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MS-885

Technical reference

1. Introduction

1.1. Description

MS-885 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-885 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**

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3

MS-885 Technical reference
Version 1.7.0.35245

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
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

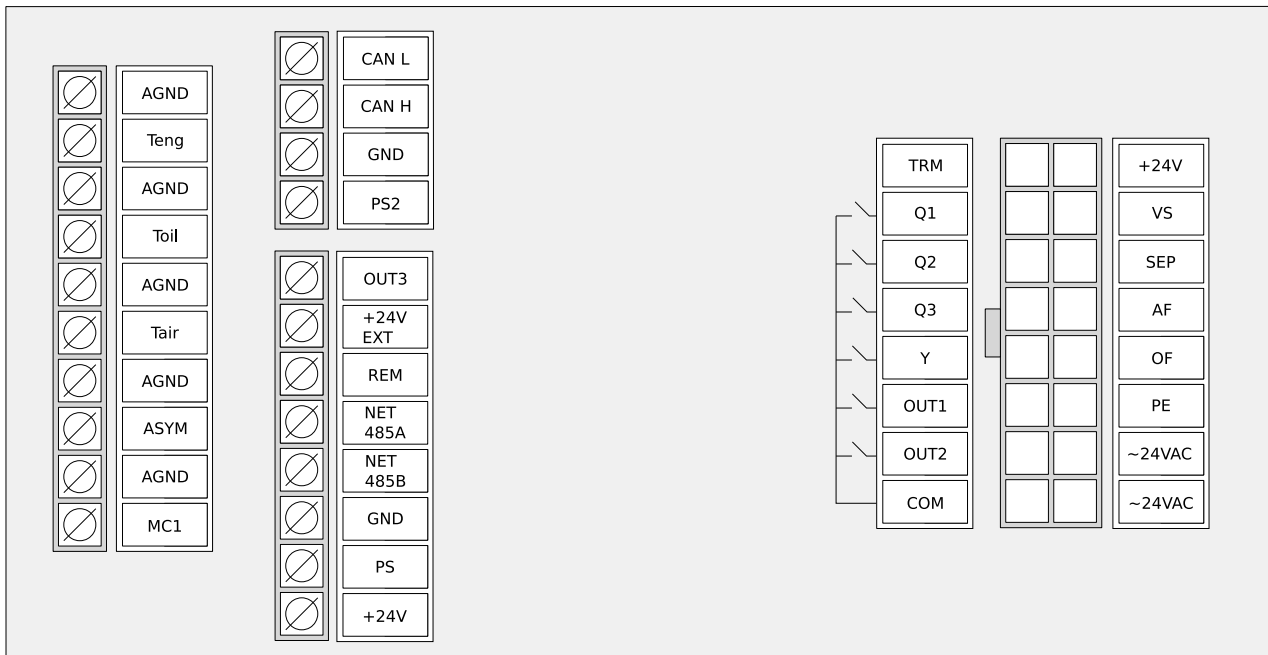| Parameter	Value
Operating temperature	-15 ÷ 50 °C
Storage temperature	-20 ÷ 70°C
Relative humidity	10 ÷ 90 %, without condensation

3. Electrical connections

Figure 1: Electrical connections of MS-885

Table 4: Pinout of connector 1

Name	Description
AGND	Analog ground
Teng	Engine temperature sensor input, KTY84
AGND	Analog ground
Toil	Oil temperature sensor input, PT100
AGND	Analog ground
Tair	Air temperature sensor input, PT100
AGND	Analog ground
ASYM	Asymmetry detection module input
AGND	Analog ground
MC1	Motor current

Table 5: Pinout of connector 2

Name	Description
CAN L	CAN interface communication line
CAN H	CAN interface communication line
GND	Digital ground
PS2	4-20mA current loop pressure sensor input 2

Table 6: Pinout of connector 3

Name	Description
OUT3	General configurable relay output (default: Acknowledgement output)
+24V EXT	External 24V reference voltage
REM	Remote control mode input
NET 485A	Network operation EIA-485 noninverting 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
TRM	Thermal fuse input
Q1	Motor power supply relay output
Q2	Motor star configuration relay output
Q3	Motor triangle configuration relay output
Y	Y Valve control line output
OUT1	General configurable relay output (default: Heater 1)
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
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 *OUT1*, *OUT2*, *OUT3* by the service department to one of the defined functions in **3.1.1.**

The configuration is carried out by setting the desired values in service parameter **009s**. 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 (Default OUT1)

5. VE - Cooling fan control

6. ERROR - Error output (Default OUT3)

7. DRYER - Dryer control (Default OUT2)

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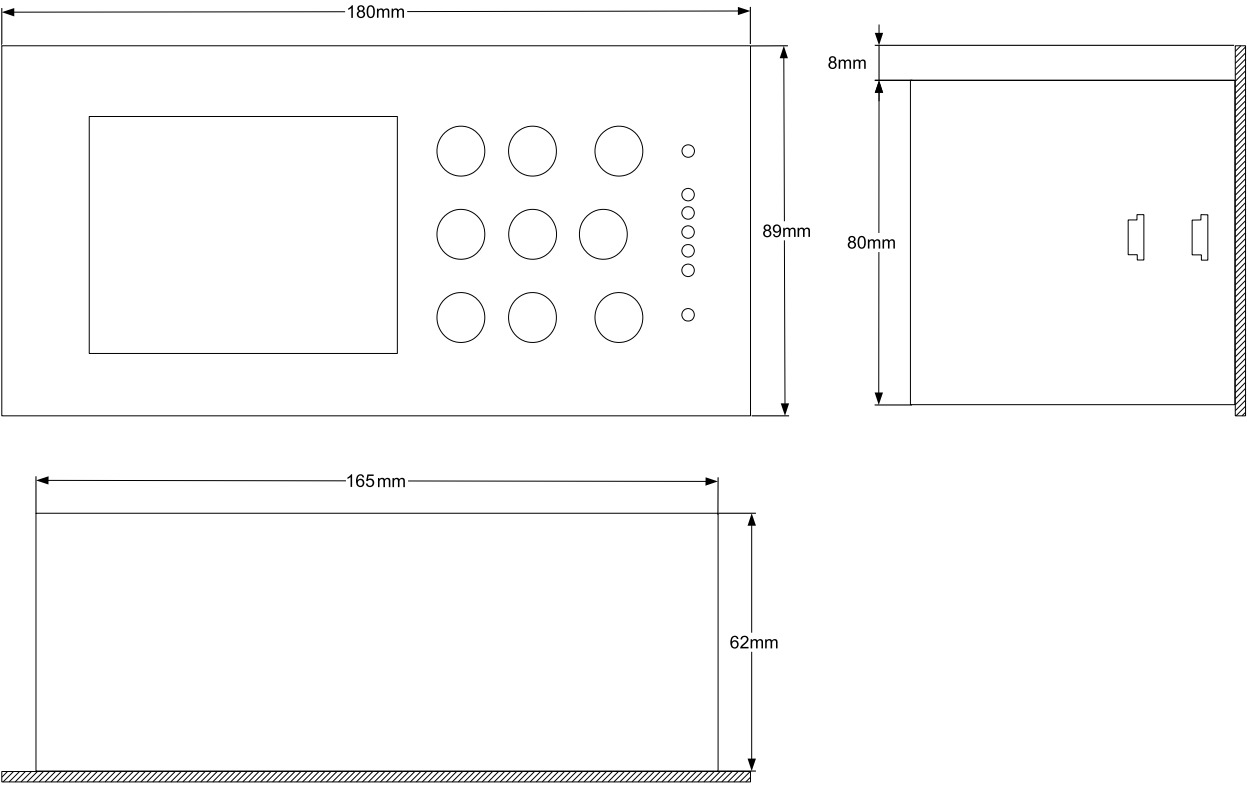
7

MS-885 Technical reference
Version 1.7.0.35245

4. Mechanical drawing

Figure 2: MS-885 Dimension drawing