.



Keep away from wet and damp areas.

Disposal



Electrical equipment, accessories and packaging should be recycled in an environmentally friendly way. **For EU countries only:** Do not dispose of electrical equipment with household refuse!

Technical Data

Voltage	V~	3 × 230		3 × 400		3 × 480	
Power consumption	kW	6	10	6	11	6	11
Frequency	Hz	50/60		50/60		50/60	
Max. air outlet temperature	°C	650		650		650	
Max. air inlet temperature	°C	65		65		65	
Air volume (20 °C)	l/min.	850/1500		950/1700		950/1700	
Max. static pressure	Pa	3100/4000		3100/4000		3100/4000	
Emission level	L_{pA} (dB)	65		65		65	
Weight without power supply cord	kg	9.3		9.3		9.3	
Dimensions		Page 3 (Size)		Page 3 (Size)		Page 3 (Size)	
Mark of conformity		CE		CE		CE	
Approval mark		Ⓢ		Ⓢ		Ⓢ	
Protection class I		Ⓢ		Ⓢ		Ⓢ	

Technical data and specifications are subject to change without prior notice
Mains voltage cannot be switched over

- Heat output steplessly adjustable with potentiometer
- Integrated power electronics
- Protection against heating element or device overheating
- Brushless blower motor with FC control
- Alarm output
- Integrated temperature control
- Integrated temperature probe
- Display for showing the setpoint and actual values (°C or °F)

Technical data for interface

Relay output	Max. voltages	AC 250 V, DC 30 V
	Max. currents	AC 3 A, DC 3 A
	Max. contact resistance	100 m Ohm at DC 6 V / 1 A
	Relay contact	SPST - NO
	Insulation IEC/EN 60065	AC 2000 V (50 - 60 Hz) 1 min

Signal inputs with reverse polarity protection and zero point correction	Insulation IEC/EN 60747-5-2	AC 1414 V Peak	
	Voltage input U_c in relation to GND iso	DC 0 - 10 V (Rippel < 0.05 V at 5 °C resolution) (Rippel < 0.1 V at 1 % resolution)	
	Max. input voltage	DC 12 V	
	Nominal input resistance	280 k Ohm	
	Current input I_c (2 - conductor technology)	DC 4...20 mA (Rippel < 0.1 mA at 5 °C resolution) (Rippel < 0.15 mA at 1 % resolution)	
	Max. input current	DC 22 mA	
	Supply with reverse polarity protection without separation of the signal inputs	Nominal input resistance	160 Ohm
		Operating voltage U_s in relation to GND iso	DC 15...24 V
Max. operating voltage		DC 25 V	
	Power consumption	12 mA at DC 24 V	

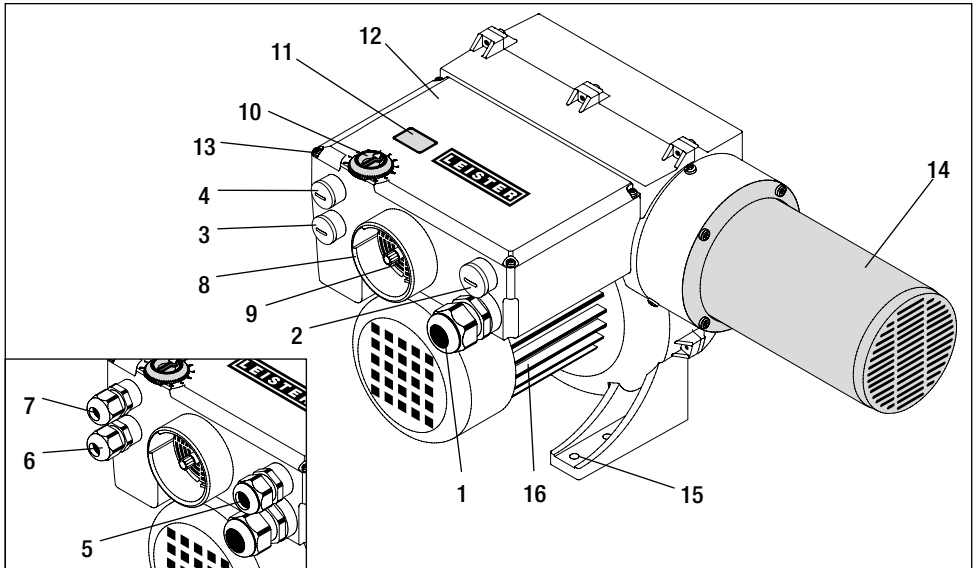
CAUTION: When fixing the tool into an installation, the mains connection must have a suitable **device for disconnect all poles from the mains** with a **3 mm distance between contacts**.

Alarm contact: SPST-NO 250 VAC / 30 VDC, 3 A $\cos \varphi = 1$

Technical data internal dip switch


Open Loop or Closed Loop	Power setting function	Setting level OFF...100 %; 1% steps
	Temperature control function	Setpoint value specification 50 °C...650 °C, 5 °C steps
Setpoint setting Potentiometer or interface	Internal potentiometer	Setpoint value OFF...100 % or 50 °C ...650 °C
	Interface	Setpoint value OFF...100 % or 50 °C ...650 °C

Device description



- | | | | |
|---|---|----|---|
| 1 | Cable gland for mains connection
(mounted ex works) | 7 | Cable gland for interface
(enclosed in the connection housing) |
| 2 | Locking screw for frequency converter
(mounted ex works) | 8 | Flange \varnothing 60 mm |
| 3 | Locking screw for alarm relay
(mounted ex works) | 9 | Air slide |
| 4 | Locking screw for interface
(mounted ex works) | 10 | Potentiometer for temperature setting |
| 5 | Cable gland for frequency converter
(enclosed in the connection housing) | 11 | Display |
| 6 | Cable gland for alarm relay
(enclosed in the connection housing) | 12 | Connection and housing cover |
| | | 13 | Screws for connection housing |
| | | 14 | Heating element tube |
| | | 15 | Mounting base |
| | | 16 | Blower motor |

Preparation

- Remove VULCAN SYSTEM from the packaging.
- Remove the **connection housing cover (12)** by loosening the **screws (13)**.
- Remove warning slip,  read carefully and keep at hand for consultation.
- Remove **locking screws (mounted ex works) for the frequency converter (2), alarm relay (3) and interface (4)**.
- Mount the enclosed **cable glands for the frequency converter (5), alarm relay (6) and interface (7)**, if required.
- If no interface or FU/FC (frequency converter) is used, the **cable glands (5/7)** must be removed and the **locking screws (2/4)** mounted.

Installation

- The installation must ensure that
 - only cold air is supplied.
 - no excess (heat) residue builds up.
 - the device is not subject to jets of hot air from another device.
- Protect the VULCYAN SYSTEM from mechanical vibrations and shocks.
- Fasten the tool on the **mounting base (15)** using four screws Ø M6.
- For installation dimensions, see page 3 (Size).

Air supply

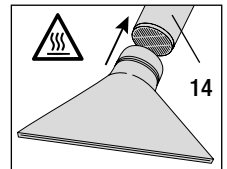
- The integrated blower serves as an air supply (note direction of rotation and compression heating).
- In order to protect the device and heating element, the specified minimum air volume must never be fallen below and the maximum temperature (hottest point measured 3 mm in front of the heating element tube) must never be exceeded (see technical specifications). If the minimum air volume is fallen below, the heat output must be interrupted immediately.
- Reduce air flow as required by use of the **air slide (9)**.
- Observe direction of air flow.
- Use Leister stainless steel filters if the air is dusty. Slides onto **flange (8)**. In the case of particularly critical dusts (e.g. metal, electrically conductive or damp dusts), special filters must be used to avoid short-circuits in the tool.



Attention: always operate device with air supply !

Connection

- The VULCAN SYSTEM must be connected by qualified personnel.
- A suitable device for full disconnection from the mains must be provided in the mains connection!
- It must be ensured that the connection lines do not come into contact with the heating element tube and are not exposed to the hot air jet.
- The device must be connected in accordance with the connection diagram and the terminal arrangement on page 4 (Wiring Diagram) and page 5 (Interface) of the operating instructions:
 - Carry out wiring in the **connection housing (12)**.
- **ATTENTION:** check dip switch settings (see chapter Configuration internal dip switch).
- Mount **connection housing cover (12)** with the **screws (13)**.
- Connect VULCAN SYSTEM to the electrical mains.
- Slide corresponding nozzle or reflector onto **heating element tube (14)**, if required.
- It must be ensured that the hot air can flow out freely, as otherwise the device can be damaged by the excess heat building up (risk of fire!).
- Attention: comply with minimum air volume as per technical data.
- Switch on mains.
- Allow device to cool down after heating mode.



Nozzles / Reflector - change



Danger – can cause burns! Do not touch the heating element tube and nozzle while they are hot.
Allow the tool to cool down before replacing the nozzle or reflector.

Configuration internal dip switch

- Optionally different operating modes which are set with an integrated dip switch

Only operate the dip switch when switched off!

- Steplessly adjustable heat output via red **potentiometer (10)** on the device

1	2
3	4
5	6
7	8
- Steplessly adjustable heat output via interface

3	4
---	---
- Steplessly adjustable temperature via red **potentiometer (10)** on the device

5	6
7	8
- Steplessly adjustable temperature via interface

5	6
7	8
- Integrated temperature display in °C or °F

- The device is fitted with an integral heating element and device protection (see chapter Function of heating element - device protection).

- Settings for selecting the various operating modes:

Mode	CLL Interf °F	OPL Pot °C	Open Loop (power set point) OPL	Closed Loop (temperature set point) CLL	Display
Potentiometer mode (Pot)			1 	5 	°C
			2 	6 	°F
Interface mode (Interf)			3 	7 	°C
			4 	8 	°F

Open Loop mode (OPL)

Display shows power setpoint in % and actual temperature

490
75 P °C

Actual temp
Setpoint %

Closed Loop mode (CLL)

Display shows setpoint temperature and actual temperature

399
450 °C

Actual temp
Setpoint

Function of heating element – device protection

- If the heating element or device overheats (too hot inlet air or excess heat residue), the power supply to the heating element will be interrupted and the working contact of the alarm relay opened. After the heating element or device protection is activated, it will be necessary to reset the VULCAN SYSTEM for reasons of safety!
- IMPORTANT:** measures to take when the heating element or device protection is activated
 - Disconnect device from the mains for 10 seconds
 - Check air supply
 - Check air volume
 - Check air flow
 - Reconnect device to the mains

FU/FC Frequency converter operation

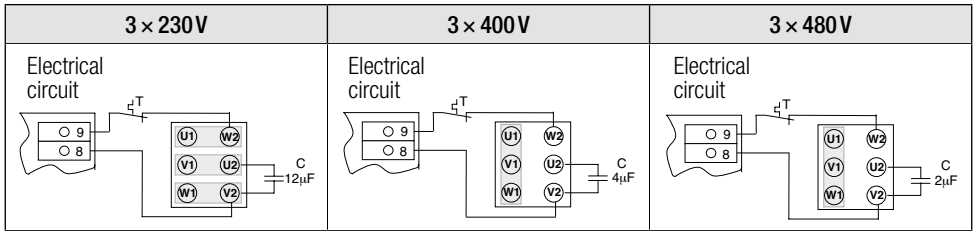
Configuration frequency converter FC 550

- Wiring diagram page 6

Parameters	No.	Default value
Min. frequency	01	20 Hz
Max. frequency	02	60 Hz
Acceleration time	03	5 s
Deceleration time	04	10 s
FC configuration	05	Pr

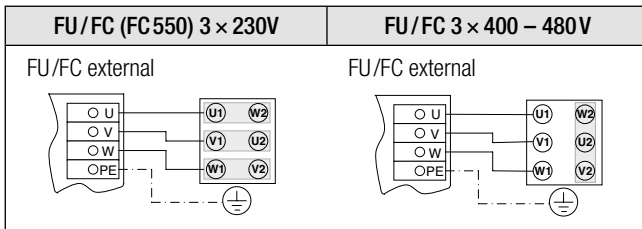
Parameters	No.	Default value
Nominal current	06	0.65 A
Nominal speed	07	2790 rpm
Nominal voltage	08	230
Motor power factor	09	0.70
Preset speed 1	18	20 – 60 Hz
Clock frequency	37	18 kHz

Motor connection status as supplied



FU/FC frequency converter wiring diagram

- The VULCAN SYSTEM is available in three voltage versions and the blower can be activated via the FU/FC (frequency converter) in 3 × 230V and 3 × 400V.
- The following steps have to be followed to connect the frequency converter to the internal circuit:
 - Remove white and brown wires from terminals 8 and 9 of the electric circuit.
 - Remove capacitor (C).
 - Insulate connections of the white wires from the temperature switch (T) with insulating tape and push protruding ends back into the motor box.



Error

Display	Description	Fault correction
Err 01	Device temperature too high	Check environment temperature Check air intake temperature
Err 02	Heating element temperature too high	Check air supply volume
Err 03	Temperature probe	Check probe connection
Err 04 Err 05 Err 06 Err 07	Contact your Leister Service Centres	

Training

Leister Technologies AG and its authorised service points provide free courses in the area of applications.

3D drawings

3D drawings are available from your Service Centre or at www.leister.com

Accessories

- Only Leister accessories may be used.
- Leister offers a wide range of accessories, e.g.
 - Frequency converter FC 550, Art. Nr. 117.359
 - Temperature controls
 - Nozzles
 - Reflectors
- Accessories at www.leister.com

Service and Repairs

- Repairs should only be carried out by authorised **Leister Service Centres**. They guarantee a correct and reliable repair service within reasonable period, using original spare parts in accordance with the circuit diagrams and spare parts lists.

Warranty

- For this tool, the guarantee or warranty rights granted by the relevant distributor/seller shall apply. In case of guarantee or warranty claims any manufacturing or workmanship defects will either be repaired or replaced by the distributor at its discretion. Warranty or guarantee rights have to be verified by an invoice or a delivery document. Heating elements shall be excluded from warranty or guarantee.
- Additional guarantee or warranty claims shall be excluded, subject to mandatory provisions of law.
- Warranty or guarantee shall not apply to defects caused by normal wear and tear, overload or improper handling.
- Warranty or guarantee claims will be rejected for tools that have been altered or changed by the purchaser.



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Your authorised Service Centre is:



Allied Power Tools

12/ 76 Rushdale St, Knoxfield VIC 3180 Australia

T: + 61 3 9764 2911

E: sales@alliedpowertools.com.au

W: www.alliedpowertools.com.au