



MS-887VFD

Technical reference

1. Introduction

1.1. Description

MS-887VFD is a compressor controller dedicated to air compressors with various operating power. It controls motors in star – triangle configuration.

Controller features include:

- Automatic switching of star and triangle motor configurations
- Supervision of pressure, oil temperature and motor current draw
- Selection of configurable outputs
- Support for external power line asymmetry modules
- Password protection of control parameters
- Number of counters for service time supervision
- Support for heaters, driers and condensation drain
- Networked operation mode (EIA-485)
- Remote control mode
- Multiple language versions

1.2. List of supported sensors

- Pressure sensor – 4-20mA current loop sensor
- Auxiliary pressure sensor – 4-20mA current loop sensor
- Oil temperature sensor - PT100
- Air temperature sensor - PT100
- Motor temperature sensor - KTY84
- Power line asymmetry detector
- Motor current transformer
- Vacuum sensor
- Pressure switch
- Thermal switch
- Air filter, oil filter and separator sensors

1.3. Selection of language version

In the MS-887VFD controller, you can set one of the four available languages:

- polish
- english
- russian
- german

We are doing this at parameter **003u**.

1.4. References

In the following part of the instructions, two types of parameters will be used:

- **s** - service parameter - for example **014s**
- **u** - user parameter - for example **003u**

2. Technical data

2.1. Electrical characteristics

Table 1: Electrical characteristics

Parameter	Value
Supply voltage	24VAC 50/60Hz, 24VDC
Power consumption	10W max
Relays max switching voltage	250VAC
Relays max switching current, resistive	5A
Relays max switching current, inductive	0,5A
Current loop maximum current	28mA
Maximum current draw from internal reference voltage	250mA
Digital inputs min voltage	-0,5V DC
Digital inputs max voltage	24,7V DC
Analog inputs min voltage	-0,5V DC
Analog input max voltage	24,7V DC

2.2. Mechanical information

Table 2: Mechanical information

Parameter	Value
Enclosure dimensions	180x80x62 mm
Unit weight (without packaging)	1kg
Panel mounting style	Mounting tabs

2.3. Operating conditions

Table 3: Operating conditions

Parameter	Value
Operating temperature	-15 ÷ 50 °C
Storage temperature	-20 ÷ 70°C
Relative humidity	10 ÷ 90 %, without condensation

3. Electrical connections

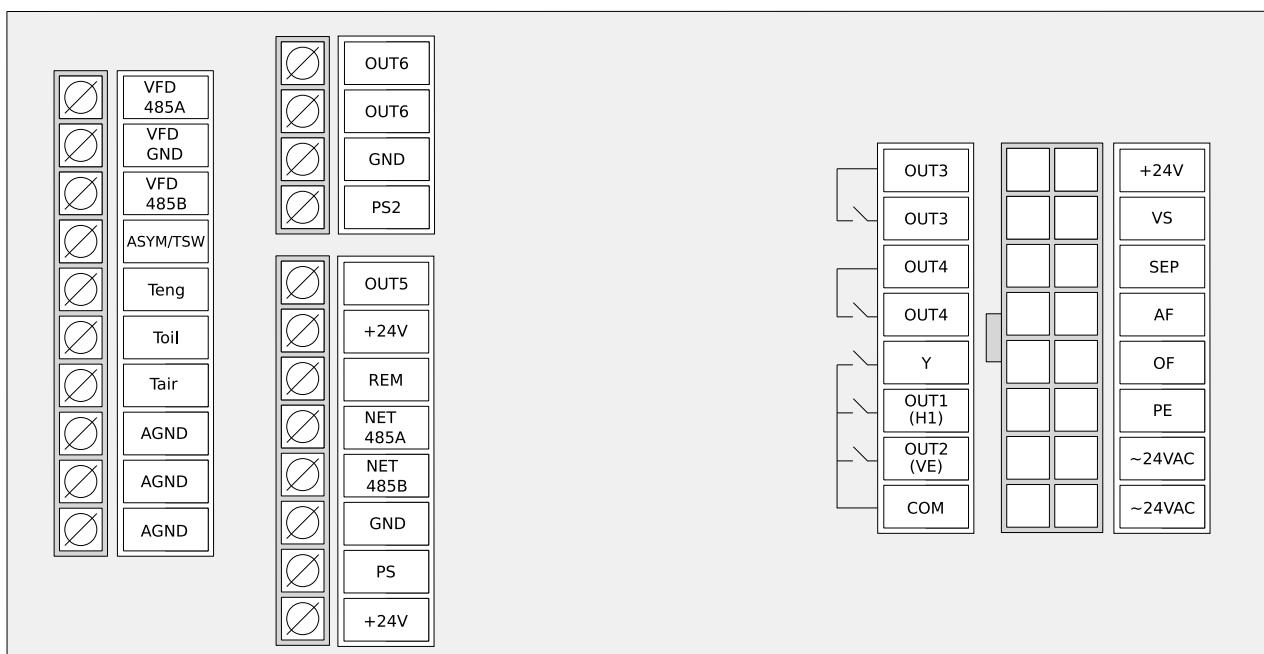


Figure 1: Electrical connections of MS-887VFD

Table 4: Pinout of connector 1

Name	Description
VFD 485A	VFD EIA-485 non-inverting terminal
VFD GND	VFD EIA-485 ground terminal

Table 4: Pinout of connector 1

Name	Description
VFD 485B	VFD EIA-485 inverting terminal
ASYM	Power line asymmetry sensor input
Teng	Engine temperature sensor input, KTY84
Toil	Oil temperature sensor input, PT100
Tair	Air temperature sensor input, PT100
AGND	Analog ground
AGND	Analog ground
AGND	Analog ground

Table 5: Pinout of connector 2

Name	Description
OUT6	General configurable relay output (default: Error relay output)
OUT6	General configurable relay output (default: Error relay output)
GND	Digital ground
PS2	4-20mA current loop auxiliary pressure sensor input

Table 6: Pinout of connector 3

Name	Description
OUT5	General configurable relay output (default: Acknowledgement output)
+24V	24V internal voltage reference output
REM	Remote control mode input
NET 485A	Network operation EIA-485 non-inverting terminal
NET 485B	Network operation EIA-485 inverting terminal
GND	Digital ground
PS	4-20mA current loop pressure sensor input
+24V	24V internal voltage reference output

Table 7: Pinout of connector 4

Name	Description
OUT3	General configurable relay output (default: Condensate drain output)
OUT	General configurable relay output (default: Condensate drain output)
OUT2	General configurable relay output (default: Remote operation mode slave control relay output, normally open)
OUT2	General configurable relay output (default: Remote operation mode slave control relay output, normally open)
Y	Y Valve control line output
OUT1	General configurable relay output (default: Heater1)
OUT2	General configurable relay output (default: Fan control line output)
COM	Relay outputs common terminal
+24V	24V internal voltage reference output
VS	Vacuum sensor digital input

Table 7: Pinout of connector 4

Name	Description
SEP	Separator sensor input
AF	Air filter sensor input
OF	Oil filter sensor input
PE	Chassis ground; connect to mains earth
~24VAC	24V AC power supply voltage
~24VAC	24V AC power supply voltage

3.1. Output function configuration

The general outputs can be configured by the service department to one of the defined functions.

The configuration is carried out by setting the desired values in service parameter 009. The list of possible assignments is included in section 3.1.1.

3.1.1. List of possible output configurations

The list of functions that the outputs can be set to is as follows:

1. H1 - Heater control 1
2. H2 - Heater control 2
3. ACK - Acknowledgement output
4. DRAIN - Condensate drain
5. VE - Cooling fan control
6. SLV - Slave rem control
7. ERROR - Error output
8. START/STOP - Compressor state output

4. Mechanical drawing

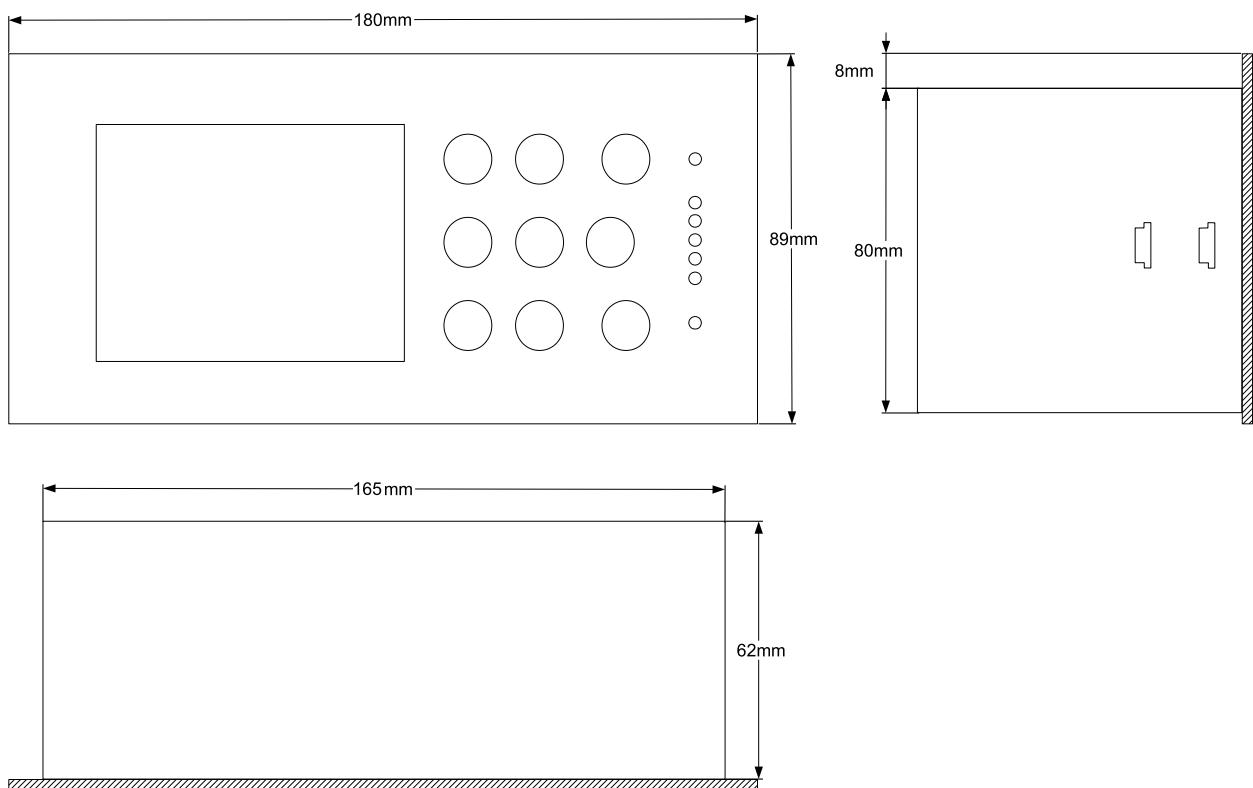


Figure 2: MS-887VFD mechanical drawing