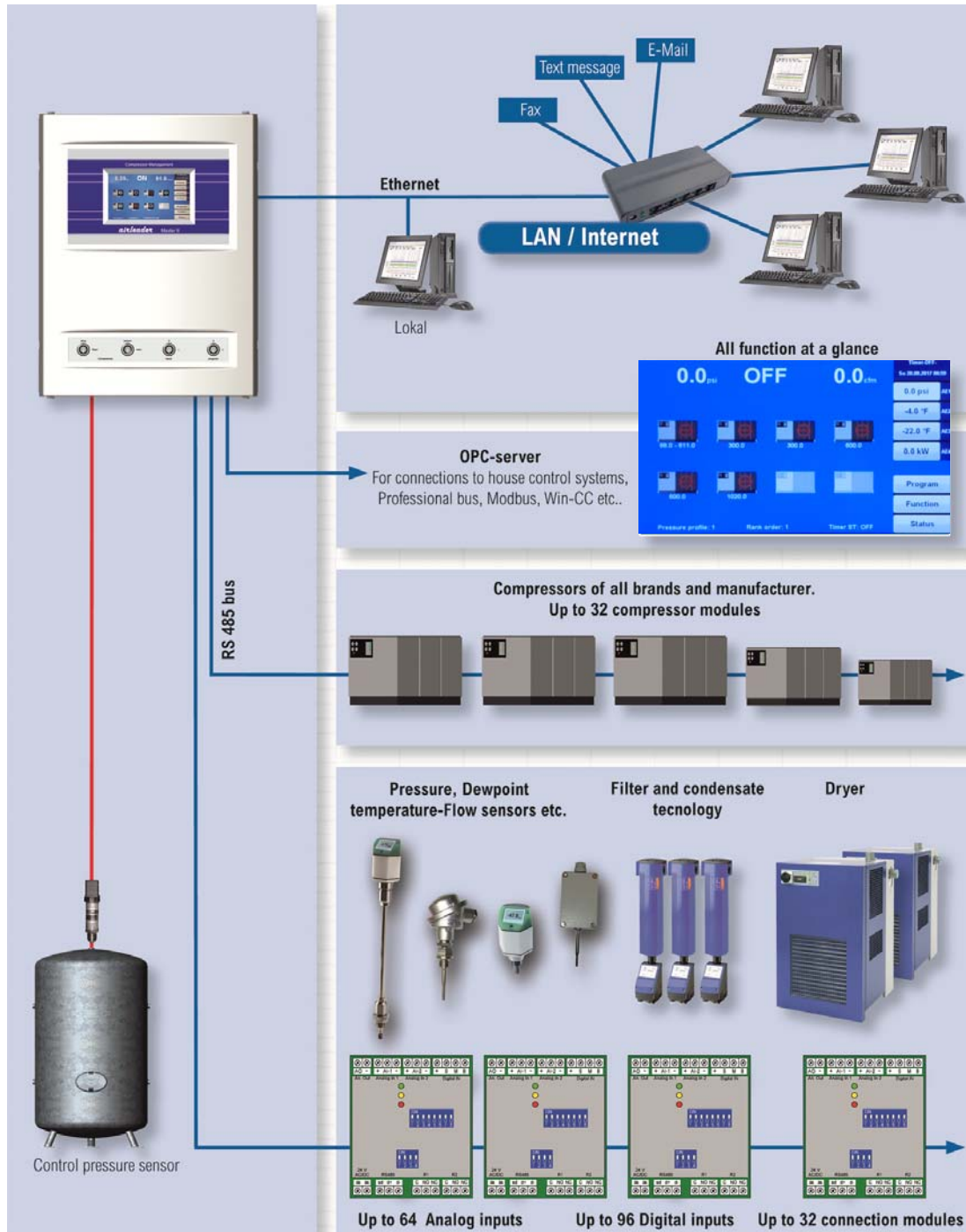


Operation manual for Compressor-Management AIRLEADER Master II+

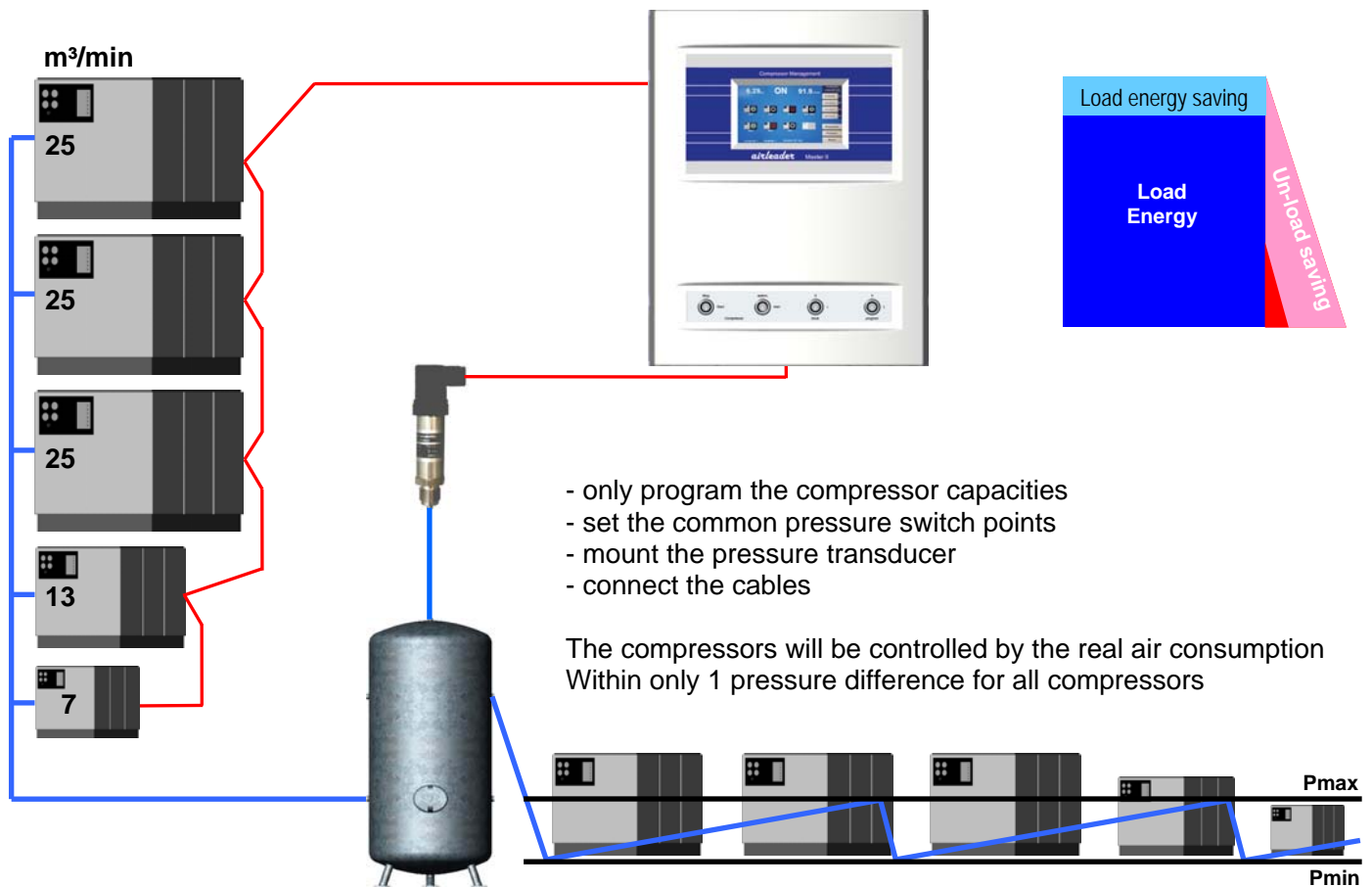


WF STEUERUNGSTECHNIK GMBH

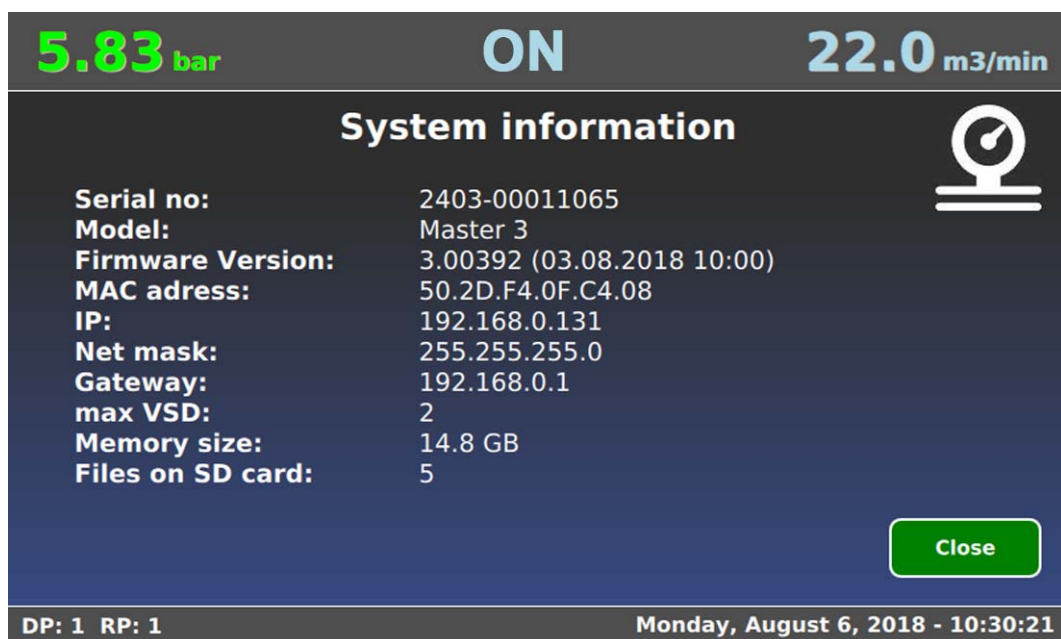
SIGA Development LLC DBA Airleader, 5460 33rd Street SE. Grand Rapids, MI 49512,
Phone +1 (616) 828 0716 info@airleader.us
dated - 08-08-2018

AIRLEADER combines compressors of different sizes to an optimum unit

Almost the best strategy to save energy



For program version, serial number and network - Touch >Status >System information



SUMMARIES

AIRLEADER Master MODUL

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VARIABLE SPEED COMPRESSOR

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FUNCTIONAL DESCRIPTION

AIRLEADER combines compressors of different sizes

to an optimum unit which automatically adapts to the production based on the current compressed air consumption. It is made sure that it is always the most efficient compressor combination which generates the compressed air necessary for production, independent of the manufacturer and the performance. The system pressure remains within the smallest limits. It is seen that the costs are kept as low as possible. The compressor performances and a common pressure difference are programmed in for all the compressors. Based on this information, AIRLEADER permanently calculates the current compressed air consumption and the volume of the compressed air system. The self-learning 8-fold calculation depth makes it possible to adapt the compressors to the changes in consumption in a dynamic way.

Automatic compressor change as per compressed air consumption

If all the compressors are on the same rank, they are working fully automatically and based on real air consumption. The priority of the compressors is adapted to the production process in real time with a useful hysteresis calculation. It is always the compressor combination with the lowest cycle rates which is running and thus with the lowest idle times. Big compressors are only running when needed. The smaller compressors are running under load instead of idling the big compressors. The compressors auto-regulate the motor start limitations.

The status of the compressors is constantly monitored.

If a running compressor displays a malfunction within the pressure range or is switched off for service, its performance is taken over by other compressors. If several compressors are needed to do this, addition is made time-delayed. Load and total running times are stored for the individual compressors. The operating hours are deleted, if required.

Connecting of compressors

is effected using the connecting moduls this being installed in the electrical housing of the compressor on the DIN-rail. The connection to the Master control is made over the industry us RS 485 bus. The operating voltage of **24 volts AC/DC** can be attached to the tension supply of the compressor. **If a power supply of 24V AC or DC is available from the compressor electric.**

Compressor fault

If a compressor goes on fault the display shows a symbolic cross. On fault of reported compressor the performance gets the compressed air consumption the most favorable compressors combination replaces through this one. The fault report for the compressors is activated at the AIRLEADER an common fault signal.

Faults from the connection modules will be given out over the digital output „General fault of external equipment.

Compressor motor running

If these inputs get connected, AIRLEADER receives the motor running time. The total hours are also stored as the load hours. The advertisement of the hours can be retrieved over the display. The running time compensation provides equally running times of compressors with same capacity.

Compressor ready input

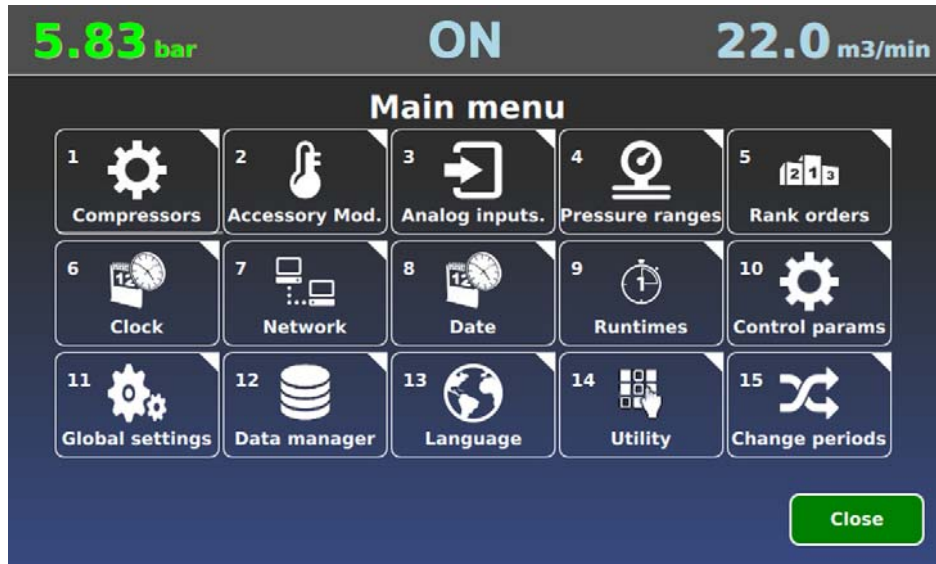
These input must be connected so that compressor management AIRLEADER recognizes the readiness of the compressors. If these input don't get connected, the compressor cannot be in operation. A fault signal isn't activated.
der Kompressor nicht bereit und kann nicht angewählt werden. Eine Störmeldung wird nicht aktiviert.

If the fault input is not connected

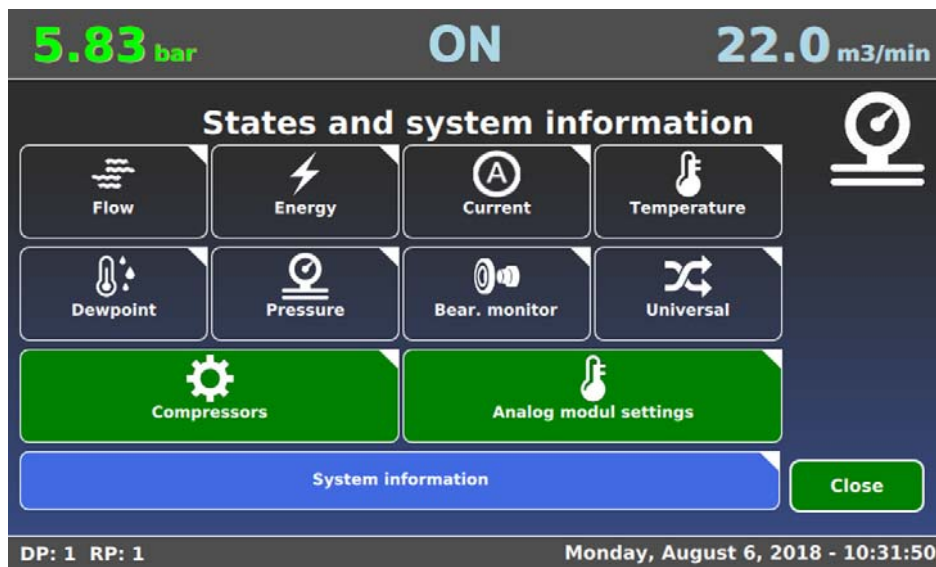
and one of the compressors stops due to a malfunction, the display will show a wrong compressed air consumption (too high = by the value of the faulty compressor). For this reason it is advisable to connect the malfunction signal inputs, so that the compressed air consumption is always shown correctly and the capacity is also corrected and immediately after reaching the P min.

Program and Status Menu

Touch >Settings to enter the „Main menu“ -



Touch >„Status“ to enter the status data of connected compressors and sensors



Compressor status symbols

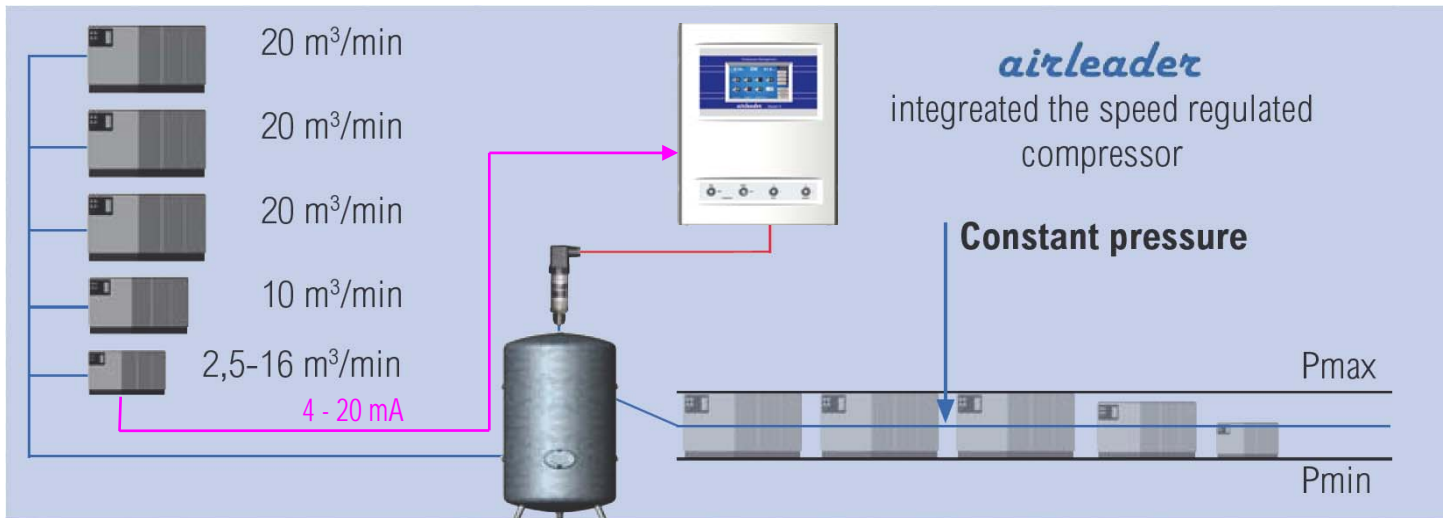


Control and interpretation of regulated compressors

The various speed regulated compressor is integrated actively

The VSD compressor send the information about the motor speed over an analog output to AIRLEADER. This parameter must be programmed to the minimal and maximum capacity of the delivered compressed air. The analog output of the VSD compressor have to be 4-20 mA. VSD Compressors with an analog output of 0-10 VDC must be changed from 0-10 VDC with a receiving multicoupler to 4-20 mA.

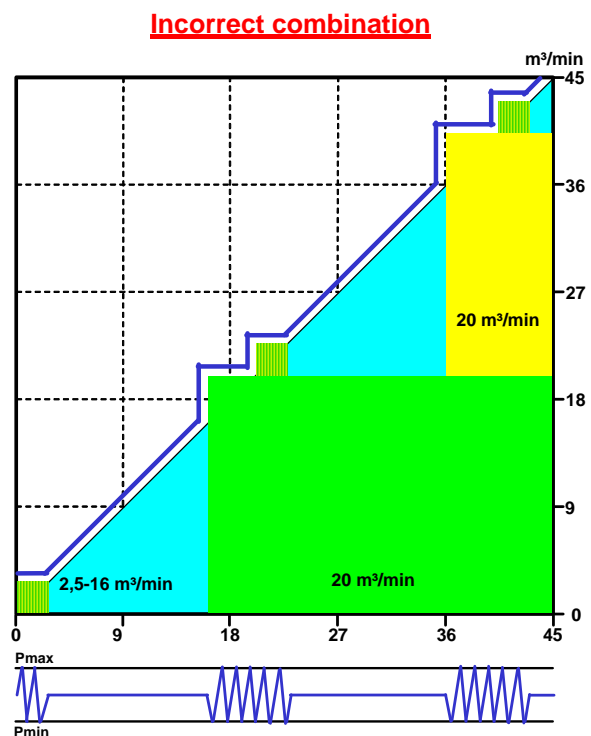
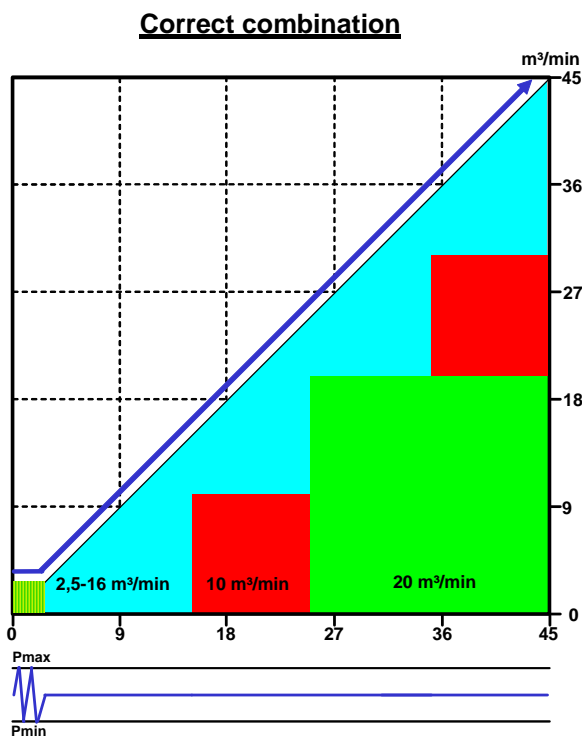
The pressure Setpoint of the VSD compressor must be centrally programmed between the AIRLEADER switch points.



The right combination of compressor capacities

together with speed regulated and normal compressors with a firm performance is decisive for good results in regulation. Is the various speed regulated compressor the smallest in combination with only bigger compressors there are only small section regulated by the various speed compressor. Big mechanical hurdle cannot be regulated directly.

Example of the right interpretation of the performances:



Configuration of regulation range and regulation buffer

Examble with a VSD Compresor with a regualation range between 2,5 - 16 m³/min -

The free definable regulation range max

switches load/unload compressors ON and OFF within the pressure settings of AIRLEADER. The regulation limits are defined with the **regulation range max** and the **regulation buffer**. Is the **regulation range max** adjusted lower than the maximum capacity of the VSD, the **regulation range max** and the **regulation buffer** will be activated.

Setting the "regulation range max"

Example: the **regulation range max** will be programmed to 15 m³/min. If than the compressed air consumption is going higher than 15 m³/min a time flexible trend calculation watches the compressed air consumption and switches another compressor on (10 m³/min like example). Within the pressure switch points of AIRLEADER. If the speed's regulated compressor reaches **the regulation range max** the second time together with the 10 m³/min compressor at 25 m³/min air consumption again, the 10 m³/min compresor will be replaced with the 20 m³/min compressor directly.

The 10 m³/min compressor will be switched on if air consumption reaches **the regulation range max** of the regulated compressor at 35 m³/min together with the 20 m³/min compressor.

Setting the "regulation buffer"

Example: the **regulation buffer** will be programmed to 1,5 m³/min. If the compressed air consumption is getting lower and the regulated compressor comes to the point "lower than 15 m³/min" together with the 10 and 20 m³/min compressor the regulation buffer of 1,5 m³/min will be activated. The air consumption get again 1,5 m³/min lower a time flexible trend calculation stops the 10 m³/min compressor inside the adjusted pressure switch points at the AIRLEADER. The VSD compressor regualtes to the capacity of 13,5 m³/min.

Correct setting of regulation buffer

Regulation range max	=	15,0 m ³ /min
Regulation buffer	=	-1,5 m ³ /min
Min compressor capacity	=	-2,5 m ³ /min
Control sum	=	11,0 m ³ /min

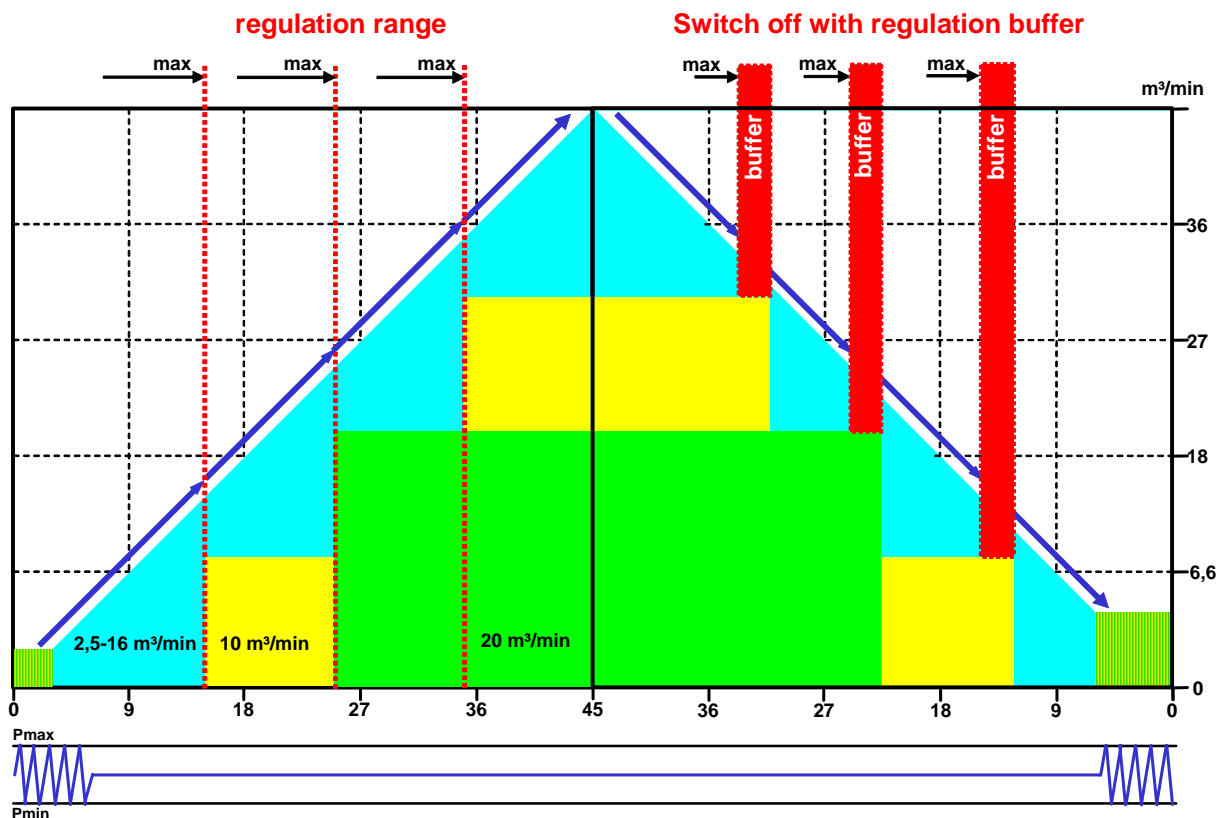
incorrect setting of regulation buffer

Regulation range max	=	15,0 m ³ /min
Regulation buffer	=	-3,5 m ³ /min
Min compressor capacity	=	-2,5 m ³ /min
Control sum	=	9,0 m ³ /min

Note:

- the **regulation range max** will be activ if the control sum is smaller than the capacity of the load/unload compressor
- the **regualtion buffer** is active if the controll sum is higher than the capacity of the load/unload compressor

The VSD compressor will be run in his best specific range.



Minimum flow rate and remote pressure supply

Settings „minimum flow rate“ of variable speed compressor

By setting the minimum capacity in the menu of the speed regulated compressor can be determined whether or below the minimum delivery amount of a normal compressor compressor in load / idle to run mode.

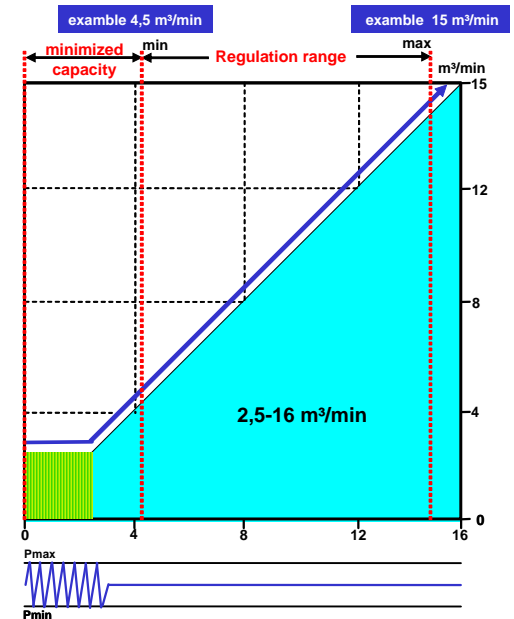
Setting the minimum flow rate of 0 m³ / min causes:

The speed controlled compressor is running in start / stop operation as long as the consumption of compressed air is from 0 to 2.5 m³ / min.

Setting the minimum flow rate of 2.5 m³ / min causes:

Below 2.5 m³/min compressed air consumption a normal compressor is running in a load / unload mode. The downshift is receding in consumption with a hysteresis

This mode is only economic if the air station with a small compressor as 2.5 to 4 m³ / min is installed in addition

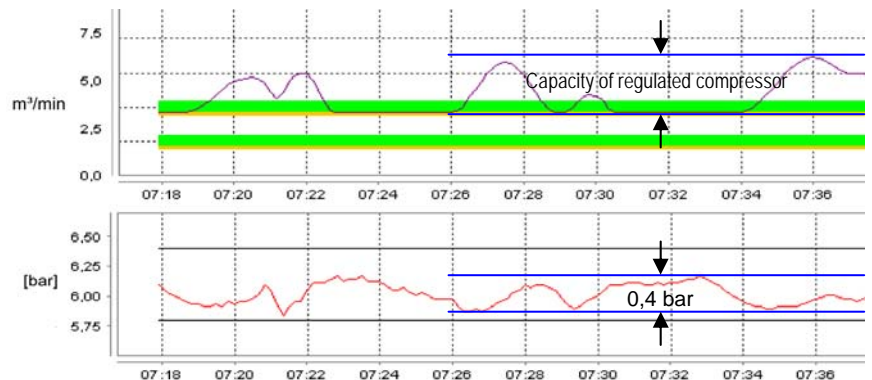


Remote pressure supply through analog output at the RS-485 connection module

Pressure differences caused by dryers and filters

cause may be between the pressure transmitter of the controlled compressor, and the master control rule up to 0.4 bar difference.

A precise control of pressure within very close limits is not possible. The pressure difference at the higher level control must be expanded by the pressure value can be set. This results in a pressure differential of 0.7 bar. (More than at a station without a regulated compressor)



With the remote control actual pressure value

ensure that the regulated compressor can be operated in conjunction with the master control in a narrow pressure limit.

The analog output of the connection module, deliver the current actual pressure of AIRLEADER via 4-20 mA.

If the compressor pressure transmitter has an different range, than the output has to be adjusted accordingly.

Example:

AIRLEADER 0-16 bar = 4-20 mA

Compressor 1-20 bar = 4-20 mA or Compressor -1-15 bar = 4-20 mA

An offset value setting for remote actual pressure

can be programmed via the menu of regulated compressor to the pressure setpoint of the controlled compressor to adjust the pressure difference.

This is especially important when more than 1 controlled compressor is installed in the compressed air network and the analog values do not match the individual compressors

Station with 2 variable speed compressors

In a station with 2 regulated compressors

the pressure transducer of regulated compressors in the same place as the pressure transmitter of the AIRLEADER feel, because differences in pressure of compressed air dryers and filters, the control behavior can influence each other greatly.

The configuration is described on page 4.

Settings „regulation range max“ und regulation buffer

example 1: 2 variable speed compressors with same capacity

compressor	compressor type	m³/min	Regulation range max	Regulation buffer	Min. flow rate
1	Variable speed	5-30	28 m³/min	5 m³/min	0
2	Variable speed	5-30	28 m³/min	5 m³/min	0
3	load / unload	15	-	-	-
4	load / unload	25	-	-	-

example 2: 2 variable speed compressors with different capacities

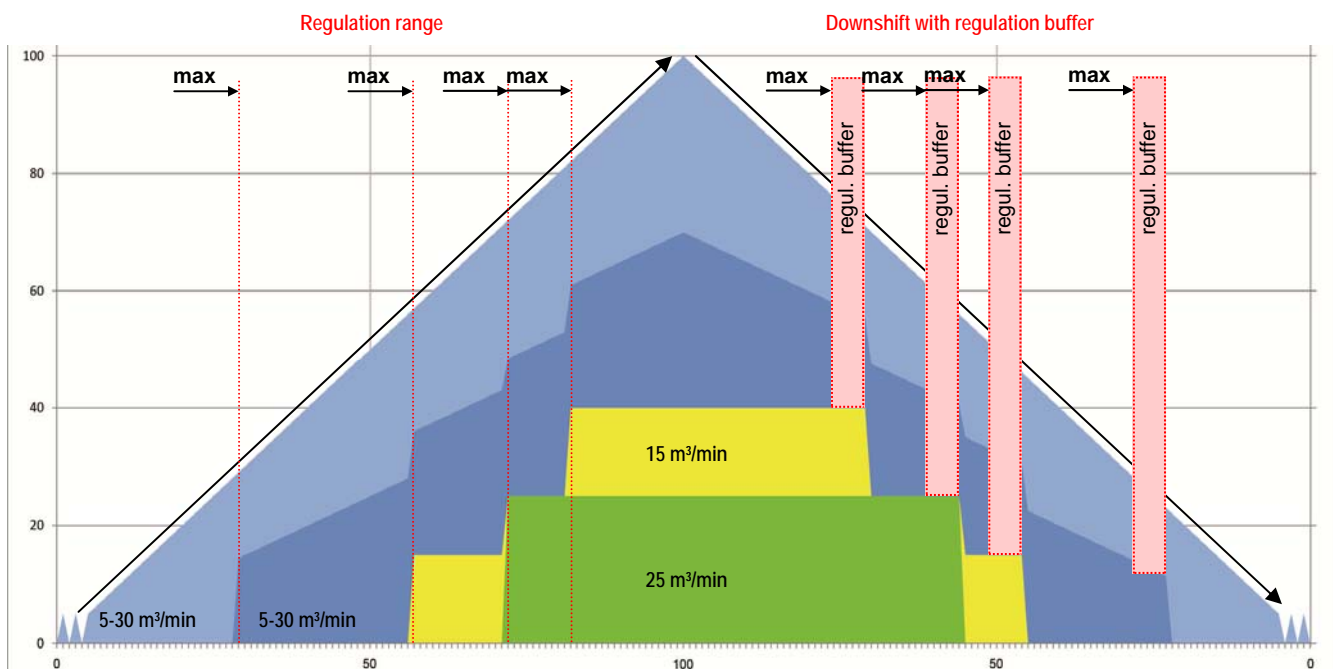
compressor	compressor type	m³/min	Regulation range max	Regulation buffer	Min. flow rate
1	Variable speed	1,5-10	9 m³/min	1,5 m³/min	0
2	Variable speed	5-20	18 m³/min	4 m³/min	0
3	load / unload	15	-	-	-
4	load / unload	25	-	-	-

In example 2

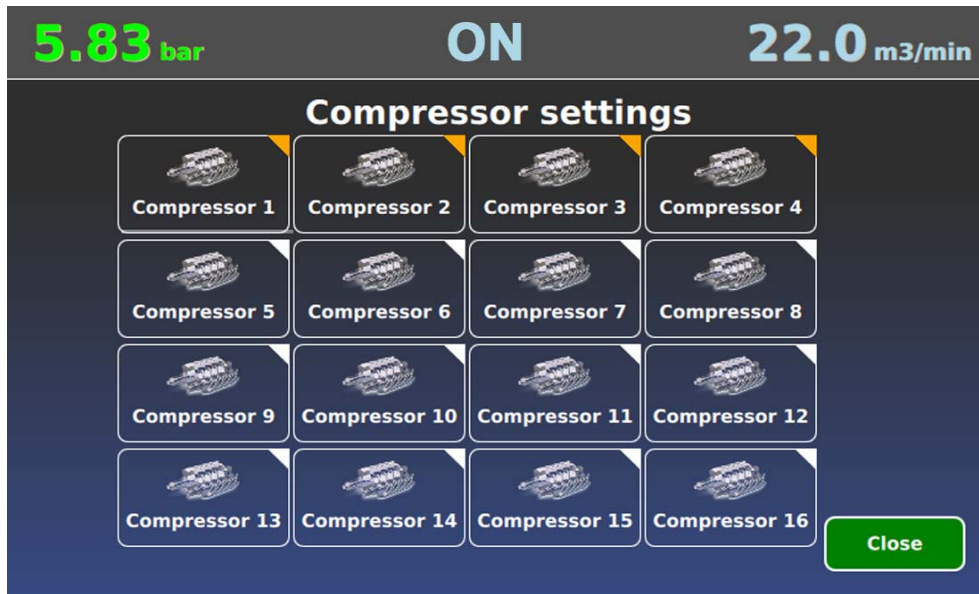
- if compressor 1 reach the regulation range max - it changes to compressor 2
- if compressor 2 reach the regulation range max - compressor 1 start again
- if both compressors reach the regulation range max - one of the load / unload compressor will be started
- the controller decides, dependent of air consumption that one of the regulated compressor can be switched off

The regulation range max

ensure that regulated compressors are always in the correct specific area. If a variable speed compressor delivers more air than the setting of the regulation range max, the control started a flexible trend calculation to start the next load/unload compressor. Dependent of the compressed air consumption.



Programming variable speed compressors



Touch >Settings >compressor
than
Touch > on compressor symbol

- > set min capacity
- > set max capacity
- > set I_{max}
- > set I_{min}
- > set regulation range max
- > set regulation buffer
- > compressor min air flow

Attention:

Activate service for maintenance
the signal "Ready" is deactivated and
the compressor goes into idle when it
is running on load

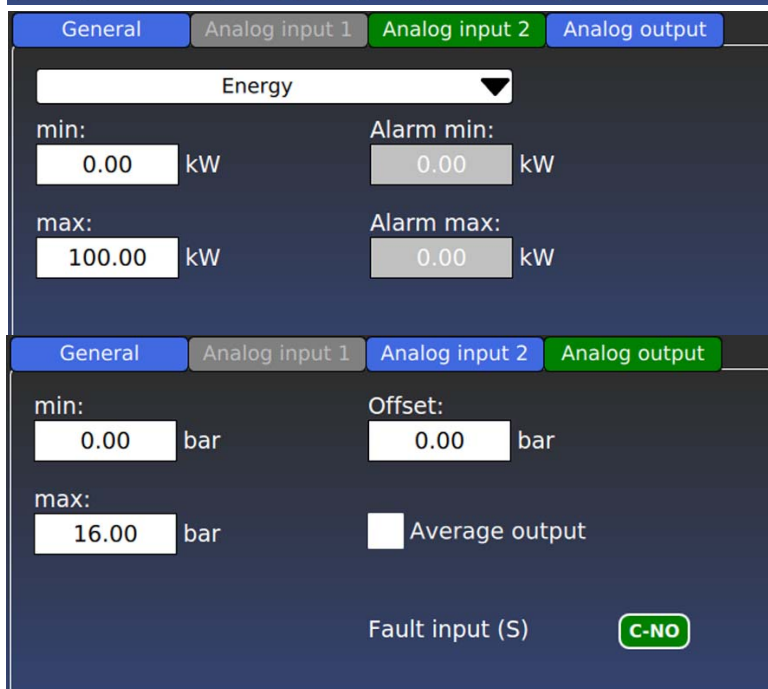


Install Sensor on Analog Input 2
Touch on Analog input 2

- > select type of installed sensor
- > set min range of sensor at 4 mA
- > set max range of sensor at 20 mA
- > set min Alarm point
- > set max Alarm point

Following sensors are possible:

- > Amperé
 - > Universal sensor
 - > Power (kW)
 - > Temperatur
 - > Bearing monitor
- If the sensor value is out of the Alarm
setpoints, you will get an alarm on the
Web-Server Visualisation



Touch on Analog output „AO“

- > set min and max range of the
compressor pressure sensor
at 4 mA and 20 mA
- > set max range of sensor at 20 mA
- > set pressure offset if it is necessary

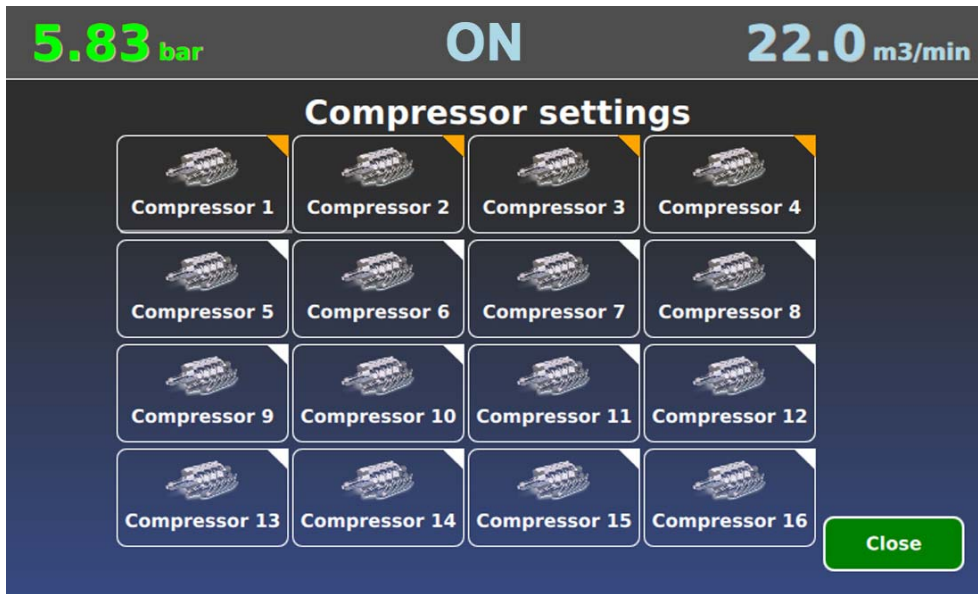
Don't select !Average value output

If average value output is selected
the analog output signal ist the
average between P_{min} and P_{max} of
Airleader pressure setting

Fault input selection

Standart is C-NC
If necessary change to
C-NO

Programming load / unload compressors



Touch >Settings >compressor
than
Touch > on compressor symbol

> set capacity



Touch on Analog input 1 „Ai-1“

- > set type of sensor
- > set min range of sensor at 4 mA
- > set max range of sensor at 20 mA
- > set min Alarm point
- > set max Alarm point

Following sensors are possible:

- > Amperé
- > Power (kW)

Install Sensor on Analog Input 2

Touch on Analog input 2

- > select type of installed sensor
- > set min range of sensor at 4 mA
- > set max range of sensor at 20 mA
- > set min Alarm point
- > set max Alarm point

Following sensors are possible:

- > Universal sensor
- > Temperatur
- > Bearing monitor

If the sensor value is out of the Alarm setpoints, you will get an alarm on the Web-Server Visualisation

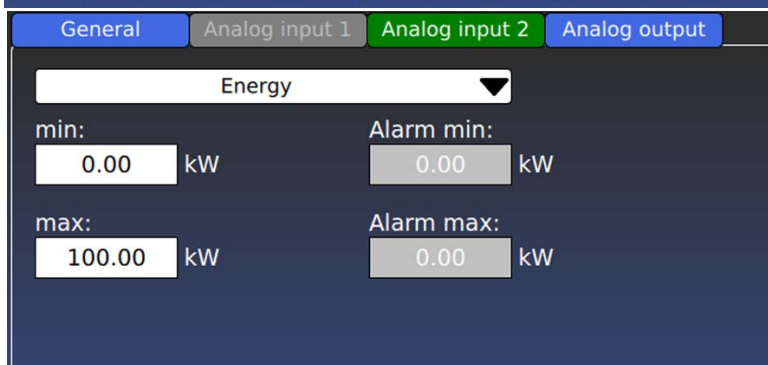
If current measuremet is selected

- > set min range of sensor at 4 mA
- > set max range of sensor at 20 mA

If energy measuremet is selected

- > set min range of kW meter at 4 mA
- > set max range of kW meter at 20 mA

OPTION: Vibration sensor
If Alarm and service management is installed



Pressure and rank profiles + system parameter

5.83 bar ON 22.0 m³/min

Pressure ranges

DP	pMin	pMax	pAlarm
1	5.50 bar	6.30 bar	5.00 bar
2	3.50 bar	4.50 bar	3.00 bar
3	3.50 bar	4.50 bar	3.00 bar
4	3.50 bar	4.50 bar	3.00 bar

Close Save

0 1 2 3 4 5 6 7 8 9 . - DEL C

PRESSURE PROFILE

Menu „pressure switch points“.

4 different pressure profile can be programmed. The pressure profile 2, 3, and 4 can be selected over:

- real time clock
- digital input 1, 2 and 3

RANK PROFILES

Menu „compressor rank profile“

Example: Following compressors shall be controlled

- compressor 1 with 20 m³/min
- compressor 2 with 18 m³/min
- compressor 3 with 18 m³/min
- compressor 4 with 13 m³/min
- compressor 5 with 10 m³/min
- compressor 6 with 10 m³/min

Special request

> Compressor 1 + 6 is connected to an heat recovery

> Compressor 3 is very old, only for Using as standby compressor

Recommended programming

- compressor 1+6 rank 1
- compressor 2+4+5 rank 2
- compressor 3 rank 3

Compressors in the rank stage 1 will be controlled dependent on air consumption.

If this is not enough, the compressors of the rank 2 and helps rank 1

ATTENTION:

Only compressor on the same rank stage will be controlled automatically by the dependent airconsumption.

Time cycle compressor order

In this menu equal hour for compressors with the same capacity can be programmed.

Control system parameter:

changing of this settings only with coordination by the manufacturer.

5.83 bar ON 22.0 m³/min

Rank orders

RP/C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Close Save

1 2 3 4 C DEL

5.83 bar ON 22.0 m³/min

Change periods

Compressors with: 10.0 m³/min

hours: 24 minutes: 00

Close Save

5.83 bar ON 22.0 m³/min

Control parameters

	Minute	Sec.	Security zones:
Delay time start:	0	30	below: 0.20
Delay time below:	0	20	high: 0.20
Delay time high:	0	20	

RS485 delay time: 200

Close Save

Analog - Inputs of Master

ANALOG inputs on Master Module AIRLEADER Master has as standart 4 analog inputs
TO program the analog inputs > touch on the button of analog input

Analog input „Ai1“

only for pressure transducer. The pressure transducer extend the supply of AIRLEADER and is included. No other sensor should be connected to the system. The pressure is displayed in the display on the left head line.

Analog input Ai2, Ai3, und Ai4

can be used for following sensors:

- > Dew point
- > Temperature
- > Flow
- > Extra pressure
- > Current measuring
- > Energy measuring

For each analog input is an digital output available for alarm signals

Programming of alarm signals:

- > for minimum signal
- > for maximum signal

can be programmed for each connected analog sensor. The measurements of these sensors are displayed permanently.

Parameter setting of analog inputs for example:

- > 4 mA upper data (Tmin)
- > 20 mA lower data (Tmax)

The window for the alarm specification is programmable vacant within the sensor values.

Analog and digital-inputs of connection modules

The screenshot shows the 'Modul 17' configuration screen. At the top, it displays '5.83 bar' in green, 'ON' in blue, and '22.0 m3/min' in blue. Below this are four tabs: 'Analog input 1' (selected), 'Analog input 2', 'Digital in', and 'Analog output'. The main area is titled 'Extra pressure' with a dropdown arrow. It contains two rows of settings: 'min:' and 'max:' for both '0.00 bar' and '16.00 bar'. To the right of these are 'Alarm max:' fields, with the first one highlighted in orange and containing '0.00 bar'. At the bottom right are 'Close' and 'Save' buttons. A numeric keypad is visible at the very bottom.

ANALOG and DIGITAL inputs

Up to 8 connection modules can be connected for external analog sensors and digital potential free contacts of dryers, condensate drains etc. The digital signals can be used as fault or running signals.

The modules get the number 17-24. Address settings by the 8 DIP switches

Every connection module

has following out and inputs:

- > 2 analog inputs for analog sensors with 4-20 mA Signal
- > 3 digital inputs for fault and running Signal of external equipment
- > 1 analog output 4-20 mA over the range of the connected net pressure transducer
- > 2 digital outputs (C-NO-NC 230VAC 2A) for signal output of connected analog sensors (alarm set points)

Possible sensors for the analog inputs:

- > Net pressure
- > Dewpoint
- > Temperature
- > Extra pressure
- > Flow
- > Current measurement
- > Energy measurement
- > Vibration for bearings

The digital inputs S - M - B

Can be selected as:

- > **fault signal**—with alarm message
- > **run signal** for external equipment
Running hour will be displayed in the Web-Server visualisation

The 8 connection modules put up to

- > 24 digital messages
- > 16 analog inputs for sensors

Analog output at the connection module

It is the actual pressure signal from the AIRLEADER as long as the average output is in No (N) position. . (See page 6)

Note: If average value output is programmed to „Y“ it belongs to another connection module for the pressure signal of the control.

PROGRAMMING REAL TIME CLOCK

Set date and time

Touch on each field and set the date and time of the real time clock.

Example:

1. Monday to Friday from 6:00-22:00h

- > Control system ON
- > Pressure profile 1
- > Rank profile 1
- > Digital output R1 ON for dryer

2. Monday to Friday from 22:00-24:00 h

- > Lower pressure with pressure profile 2 and rank profile 2
- > At the same time switching to a smaller dryer switched by digital output R2

3. At 00:00 h

- > The compressed air equipment is switched OFF by the clock relay

The clock relay permits following time controlled functions

- > Switching compressors ON/OFF
- > 4 pressure profiles, > 4 rank profiles,
- > 2 digital outputs for relays to switch ON/OFF additional equipment like (Dryer, ball valves, etc.)

The dates for the 2nd, 3rd. and 4th pressure profil and rank profil must be configured in the main menu

Note down all attitudes

for all program switching functions so that no being missing programming arise

Switching bridge „CLOCK“

The real time clock is only activated over the switching bridge generally. Up to 16 switching points can be programmed in the menu clock

Note: SUNDAY is number „0“

Note down all attitudes

for all program switching functions so that no being missing programming arise

Switching bridge „CLOCK“

The real time clock is only activated over the switching bridge generally. Up to 16 switching points can be programmed in the menu clock

Removing the switching bridge

„CLOCK“ deactivated the clock relay functions. The compressors management is switching the compressors to the

- > 1st pressure profile and
 - > 1st rank profile
- that is programmed in the basic menu over the data of the 1st pressure and 1st rank profile.

CLOCK - PROGRAMMING - NOTES

Compressor chanel's								
Nr.	1	2	3	4	5	6	7	8
Name								
Nr.	9	10	11	12	13	14	15	16
Name								

Pressure profile = PP			
Nr.	P min	P max	P Alarm
1	bar	bar	bar
2	bar	bar	bar
3	bar	bar	bar
4	bar	bar	bar

Compressor rank profile = RP								
Kompr.	1	2	3	4	5	6	7	8
1.RF								
2.RF								
3.RF								
4.RF								

Clock relay switching times and functions													
SP	Day of the week							Time	LS	PP	RP	R1	R2
1	M	T	M	T	F	S	S						
2	M	T	M	T	F	S	S						
3	M	T	M	T	F	S	S						
4	M	T	M	T	F	S	S						
5	M	T	M	T	F	S	S						
6	M	T	M	T	F	S	S						
7	M	T	M	T	F	S	S						
8	M	T	M	T	F	S	S						
9	M	T	M	T	F	S	S						
10	M	T	M	T	F	S	S						
11	M	T	M	T	F	S	S						
12	M	T	M	T	F	S	S						
13	M	T	M	T	F	S	S						
14	M	T	M	T	F	S	S						
15	M	T	M	T	F	S	S						
16	M	T	M	T	F	S	S						

SP=switching point

LS=Management Leadsystem

digital output =R1

digital output t= R2

STATUS DATA

5.83 bar

ON

22.0 m3/min

States and system information

Flow

Energy

Current

Temperature

Dewpoint

Pressure

Bear. monitor

Universal

Compressors

Analog modul settings

System information

Close

DP: 1 RP: 1

Monday, August 6, 2018 - 10:31:50

5.83 bar

ON

22.0 m3/min

Compressor 1 Information

S : OFF

M : OFF

B : OFF

Relay 1 : OFF

Relay 2 : OFF

AI1 : 0.00 mA = 0.00

AI2 : 0.00 mA = 0.00

AO : 9.87 mA = 5.86 bar

<<prev.

next>>

Close

DP: 1 RP: 1

Monday, August 6, 2018 - 10:45:31

Touch on Status to see the status of all connected modules and sensors

Status of compressor modules (MK) No. 1-16 and extra connected modules (AM) No. 17-24

See the status of:

- > relay 1
- > relay 2
- > analog input 1 Ai-1 in mA and selected sensor data
- > analog input 2 Ai-2 in mA and selected

5.83 bar

ON

22.0 m3/min

Pressure Information

MM AE1 : 9.89 mA = 5.88 bar

MM AE2 : 0.00 mA = 0.00 bar

AM 17 AE1 : 0.00 mA = 0.00 bar

AM 18 AE2 : 0.00 mA = 0.00 bar

Condition of the sensor values

By selecting the sensor function, all sensor values connected to the controller are displayed by category. The connection location is also displayed.

e.g.

- MM AE1 analog input on the master
- AM 17 AE1 stands for Analog module 17 Analog input 1 AE1 sensor data

IP-address, Network and factory settings

5.83 bar ON 22.0 m3/min

Network settings

IP Address: 192.168.0.131

Net mask: 255.255.255.0

Gateway: 192.168.0.1

Close Save

0 1 2 3 4 5 6 7 8 9 . - DEL C

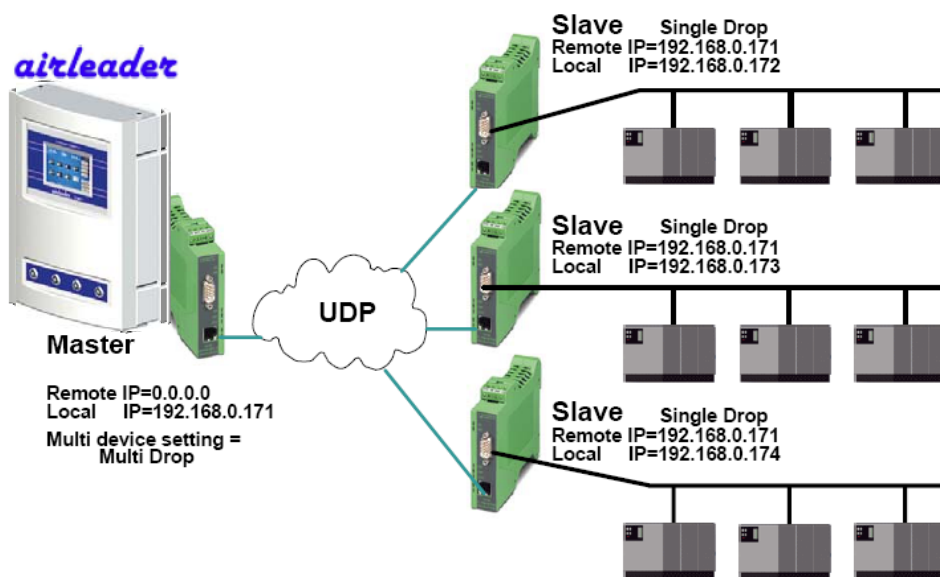
IP-address settings:

Touch: > settings > Network

> set IP-address

> set Subnet Mask

> set Standard Gateway



If compressors are connected over COM-Server with separate IP-address

go to > Factory settings: Touch > Program > Factory setting

Communication via Ethernet

The connection between AIRLEADER and the connection modules for compressors and other components can be done via the Ethernet by using the COM server.

The RS-485 interface AIRLEADER is connected to a COM server.

The COM server gets an IP address that matches the IP address range.

More COM-server can be connected to the Ethernet with different IP addresses.

5.83 bar ON 22.0 m3/min

Global settings

RBmax delay time: 120 Sec. SZ OFF: 0.50 bar

RP delay time: 60 Sec. P delta: 0.30 bar

Pressure hyst.: 0.20 bar PAalarm delta: 0.50 bar

Consum hyst.: 10 % V-Gradient: 8

Comp. change time: 15 Sec.

RS485 response time: 100 mSec.

Access code: Login

Close Save

0 1 2 3 4 5 6 7 8 9 . - DEL C

Program waiting time for slave response

Touch: >Settings >Global

Program waiting time to „200 ms“

If necessary changeable up to 250 ms

COMMISSIONING and SWITCHING FUNCTIONS

Connecting -Modules

for compressors has to be mounted on a DIN-rail in the electrical housing in of the compressor

The pressure switches of the compressors now become „safety pressure switches“. Example:

Pressure setting of AIRLEADER	=	7,0 - 8,0 bar
Setting of compressor pressure switched	=	7,5 - 8,5 bar

In case of absence of current, the contact's of the connecting module are closed.

The compressors are controlled by their installed pressure switches

Check the pressure connection of the pressure transducer

ATTENTION:

It is absolutely necessary to install the transducer at a calm part of the compressed air line.

As an optimum we recommend a separate 1/2" line leading from the receiver to the transducer.

Switching ON delay time is 30 sec (default by manufacturer).

Connect cable bridge "START"

with a cable or a switch. AIRLEADER will start your compressed air station. From now on your compressors are energy saving controlled and depending on your real consumption of compressed air.

Programming the various capacity of the various speed compressor

it is absolutely necessary, to program the minimal and maximum capacity of the regulated compressor (according to the manufacturer's indications) together with the mA values appropriately correctly.

Example: minimum capacity = 2,3 m³/min = 6,2 mA measured
 maximum capacity = 17,0 m³/min = 17,2 mA measured

please see the programming instructions

12. Switching functional description

Switching bridge: START

With this switching bridge the compressors will be switched ON / OFF.

Bridge activated = The compressors will be controlled by AIRLEADER

Bridge deactivated = The compressors turn OFF

Switching bridge: PROG

If this is activated, all program parts can be programmed.

To programming the compressor capacities the switching bridge START may not be activated.

Switching bridge: CLOCK:

If this bridge is activated, the CLOCK will be activated. If this bridge is deactivated the compressor management is switching the compressors now over the 1st pressure rank profile that is programmed in the basic menu.

Switching bridge: Manual:

If this bridge is activated, the compressors will be switched back to their own controller and will be controlled over the pressure setting of the compressor controller.