GEOVENT

INSTRUCTIONS MANUAL

MULTIBOX III

source capture control panel

Version 1.0 17.05.18

www.geovent.dk

1.0 General safety precautions

IMPORTANT – Please study all the instructions before mounting and commissioning.

Please keep these instructions in a safe place and instruct all users in the function and operation of the product.

Installation and service should only be implemented after studying the wiring diagram thoroughly.

Avoid the dismantling of any factory-mounted parts, since it impedes the commissioning of the equipment.

All electrical installations must be carried out by an authorised electrician.

1.1 Danger

Dismantling parts on the MultiBox whilst in operation could be deadly dangerous.

Always disconnect the MultiBox from the mains, when removing the cover.

2.0 Adjustment of parameters

The MultiBox contains sevaral software programs, which controls how the MultiBox behaves. The MultiBox is by default set to 530, which is the program that is to be used in 9 out of 10 situations

1. Connect the MultiBox to 230 Volts as shown in the diagram

2. The Display will show “P0” on power-up

3. Press “ENTER” and select the appropriate soft ware program by scrolling with the “+” and “-“ keys and the press “ENTER” once more.

4. Shift to P1 (the set point parameter) by using the “+” key and the press “ENTER” – adjust the value to your desired set point pressure (in Pascals) and press “ENTER” once more.

5. Use the “+” until you get to P10.

6. Keep the “ENTER” key pressed until you get a beep (tells you that the changes you have made are now saved in EEPROM).

7. In case of failure – cut the power for at least 20 seconds and put it back on. The MultiBox is now reset and you must start the programming procedure again.

Tabel of general FV56X parameters				
P75	Service timer	0	0-36	0=Off 1-36=months between service
P76	Call service		Max 16 letters	Press and hold arrow down when connecting main power to type service message
P77	Reg volt start	5V	0-10V	Regulator start up voltage
P78	Reg delay start	5	0-240	Regulator start up time in seconds
P92	Start position	0	0-1-2	0=closed, 1=open, 2=frees
P93	Zero calibration	No	Yes	Calibration of pressure zero (pa)
P94	Manual start/ stop	Yes	Yes No	Yes= Manual start No=Auto
P95	Alarm delay	10	3600	Time delay before alarm signal
P96	Language select	DK	GB	select DK or GB language
P97	Disable alarm sound	0	0-1	Disable alarm sound when P97=1
P98	PIN code	0	2211	PIN code on / off
P99	Parameter Reset	No	Yes	Yes = Reset all parameters
P00	Select of version	550	Table 1	Software version selection

The software is applied for PID feedback regulation of process air extraction by means of frequency inverter or electric or pneumatic damper. The regulator PID signal can be inverted, and thereby have opposite direction. The Transmitter has 0-10V signal for calculated air extraction flow, and slave control of balanced Inlet air.

The following start-up procedure is recommended:

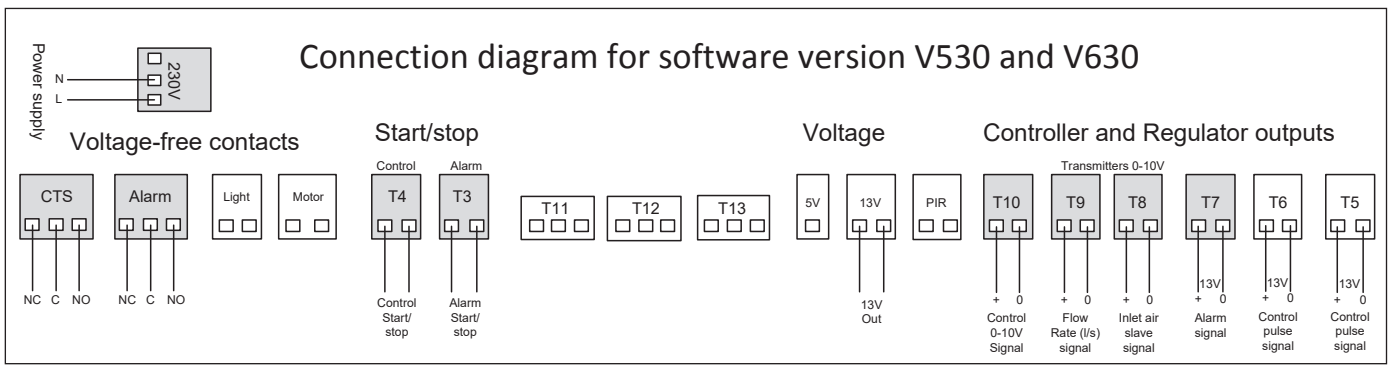
- Installation according to diagram below
- Green or Red Alarm diode when T3 is active
- Select software V530 or V630 in Parameter P00
- Connect one pressure sensor tube to ventilation ducting, or 2 sensor tubes to a flow meter
- Select desired regulator setpoint (Pa) in P01
- Select min. and max. alarm limits in P02 and P03
- Control signal in T10 can be inverted in P16.
- Terminal T10 is connected to freq. inv. or damper
- Terminal T8 with slave signal for balanced inlet air is connected to inlet air frequency inverter
- Terminal T9 with flow signal (l/s) can be connected to Sumbox such as version V670 or V675.
- Max fan capacity (50 Hz) is entered into P14
- Controller start in T4 or pres ESC (when P94=yes).

After start-up the following adjustments are possible:

- Adjust PID regulator: higher P06-value will speed up the regulator, and higher P07-value will moderate the regulator and reduce instability
- Adjust P22 and P23 to max Room and Inlet air flow
- T8 has 0-10V signal for Inlet air slave control
- T9 has 0-10V signal for flow rate transmitter
  The regulator maintains the actual set point as indicated in P10, and transmit 0-10V signals for flow rate(T9) and slave control of Inlet air (T8) with frequency control

Parameter list

Par.	Label	Def.	Max	Def	Max	Description
P00	Model number	530	530	630	630	Software version number
P01	Setpoint+pressure	1000	5000	100	1000	Adjust PID setpoint + pressure
P02	Min. alarm limit (Pa)	200	4999	20	999	Monitor alarm min. limit (Pa)
P03	Max. alarm limit (Pa)	5000	5000	1000	1000	Monitor alarm max. limit (Pa)
P04	Time delay (sec)	10	3600	10	3600	Time delay to shut down
P05	Neutral zone (Pa)	3	1000	3	1000	Neutral zone from set point
P06	P-factor (PID)	3	200	3	200	Regulator P-factor (speed)
P07	I-time (PID) (sec)	3	1000	3	1000	Regulator I-time (moderation)
D10	Pressure+setpoint	0	5000	0	1000	Actual press.+setpoint values
P14	Max flow for T10	1000	9999	1000	9999	Max capacity (l/s) main fan
P16	Invert PID signal	No	Yes	No	Yes	No = normal PID ; Yes = invert
D18	Flow display (l/s)	0	-	0	-	Flow with K-factor in P17
P22	Max Room flow	1	9999	1	9999	Room fan max capacity (l/s)
P23	Max Inlet flow	1000	9999	1000	9999	Inlet fan max capacity (l/s)
P24	Residual flow	0	9999	0	9999	Residual fan max capacity
D49	Display T10 (V)	0	-	0	-	0-10V value from PID (V)
D50	Display T9 (V)	0	-	0	-	10-0V Room air value (V)
D51	Display T8 (V)	0	-	0	-	0-10V Inlet air value (V)
P52	Min. limit T10 (V)	0	9	0	9	Adjust voltage limit for T10
P53	Max. limit T10 (V)	10	1	10	1	Adjust voltage limit for T10
P54	Min Limit T9 (V)	0	9	0	9	Adjust voltage limit for T9
P55	Max limit T9 (V)	10	1	10	1	Adjust voltage limit for T9
P56	Min Limit T8 (V)	0	9	0	9	Adjust voltage limit for T8
P57	Max limit T8 (V)	10	1	10	1	Adjust voltage limit for T8
P73	Flow rate (10V)	1000	9999	1000	9999	Flow (l/s) limit T9 at 10V output



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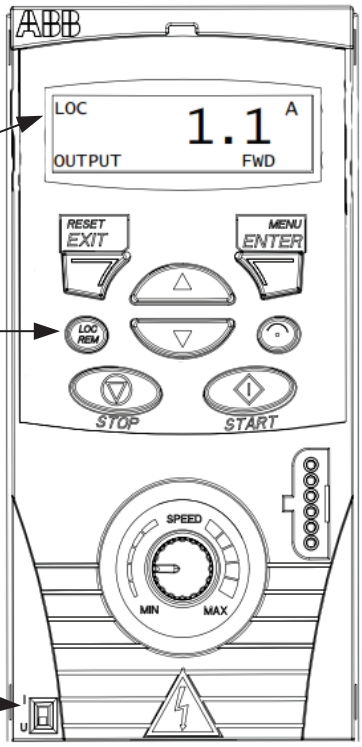
Quick guide for frequency inverter setup.



If Multibox II is used, control mode is set at ”REM”.

”LOC”	=	Control using front panel.
”REM”	=	External PID control.

”AI” adjustment type is set to ”U” on the micro switch (0-10V)

Access parameter list.

Exit


Arrows

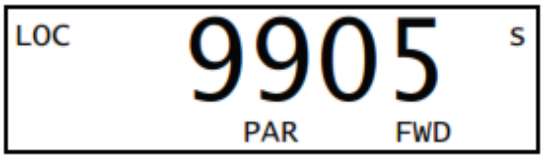
Menu

Press menu and select Par L

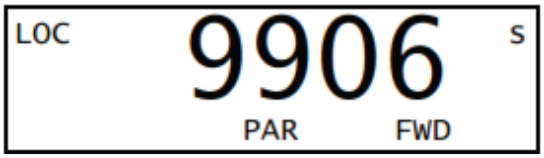
Now it is possible to scroll through the parameter list using arrows.
(Shown: example)

Motor data setup

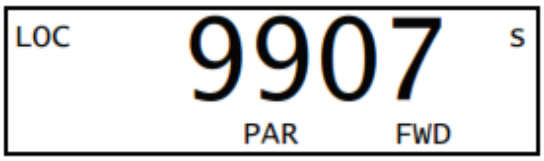
Setup the motor´s rated voltage as indicated on the motor label. For example 400V



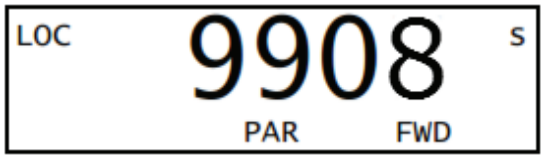
Setup the motor´s rated current as indicated on the motor label. For example 2,6A



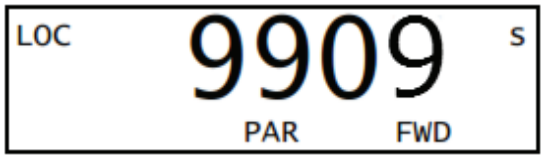
Setup the motor´s rated frequency as indicated on the motor label. For example 50Hz



Setup the motor´s rated speed as indicated on the motor label. For example. 2830 rpm

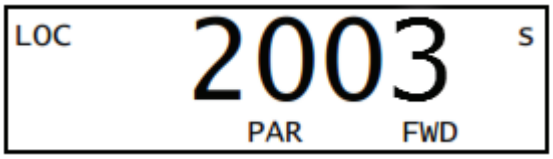


Setup the motor´s rated power consumption as indicated on the motor label. For example 4Kw

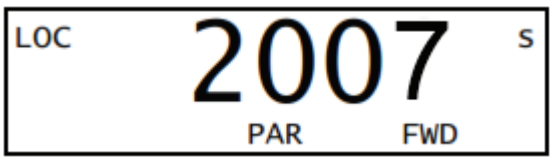


Operation Limits

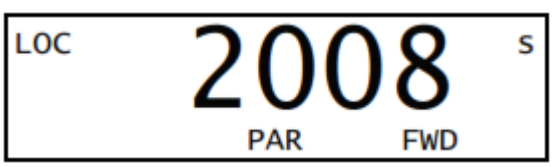
Setup the allowed current. In many cases the same as indicated on the label on the motor. For example. 2,6A



Setup minimum frequency.
Set at 15Hz. If set lower, both fan and frequency inverter may suffer damage.

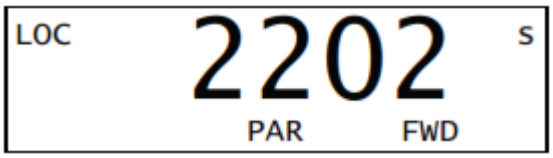


Set max. frequency.
Set at max allowed frequency for the current fan.

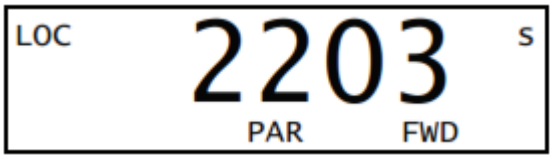


Ramp time setup.

Setup ramp up time.
Normally about 20 seconds.
(Ramp time correlates with fan size – the larger the fan, the longer the ramp time)

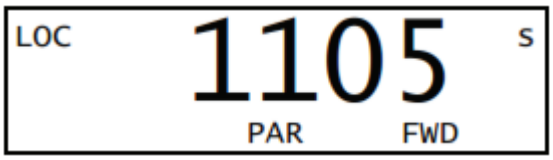


Setup ramp down time.
Normally about 50 seconds
(Ramp time correlates with fan size – the larger the fan, the longer the ramp time



Setup max reference.

Setup the value(Hz) of max reference voltage (10V).
If you want the fan to run at for ex. 55Hz set it at 55Hz.
(If you do not set this parameter the fan will not run faster than 50Hz)



This is a quick guide for setting up the frequency inverter with the minimu required settings.
These settings apply to a typical Geovent product constellation, and are not directly applicable for use with other products.
For settings of other parameters/macros and detailed explanation hereof, see the instructions manual from ABB.

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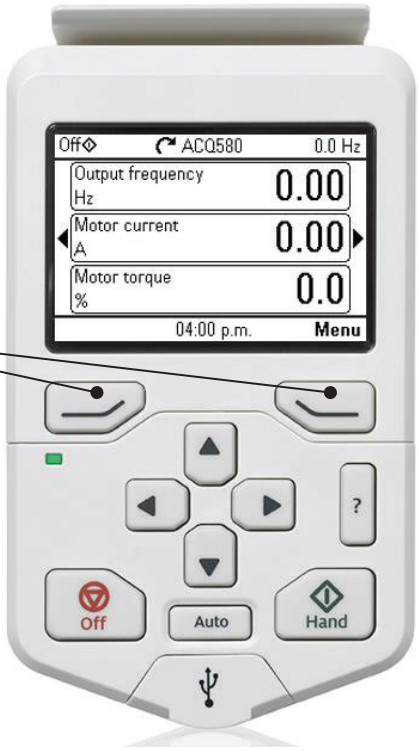
Quick guide til opsætning af frekvensomformer.



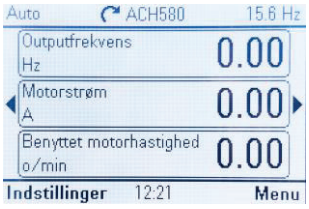
Funktionstaster.

OBS: Styres der med Multibox III skal styringsformen indstilles til ”AUTO”.

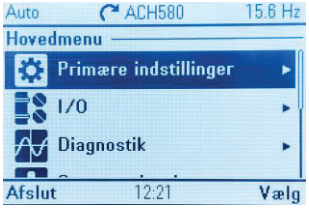
”Hand”	=	Styring via. frontpanelet.
”Auto”	=	Ekstern PID styring.

Adgang til parameterlisten.

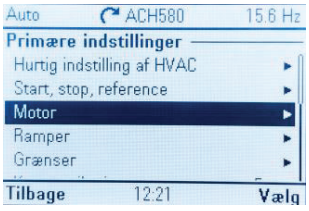
Tryk menu.



Vælg ”Primære indstillinger”.

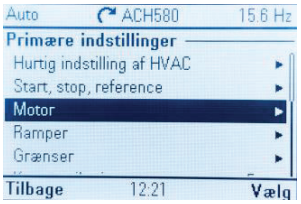


Her kan du vælge hvad du vil indstille, på de følgende sider vil du se de indstillinger vi anbefaler som minimum.



Opsætning af motordata.

Under ”primære indstillinger” vælges motor.



Her indstilles motorens nominelle strøm som angivet på mærkepladen på motoren. Feks. 2,6A

Strøm

Her indstilles motorens nominelle hastighed som angivet på mærkepladen på motoren. Feks. 2830 o/m

Hastighed

Her indstilles motorens nominelle spænding som angivet på mærkepladen på motoren. Feks. 400V

Spænding

Her indstilles motorens nominelle frekvens som angivet på mærkepladen på motoren. Feks. 50Hz

Frekvens

Her indstilles motorens nominelle effekt som angivet på mærkepladen på motoren. Feks. 4Kw

Effekt

Opsætning af grænser.

Under ”Primære indstillinger” vælges ”grænser”.

Her indstilles minimum frekvens.
Indstilles til 15Hz, sættes den under vil både ventilator og frekvensomformer kunne tage skade.

Minimum frekvens

Her indstilles maximum frekvens.
Indstilles til den max tilladte frekvens for den aktuelle ventilator.

Maksimum frekvens

Her indstilles den max tilladte strøm. I mange tilfælde vil dette være det samme som angivet på mærkepladen på motoren. Feks. 2,6A

Maksimum strøm

Opsætning af rampetider.

Under ”Primære indstillinger” vælges ”Ramper”.

Her indstilles rampe op tiden.
Indstilles normalt til ca. 20 sekunder.

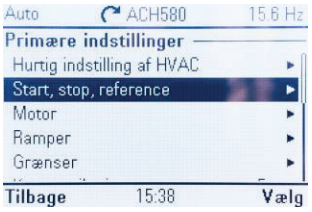
Accelerationstid

Her indstilles rampe ned tiden.
Indstilles normalt til ca. 50 sekunder.

Decelerationstid

Opsætning af max reference.

Under ”Primære indstillinger” vælges ”Start, stop,reference”.
På næste side vælges ”Primært automatisk styrested” og på efterfølgende side ”AI1 -skala”

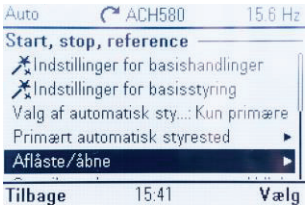


Her indstilles værdien (Hz) af max reference spænding (10V).
Skal ventilatoren køre eks. 55Hz indstilles denne til 55Hz.
(Undlades dette vil ventilatoren ikke køre over 50Hz)

Skala maks

Opsætning af startbetingelser.

Under ”Start, stop, reference” vælges ”Aflåst/åbne”.

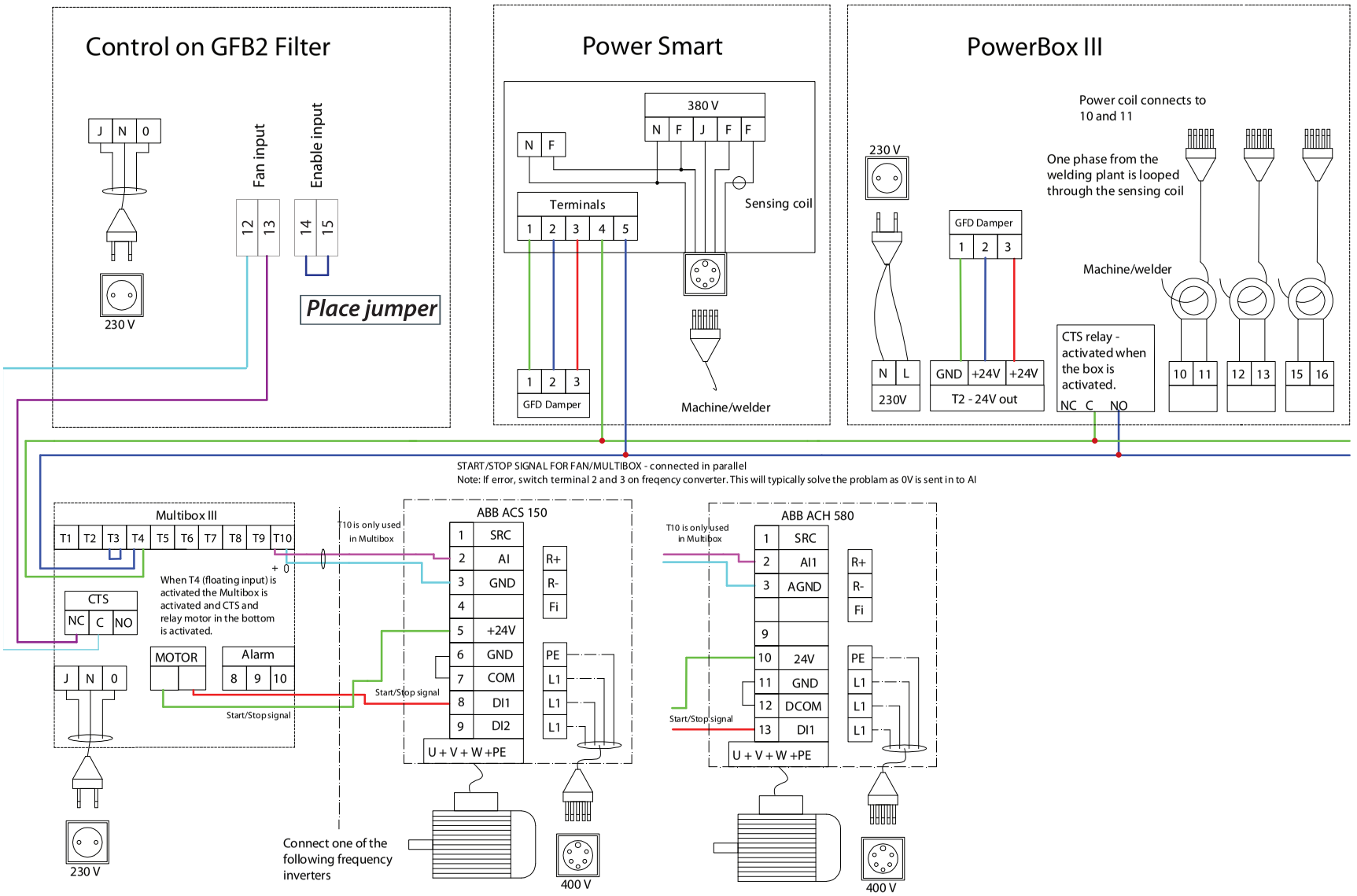


Her vælges om man vil bruge DI4 som startbetingelse.
Som standard er den indstillet til DI4. Vi anbefaler at fjerne fluebenet.

Brug start interlock 1

Dette er en quick guide til indstilling af de som minimum krævede indstillinger. Disse indstillinger er for en typisk standard Geovent produkt sammensætning, og kan ikke bruges direkte sammen med andre produkter.
For opsætning af andre parametre/makroer og detaljerede forklaringer af parametre/makroer henviser vi til manualen fra ABB.

MULTI COUPLING DIAGRAM - TERMINALS, MULTIBOX AND FREQUENCY INVERTERS



Adjusting the frequency inverter:
See manual - important parameters to adjust:

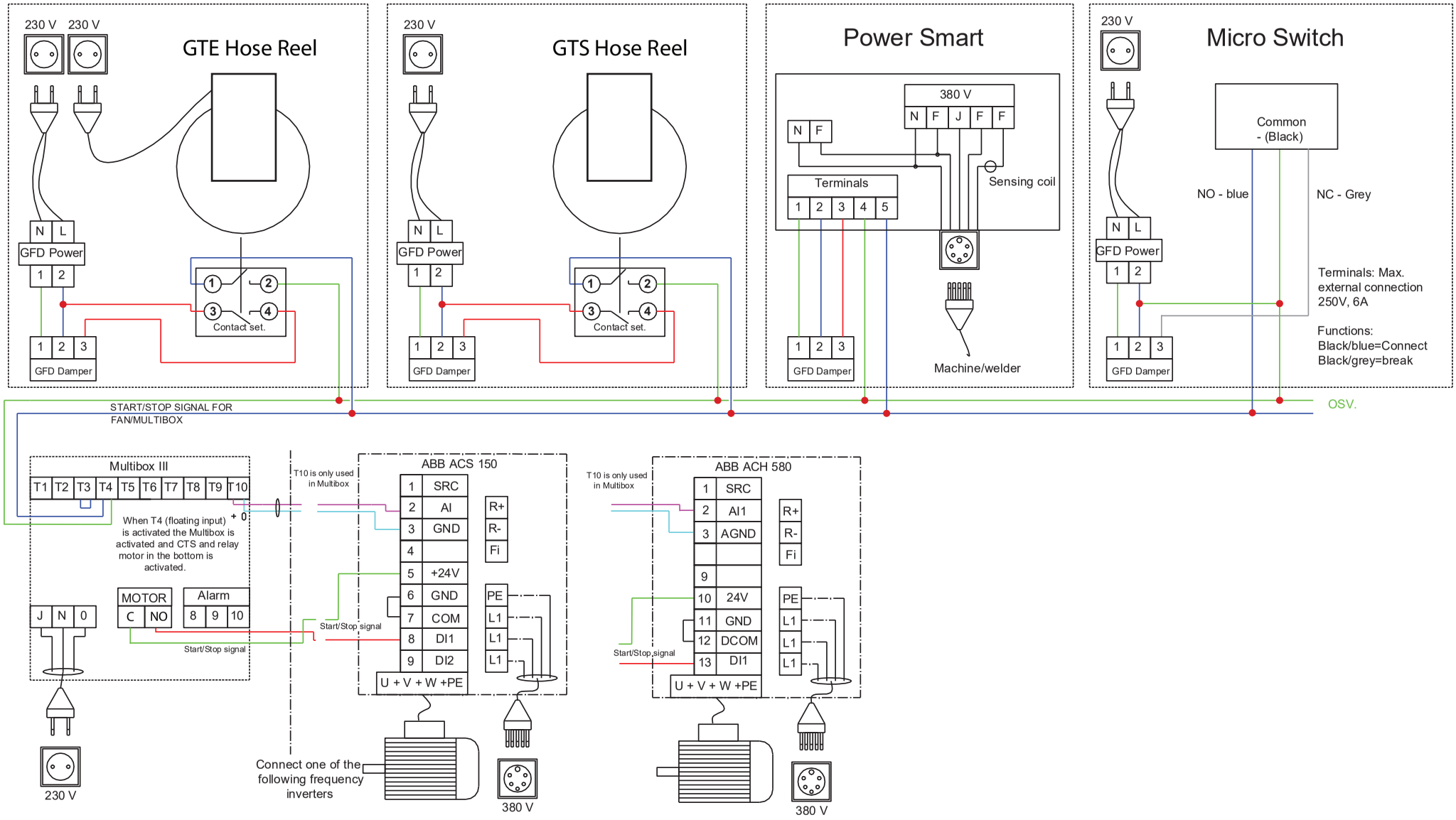
Motor data: Typically parameter group 99
Ramp up/down: Typically parameter group 22.
Frequency Max/Min:
Typically parameter group 20 and 11

IMPORTANT
Jumper on the bottom (S1) must be switched from "I" to "U"
This will change output from current to voltage.
Remember to bridge GND and COM.

Adjusting Multibox III:

Quick guide - also see manual
P0: Version selector - select 530 (most common)
P1: Adjustment set point [Pa]
P2: Min. Alarm limits [s] at too low pressure
P3: Max. Alarm limit [s] at too high pressure
P10: shows current pressure.

MULTI COUPLING DIAGRAM - TERMINALS, MULTIBOX AND FREQUENCY INVERTERS



Warranty
Geovent A/S grants a warranty for products, which are defective; when it can be proved that the defects are due to poor manufacture or materials on the part of Geovent. The warranty comprises remedial action (reparation or exchange) until one year after date of shipment. No claims can be made against Geovent A/S in relation to loss of earnings or consequential loss as a result of defects on products from Geovent.

User liability
In order for Geovent to be capable of granting the declared warranty, the user/fitter must follow this Instruction Manual in all respects.

Under no circumstances may the products be changed in any way, without prior written agreement with Geovent A/S.

Declaration of Conformity

GEOVENT
HOVEDGADEN 86 • DK-8831 LØGSTRUP
(+45) 8664 2211 • salg@geovent.dk

The manufacturer: GEOVENT A/S
Hovedgaden 86
DK-8831 Løgstrup

hereby declares that:

The product: Multibox III
Models: FV56X

has been manufactured in compliance with the following directives and standards:

Safty:

EN60730-1:2012 – Automatic electrical controls for household and similar use.
Part 1: General requirements.

EMC:

EN 61000-6-1:2007 – Electromagnetic compatibility (EMC) –
Part 6-1: Generic standards - Immunity for residental, comercial and light-industrial envioronments.

EN 61000-6-3:2007 – Electromagnetic compatibility (EMC) –
Part 6-3: Generic standards.
Emission standard for residental, comercial and light-industrial envioronments.

EN 61000-6-3/A1:2011 – Electromagnetic compatibility (EMC) –
Part 6-3: Generic standards.
Emission standard for residental, comercial and light-industrial envioronments.

EN 61000-6-3/A1/AC:2012 – Electromagnetic compatibility (EMC) –
Part 6-3: Generic standards.
Emission standard for residental, comercial and light-industrial envioronments.

RoHS: Directive 2011/65/EU

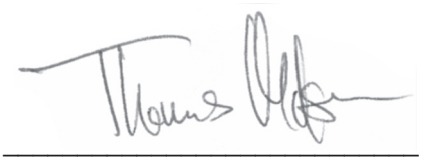
Additional information:

The product meets the specifications in EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EC and is CE-marked.

The product is testet for normal use.

Date: 17/05 2018

Position: Managing Director
Name: Thomas Molsen

Signature: 

CE

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HOVEDGADEN 86 • DK-8831 LØGSTRUP
(+45) 8664 2211 • salg@geovent.dk