

# ACOUSTIC CABINETS

Claw Vacuum Pumps  
ACC 0320, ACC 0500

## Installation and Retrofit Instructions



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# 1 Safety

Prior to handling the machine, these instructions should be read and understood. If anything needs to be clarified, please contact your Busch representative.

Read these instructions carefully before use and keep for future reference.

These instructions remain valid as long as the customer does not change anything on the product.

Always wear appropriate personal protective equipment in accordance with the local regulations.

The machine has been designed and manufactured according to state-of-the-art methods. Nevertheless, residual risks may remain, as described in the following chapters and in accordance with the chapter "Intended Use" of the relevant instruction manual of the machine.

These instructions for installation and retrofit also highlight potential hazards where appropriate. Safety notes and warning messages are tagged with one of the keywords DANGER, WARNING, CAUTION, NOTICE and NOTE as follows:



## DANGER

... indicates an imminent dangerous situation that will result in death or serious injuries if not prevented.



## WARNING

... indicates a potentially dangerous situation that could result in death or serious injuries.



## CAUTION

... indicates a potentially dangerous situation that could result in minor injuries.



## NOTICE

... indicates a potentially dangerous situation that could result in damage to property.



## NOTE

... indicates helpful tips and recommendations, as well as information for efficient and trouble-free operation.

## 2 Introduction



### NOTE

**Installation and retrofit instructions.**

**This document is delivered along with a machine/accessory or retrofit kit.**

**It only contains information about the machine/accessory and the retrofit kit installation as well as additional information about changes in the use of the initial product.**

**For all information that is not included in this document, please refer to the original instruction manual of the corresponding machine which content remains valid.**



### WARNING

**In case of foreseeable misuse outside the intended use of the machine.**

**Risk of injuries!**

**Risk of damage to the machine!**

**Risk of damage to the environment!**

- Make sure to follow all instructions described in this manual.

(version with 3phase fan type W2D 300-CQ01-15)

The acoustic cabinet absorbs sound emitted by:

- The housing of the machine
- The gas discharge of the machine
- The gas inlet of the machine



### NOTE

**Illustrations.**

**In this instruction manual, the illustrations may differ from the appearance of the machine.**

### NOTE

**Technical term.**

**In this instruction manual, we consider that the term 'machine' refers to the 'vacuum pump/compressor'.**

## 3 Instruction

### 3.1 Ensuring Delivery Completeness

Make sure that the following parts of the acoustic cabinet are completely available:

Pos.	Qty	Denomination
1	1	Long side panel with cut-out for suction pipe / compressed air pipe
2	1	Long side panel without cut-out
3	1	Short side panel with fan(s)
4	1	Short side panel without fan
5	1	Lid
6	1	Split cover plate for suction pipe / compressed air pipe

### 3.2 Checking the Power Supply and the Control Voltage(s)

Make sure that the power supply for the fan motor(s) complies with the following specifications:

- 50 Hz, 200-240 V (three-phase delta-connection):

Machine Type	Nominal Rated Power	Maximum Starting Current
ACC 0320	300 W	1.04 A
ACC 0500	2 x 300 W	2 x 1.04 A

- 50 Hz, 346-415 V (three-phase star-connection):

Machine Type	Nominal Rated Power	Maximum Starting Current
ACC 0320	300 W	0.6 A
ACC 0500	2 x 300 W	2 x 0.6 A

- 60 Hz, 200-277 V (three-phase delta-connection):

Machine Type	Nominal Rated Power	Maximum Starting Current
ACC 0320	500 W	1.31 A
ACC 0500	2 x 500 W	2 x 1.31 A

- 60 Hz, 346-480 V (three-phase star-connection):

Machine Type	Nominal Rated Power	Maximum Starting Current
ACC 0320	500 W	0.76 A
ACC 0500	2 x 500 W	2 x 0.76 A



#### NOTE

The name plate(s) of the fan(s) state(s) nominal voltages rather than voltage ranges for reasons of UL-certification!

Make sure that the control voltage(s) for the temperature switch(es) on the fan motor(s) (TS1/TS2) complies/comply with the following specifications:

- Maximum voltage: 230 V
- Nominal frequency: 50/60 Hz
- Maximum nominal current: 4 A

## 3.3 Installation Conditions



### NOTICE

**Use of the machine outside of the permitted installation conditions.**

**Risk of premature failure!**

**Loss of efficiency!**

- Make sure that the installation conditions are fully respected.
- 

- Make sure that the environment of the machine is not potentially explosive.
- Make sure that the installation space or location is protected from weather and lightning.
- Make sure that the installation space or location is vented such that sufficient cooling of the machine is provided.
- Make sure that cooling air inlets (CAI) and outlets (CAO) are not covered or obstructed and that the cooling air flow is not affected adversely in any other way.
- Make sure that enough space remains for maintenance work.
- Make sure not to put any pressure on the machine, e.g. by standing on it or storing objects on it.
- Make sure that the machine is placed or mounted horizontally on a flat surface.

If the machine is installed outdoor:

- Provide a protective cover against the weathering effects.

## 4 Electrical Connection



### DANGER

Live wires.

Risk of electrical shock!

- Electrical installation work must only be executed by qualified personnel.

INSTALLATION(S) CURRENT PROTECTION:

### 4.1 Electrical Connection of the Monitoring Devices



### WARNING

The electrical connection of the monitoring devices fitted as standard on the machine (not optional) is mandatory to ensure the safety of the machine and the users.



### NOTE

To prevent potential nuisance alarms, Busch recommends that the control system is configured with a time delay of at least 20 seconds.

### 4.1.1 Wiring Diagram Temperature Switch

Make sure that the drive motor of the machine is not connected

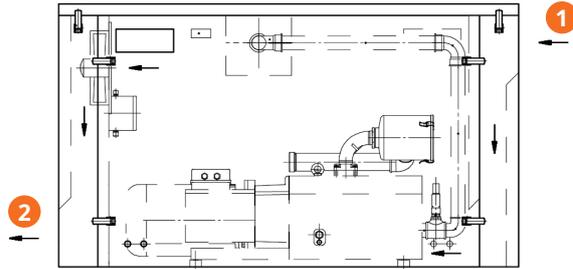
Place the side panels in the vicinity of the machine, yet leaving enough space around the machine to perform the connection works:

- The long side panel with cut-out such that the cut-out will match the location of the suction pipe of the machine

**For the machine MM ...:**

- The short side panel with the fan(s) such that it will stand next to the motor of the machine

Illustration shows the ACC 0500 with an MM 1322 AP installed



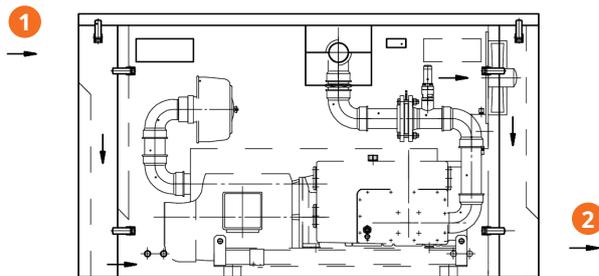
Description			
1	Air inlet	2	Air discharge

Other versions of MM machine are different from pipework. If anything of assembly remains to be clarified, contact your Busch representative and ask for drawings.

**For the machine MI ...:**

- The short side panel without fan(s) such that it will stand next to the motor of the machine

Illustration shows the ACC 0500 with an MI 1502 BP installed

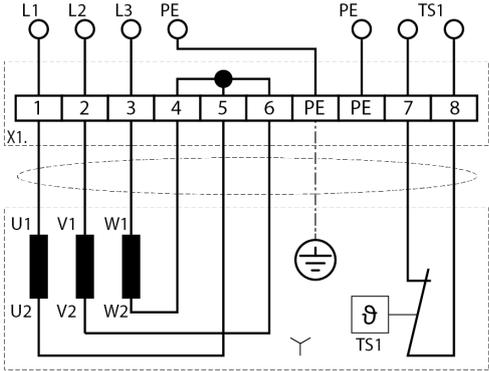


Description			
1	Air inlet	2	Air discharge

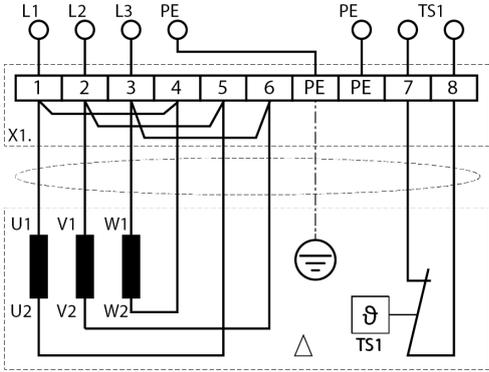
Other versions of MI machine are different from pipework. If anything of assembly remains to be clarified, contact your Busch representative and ask for drawings.

- Route the cables to the drive motor of the machine and to the acoustic cabinet fan motor(s) through the cable ducts of the side panels.
- Connect the drive motor of the machine (see installation and operating instructions of the machine)
- Open the terminal box for the fan motor wiring and connect the fan motor(s) as follows

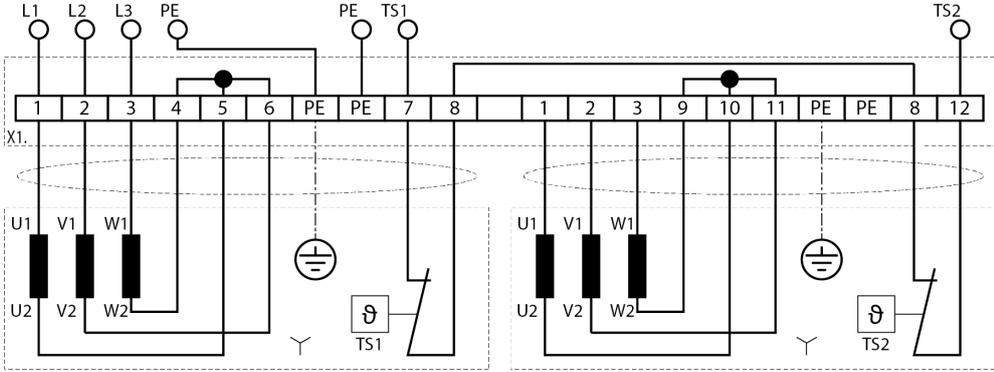
Acoustic cabinets ACC 0320 are delivered ex-works with star-connection.



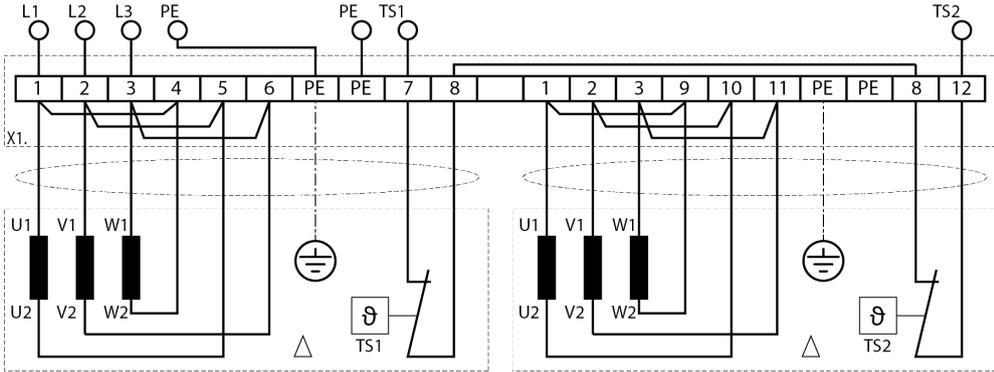
The delta-connection requires a modification of the ex-works wiring by the customer.



Acoustic cabinets ACC 0500 are delivered ex-works with star-connection.



The delta-connection requires a modification of the ex-works wiring by the customer.



**Wire colors:**

Wire colors	
U1 = Black	U2 = Green
V1 = Blue	V2 = White
W1 = Brown	W2 = Yellow
PE = Yellow/Green	TS1/TS2 = Gray

The temperature switches feature normally closed contacts, i.e. they open the circuit when the temperature gets too high.

The temperature switches do not need to be reset, they reset automatically when the temperature falls.

- Integrate the temperature switch(es) TS1/TS2 into the machine control such that the interruption of the circuit will stop both the cooling fan(s) and the machine.  
Closing of the circuit after cooling down shall not start the machine or the fan(s) self-acting. The restart of the fan(s) and the machine shall happen only by action from the operating personnel after remedy of the cause of the excessive temperature.
- Start the fan(s) and check the blowing direction: the fan(s) shall blow the air from the inside to the outside of the acoustic cabinet

If the blowing direction is wrong:

- Switch any two of the phases

When the connections are done and no other works need to be performed on the machine:

- Close the terminal box for the fan motor(s)
- Put the long side panel with cut-out close to the machine such that the suction pipe/compressed air pipe will be located in the center of the cut-out of the side panel
- Mount the split cover plate for the suction pipe/compressed air pipe
- Put the two short side panels against the long side panel (MM: the side panel with the fan(s) next to the motor of the vacuum pump; (MI: the side panel without fan(s) next to the motor of the vacuum pump) and close the latches
- Put the remaining long side panel against the two short side panels and close the latches
- Put the lid on top of the side panels and close the latches.

## 5 Operating Notes



### WARNING

#### Risk of Injury!

- Do not open any panels during operation of the fan(s).



### CAUTION

#### Machine will overheat if the cooling fans of the acoustic cabinet is not running.

#### Risk of damage to the machine!

- Make sure the machine is electrical connected to the cooling fan of the acoustic cabinet and can only operate when the cooling fans is running.

The acoustic cabinet is suitable for ambient temperatures from 0 to 40 °C.

- After shutting down the machine let the fan(s) run for approx. 5 to 10 minutes more (in order to avoid heat accumulation inside the acoustic cabinet)

## 6 EU Declaration of Conformity

This Declaration of Conformity and the CE-markings affixed to the nameplate are valid for the machine within the Busch scope of delivery. This Declaration of Conformity is issued under the sole responsibility of the manufacturer.

When this machine is integrated into a superordinate machinery the manufacturer of the superordinate machinery (this can be the operating company, too) must conduct the conformity assessment process for the superordinate machine or plant, issue the Declaration of Conformity for it and affix the CE-marking.

The manufacturer

**Busch Produktions GmbH**  
**Schauinslandstr. 1**  
**DE-79689 Maulburg**

declares that the machine: ACC 0320, ACC 0500

fulfill(s) all the relevant provisions from EU directives:

- 'Machinery' 2006/42/EC
- 'Electromagnetic Compatibility' (EMC) 2014/30/EU
- 'RoHS' 2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment (incl. all related applicable amendments)

and comply(-ies) with the following harmonized standards that have been used to fulfill those provisions:

Standard	Title of the Standard
EN ISO 12100 : 2010	Safety of machinery - Basic concepts, general principles of design
EN 1012-1 : 2010 EN 1012-3 : 2013	Compressors - Safety requirements - Part 1 and Part 3
EN 1012-2 : 1996 + A1 : 2009	Vacuum pumps - Safety requirements - Part 2
EN 60204-1 : 2018	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
EN ISO 13857 : 2019	Safety of machinery - Safety distances to prevent hazard zones being reached by the upper and lower limbs
EN ISO 2151 : 2008	Acoustics - Noise test code for compressors and vacuum pumps - Engineering method (grade 2)
EN IEC 61000-6-2 : 2019	Electromagnetic compatibility (EMC) - Generic standards. Immunity for industrial environments
EN IEC 61000-6-4 : 2019	Electromagnetic compatibility (EMC) - Generic standards. Emission standard for industrial environments

Legal person authorized to compile the technical file and authorized representative in the EU  
(if the manufacturer is not located in the EU):

**Busch Dienste GmbH**  
**Schauinslandstr. 1**  
**DE-79689 Maulburg**

Maulburg, 02.01.2024



**Dr. Martin Gutmann**  
**General Manager**  
**Busch Produktions GmbH**

# 7 UK Declaration of Conformity

This Declaration of Conformity and the UKCA-markings affixed to the nameplate are valid for the machine within the Busch scope of delivery. This Declaration of Conformity is issued under the sole responsibility of the manufacturer.

When this machine is integrated into a superordinate machinery the manufacturer of the superordinate machinery (this can be the operating company, too) must conduct the conformity assessment process for the superordinate machine or plant, issue the Declaration of Conformity for it and affix the UKCA-marking.

The manufacturer

**Busch Produktions GmbH**  
**Schauinslandstr. 1**  
**DE-79689 Maulburg**

declares that the machine: ACC 0320, ACC 0500

fulfill(s) all the relevant provisions from UK legislations:

– Restriction of the use of certain hazardous substances in Electrical and Electronic Equipment Regulations 2012

and comply(-ies) with the following designated standards that have been used to fulfill those provisions:

Standard	Title of the Standard
EN ISO 12100 : 2010	Safety of machinery - Basic concepts, general principles of design
EN 1012-1 : 2010 EN 1012-3 : 2013	Compressors - Safety requirements - Part 1 and Part 3
EN 1012-2 : 1996 + A1 : 2009	Vacuum pumps - Safety requirements - Part 2
EN 60204-1 : 2018	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
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EN IEC 61000-6-4 : 2019	Electromagnetic compatibility (EMC) - Generic standards. Emission standard for industrial environments

Legal person authorized to compile the technical file and importer in the UK  
(if the manufacturer is not located in the UK):

**Busch (UK) Ltd**  
**30 Hortonwood**  
**Telford - UK**

Maulburg, 02.01.2024



**Dr. Martin Gutmann**  
**General Manager**  
**Busch Produktions GmbH**

# Notes

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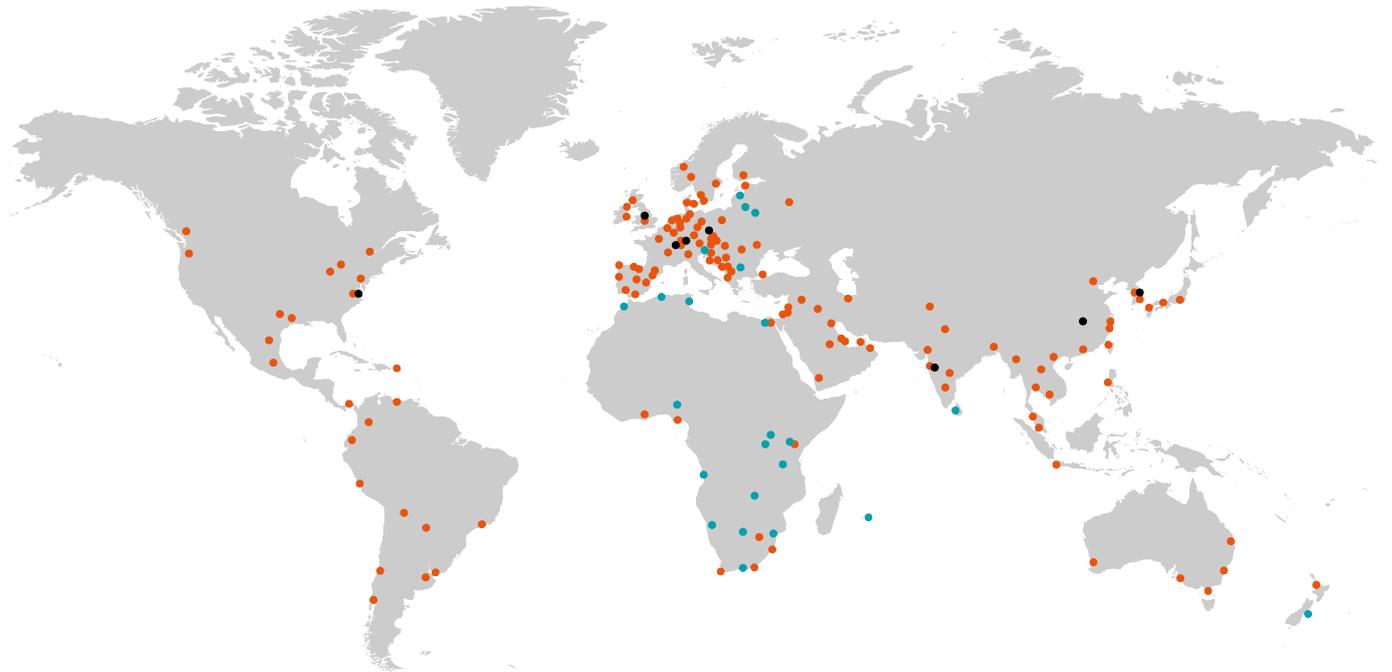
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# Busch

## Vacuum Solutions

With a network of over 60 companies in more than 40 countries and agencies worldwide, Busch has a global presence. In every country, highly competent local personnel delivers custom-tailored support backed by a global network of expertise. Wherever you are. Whatever your business. We are there for you.



● Busch companies and Busch employees   ● Local representatives and distributors   ● Busch production site

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