

## 8.1 Operating elements

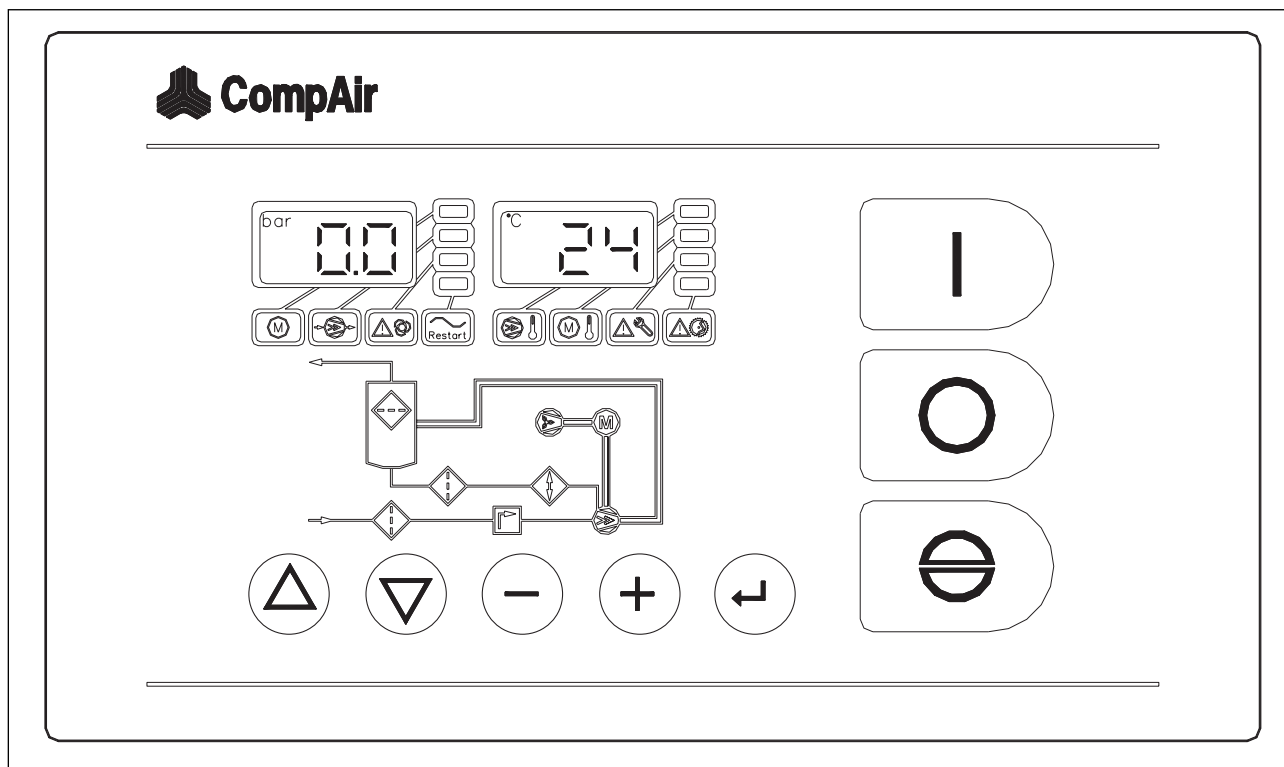


Fig. 19

### 8.1.1 Keyboard

Key	I	⇒	Switch the system on
Key	O	⇒	Switch the system off
Key	⊖	⇒	Acknowledgment and return to pressure and temperature display
Key	Δ	⇒	Scroll upwards in the menu
Key	∇	⇒	Scroll downwards in the menu
Key	-	⇒	Scroll to the left in the menu and change parameters
Key	+	⇒	Scroll to the right in the menu and change parameters
Key	↵	⇒	Change settings

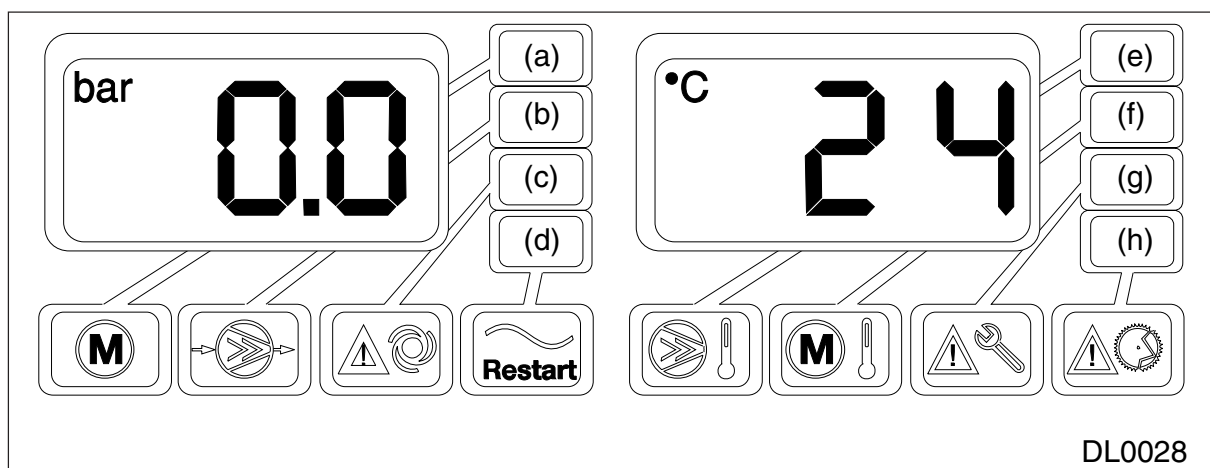


Fig. 20

### 8.1.2 Light emitting diodes

#### Operating messages

- LED a ⇨ flashing: The system is in the stand-by mode, i.e. the motor can start up automatically at any time.
- on: The drive motor is running
- LED b ⇨ Unit is in operation under load
- LED c ⇨ flashing: Remote control active, remote switch OFF
- on: Remote control active, remote switch ON
- LED d ⇨ Automatic restart after power failure ON

#### Fault messages

- LED e ⇨ Malfunction/final compression temperature
- LED f ⇨ Malfunction/motor temperature
- LED g ⇨ Warning /maintenance
- LED h ⇨ Collective fault

If LED g or LED h light up, determine the cause of failure, warning or service message in the fault storage as described in chapter 8.2.9 "Fault storage".

### 8.1.3 Final compression pressure display (bar)

Under normal operating conditions, the left display indicates the final compression pressure of the compression element, i.e. the internal pressure of the unit. The final compression pressure must not be confused with the mains pressure.

If the actual final compression pressures exceeds the maximum operating pressure by 1.0 bar, the control emits a warning message by means of a flashing pressure display. The warning is stored in the fault storage; LED g lights up.

If the actual final compression exceeds the maximum operating pressure by 1.5 bar, this causes a fault. The fault is stored in the fault storage; LED h lights up.

In the case of an incorrect transfer from the pressure sensor, the actual reservoir pressure cannot be determined or displayed. The display shows: "---".

### 8.1.4 Temperature display (°C)

Under normal operating conditions, the right display indicates the final compression temperature of the compression element.

The display flashes in order to indicate excessive or insufficient temperatures. In the case of overheating, the compressor shuts down automatically. In the case of too low temperatures, the unit does not enable a start.

In the case of an incorrect transfer from the temperature sensor R1, the actual reservoir temperature cannot be determined or displayed. The display therefore shows: "---".

### 8.1.5 Mains pressure display (bar)

The actual mains pressure is displayed by pressing the [-] key. The mains pressure indicates the overpressure at the mains connection of the compressor (re-set after approx. 3 seconds).



Setting the desired mains pressure is described in chapter 8.2.1.

In the event of an incorrect transfer from the pressure sensor B1, the actual mains pressure cannot be determined or displayed. The display shows: "---".

### 8.1.6 Menu structure DELCOS 1000 (Main menu)

Fig. 21 shows the main menu of the Delcos 1000.

Starting at the normal final compression pressure and final compression temperature displays (1), the following keys are used to reach the appropriate display and setting positions.

- (2) Operating/load hours
- (3) Mains pressure display and setting
- (4) Fault storage

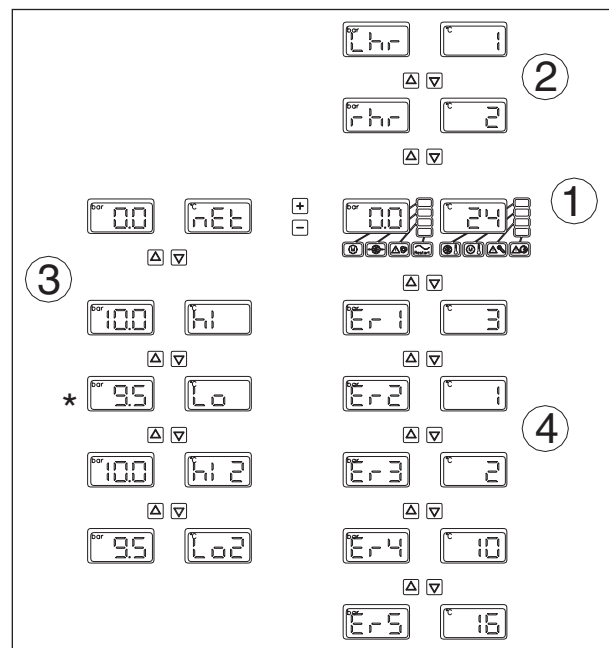


Fig. 21

### 8.1.7 Menu navigation

Taste [-]	Left
Taste [+]	Right
Taste [∇]	Down
Taste [Δ]	Up
Taste [⊖]	Return to normal display

For example, to display the minimum the mains pressure switching point (see \*), use the following key sequence:

[-] key, [∇] key, [∇] key

Use the keys to return to the normal display, or simply press the [⊖] key.

### 8.1.8 Change of settings

If settings are to be changed, select the corresponding menu point and press the corresponding menu point and press the [↵] key. The setting value will flash and can now be changed with the [+] or [-] keys. This does not apply to the factory pre-settings.

All other setting values can be changed at any time.

## 8.2 Commissioning and basic functions

When switching the power supply on, the display test appears, which must be acknowledged before starting the unit by pressing the [⊖] key.

### 8.2.1 Mains pressure settings

Two pressure bands can be set in the Delcos 1000. Usually only pressure band 1 is used.

Pressure band 2 can be switched to using an external electrically isolated contact. See chapter "Remote control (remote under load/idle running)". A flashing point in the mains pressure display (2) indicates that the second pressure band is activated.

Starting from the normal final compression pressure and final compression temperature displays (1), the [-] key is used to display the mains actual pressure (2) and the [V] key is used to display the setting values for both pressure bands.

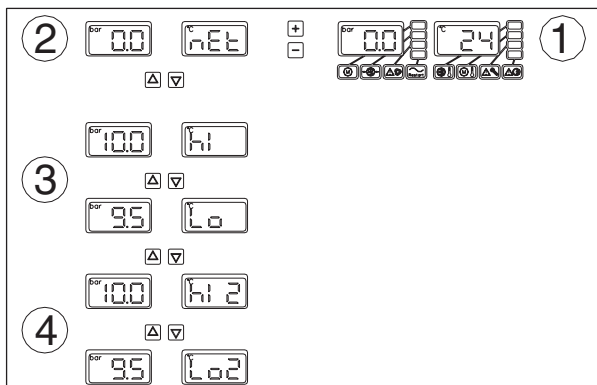


Fig. 22

(3) Pressure band 1

hi: Upper switching point  
Lo: Lower switching point

(4) Pressure band 2 (via external contact)

hi2: Upper switching point

Lo2: Lower switching point

The upper switching point (cut-out pressure) must not be more than 0.5 bar over the maximum overpressure of the unit.

### Important

**Settings over the nominal operating pressure can cause the unit to overload.**

The lower switching point (cut-in pressure) must not be lower than 5.0 bar, in order to protect the oil supply of the compressor.

The difference between the upper and lower switching point (switching difference) must not be lower than 0.2 bar.

### Important

**Do not select a switching difference that is too small. Switching differences that are too small may cause very high switching circuits under load/idle running in a small storage reservoir. This causes a high degree of wear on the intake regulator. We recommend a switching difference of at least 0.5 bar.**

### 8.2.2 Start of the unit

Prior to setting the unit into operation by pressing the [I] key, faults must have been rectified and acknowledged.

The compressor cannot be started at temperatures < 1 °C.

If the compressed air mains does not report a requirement at the time of start, the unit will go into the stand-by mode - LED a flashes (only in the automatic operating mode).

Moreover, a safety circuit (start-up protection) prevents the drive motor from starting against an internal residual pressure. In this case, the compressor also goes into the stand-by mode. The compressor starts automatically, if the pressure falls below a factory-pre-set value (start-up protection).

### Danger

**If the unit is in the stand-by mode, i.e. LED a flashes, the compressor can start up automatically at any time!**

### 8.2.3 Operation under load/idle running

The operating mode is factory pre-set to automatic operation. This means that the compressor is switched off and goes into stand-by mode after a set coasting time, if compressed air is no longer required.

If the compressor is in stand-by mode, it is automatically re-started when compressed air is required again.

The length of the coasting time results from the set value for the maximum number of motor starts per hour. For more information on how to increase the coasting time, see chapter 8.3.5.1 "Change coasting time".

**Danger**

*When the system is in the stand-by operating mode, i.e. **LED a** flashes, the compressor can start up at any time!*

**8.2.4 Stopping of the unit**

After pressing of the [ 0 ] key, the unit searches for an off load and stable working point before the motor is switched off. After the [ 0 ] key is pressed, the unit continues to run for 30 seconds!

**8.2.5 Malfunctions/shutdowns/power failures**

In order to protect the unit, all recognized defaults will result in the immediate shutdown of the system or will prevent a start-up.

These faults are transferred to the fault storage with a corresponding error message and then signalled to the collective fault relay.

The faults have to be acknowledged (after rectification of the fault) by pressing key [ Θ ].

In the case of the fault [power failure], the display test appears as soon as power is again applied. This must be acknowledged at the unit by pressing key [ Θ ].

In the remotely controlled operating mode, it is sufficient to restart the unit (change from REMOTE OFF to REMOTE ON), which at the same time acknowledges the power failure fault in the fault storage.

**8.2.6 Warnings/maintenance**

Warning or maintenance messages will be signalled via **LED g**, but will not result in the shutdown of the compressor.

Ignoring warnings/service messages can result in malfunction!

**8.2.7 Collective fault relay**

A potential-free contact in the control (see electrical circuit diagram) reports malfunction of the unit. The contact opens in the case of a fault.

The contact of the collective fault relay must not be loaded with more than 250 V/8 A.

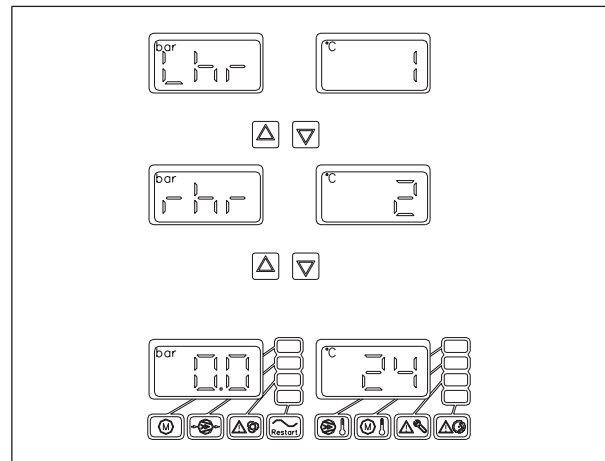
**8.2.8 Operating/load hours counter**

Fig. 23

The operating and load hours of the unit can be called up at any time.

For this, press the [ Δ ] key for the operating hours (rhr: Running hours) and once more key [ Δ ] for the load hours (Lhr: Load hours) of the unit.

In order to return to the normal display, press key [ ∇ ] for a step-by-step return, or simply key [ Θ ].

The operating and load hours are indicated on the 3-digit temperature display. In order to be able to display a count of more than 999, the following indication mode is provided.

A point in the display represents the indication in thousands.

Example:

Operating time 0 - 999h                      Display 0 - 999

Operating time 1000 - 9999h              Display 1.00 - 9.99

Operating time 10000 - 99999h          Display 10.0 - 99.9

## 8.2.9 Fault storage

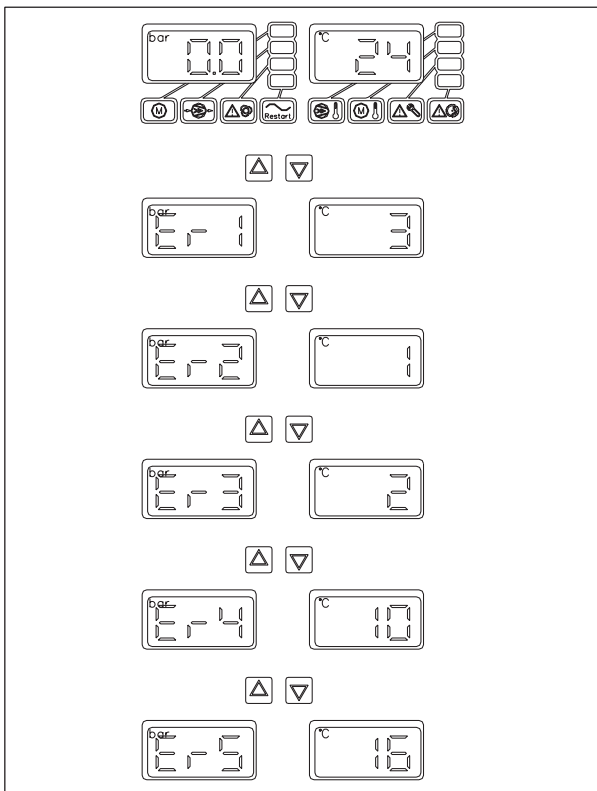


Fig. 24

The fault storage contains the last 5 fault or warning messages in the order of their occurrence.

Press the [∇] key to access the fault storage.

Beginning with the last/latest entry (Er1) the [∇] key can be used to look through the entries up to the oldest one (Er5). The corresponding error codes are shown in the right display. For the error codes, see the fault storage table.

Flashing error codes indicate that a fault has not yet been acknowledged. Faults should be acknowledged when they occur by pressing the [⊖] key.

In the above example the last/latest fault (Er1) was caused by shutdown due to the motor temperature being too high (error code 3). Therefore (Er2) the unit was shutdown due to power failure (error code 1).

**8.2.10 Fault storage table**

<b>Error code</b>	<b>Description</b>	<b>Possible cause</b>	<b>Remedy</b>
1	Fault power failure	Power failure Cabling defective	Search for the reason Check, if required, repair
2	Fault emergency stop	Emergency stop is/was activated  Emergency shutdown switch defective  Cabling to emergency shutdown defective	Unlock  Check, if required, replace  Check, if required, replace
3	Fault motor monitoring	Motor started too frequently (*)  Excessive intake temperature  Insufficient venting  Motor defective  Power requirement too high  Defective power supply  Star/delta starter defective	Limit number of manual starts/stops  Improve  Improve  Check, if required, replace  Check, search for cause  Check, search for cause  Check
4	Fault compressor excessive temperature (*)	Excessive intake temperature  Insufficient venting  Unit operated with access panels open  Oil injection quantity/temperature too small/high  Oil filter clogged  Temperature sensor defective (wrong indication)  Cabling of the temperature sensor defective	Improve  Improve  Close access panels  Check, search for cause  Check, if required, replace  Check, if required, replace  Check, if required, repair
5	Fault, start tried at low temperature (*)	Internal temperature of the unit too low  Temperature sensor defective (wrong indication)  Cabling of the temperature sensor defective	Heat compressor room  Check, if required, replace  Check, if required, repair
6	Warning compressor temperature (*)	see point 4	see point 4
7	Fault overpressure shutdown	Final compression pressure exceeds maximum operating pressure by 1.5 bar (*)  - System pressure loss too high  - Pressure sensor B1 or B2 faulty	  Check, search for cause  Check, if required, repair

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<b>Error code</b>	<b>Description</b>	<b>Possible cause</b>	<b>Remedy</b>
7	Fault overpressure shutdown (cont.)	- Intake regulator does not close - $\Delta p$ of fine separator too high	Check, search for cause Check, if required, replace
8	Warning overpressure	Final compression pressure exceeds maximum operating pressure by 1.5 bar (*) - see point 7	see point 7
9	Final compression pressure sensor fault	Wrong pressure measurement (indication: --- bar) - Pressure sensor B2 defective - Cabling of the pressure sensor B2 defective	Check, if required, replace Check, if required, replace
10	Fault temperature sensor	Wrong temperature measurement (indication: ---°C) - Temperature sensor defective - Cabling of the temperature sensor defective	Check, if required, replace Check, if required, repair
11	Fault, wrong direction of rotation	Vacuum pressure at the pressure connection caused by wrong direction of rotation of the motor (acknowledgment in the fault storage not possible)	Connect correct phase grouping L1, L2, L3 Isolate unit from power source to acknowledge
12	Not used		
13	Not used		
14	Not used		
15	External fault	Shutdown due to external contact	Close external contact
16	Warning maintenance interval(s) exceeded	Programmed maintenance interval(s) have reached or exceeded 0 hours	Carry out maintenance, re- program new maintenance interval(s)
17	Fault shutdown maintenance limit interval(s) have been reached	Programmed maintenance interval(s) have reached 100 hours, shutdown is thus active	Carry out maintenance, re- program new maintenance interval(s)
18	Fault of mains pressure sensor	Incorrect pressure measurement (display --- nEt) - Pressure sensor defective - Cabling of the mains pressure sensor defective	Check and replace, if required Check and replace, if required
19	Fault of start-up against great resistance	A defect causes a high final compression pressure build-up (approx. 2-3 bar) during the start-up phase	Check intake regulator, and, if required replace
20	Mains pressure warning	Mains pressure exceeded by more than 0.5 bar	External remote-load requirement too high, check

(\*) For settings, see chapter 8.3.5 "Factory pre-settings"



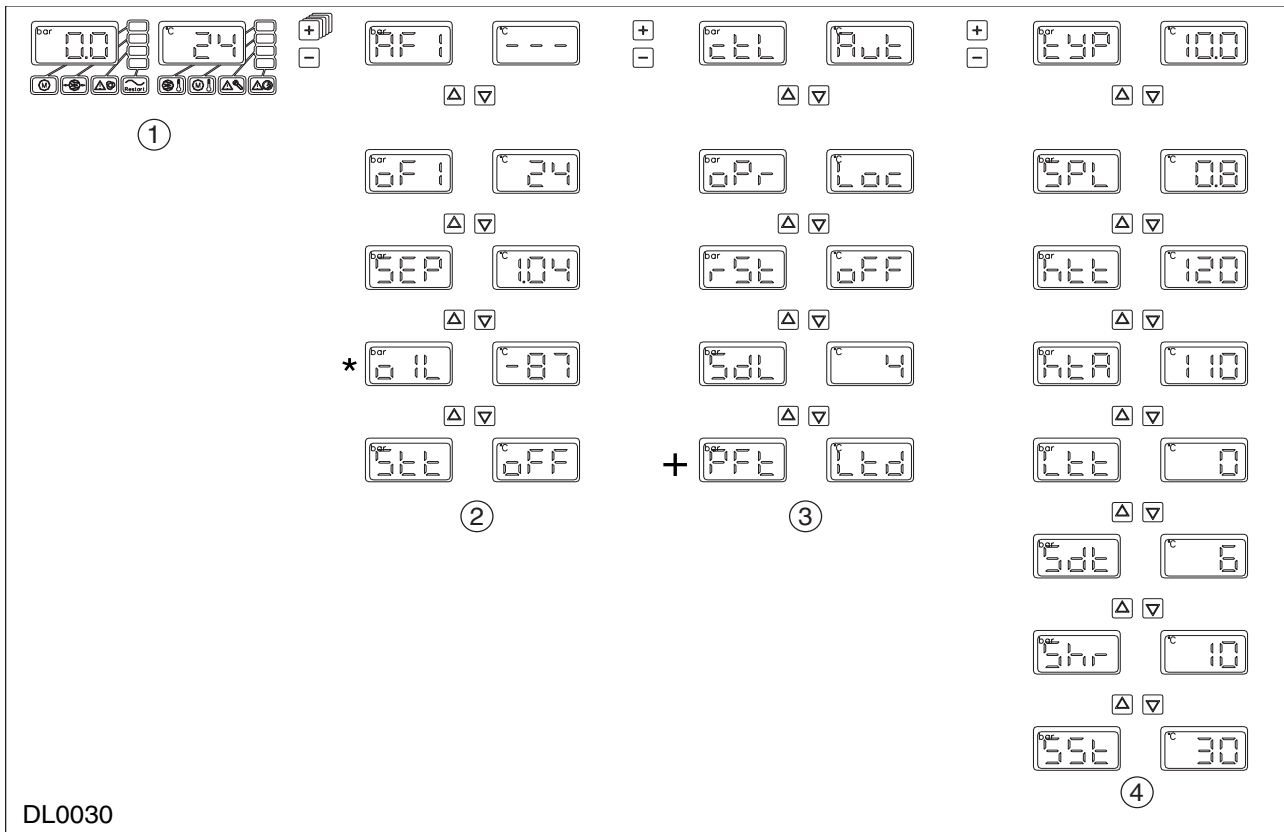


Fig. 25

### 8.3 Additional functions menu

The control includes various menus (fig. 25) in order to provide for changing for example the operating mode of the compressor control, to call up information or to program maintenance intervals.

Starting at the normal display (1), this menu block is activated by pressing the [ + ] key for 5 seconds.

The menu block consists of the following menus:

- (2) Maintenance intervals
- (3) Operating modes
- (4) Factory pre-settings

#### Note

The menu point for the additional automatic restart after power failure (PFt, see +) is only displayed if this function has been activated. See chapter 8.3.4.5 "Additional automatic restart after power failure".

#### 8.3.1 Menu navigation

- Taste [-] Left
- Taste [+] Right
- Taste [∇] Down
- Taste [Δ] Up
- Taste [⊖] Return to normal display

Starting at the normal display (1), the following key sequence can be used, e.g. to display the maintenance interval for oil change (see\*):

- Hold down the [ + ] key for 5 seconds
- Press the [ ∇ ] key 3 times

Use these keys to return to normal display, or simply press the [ ⊖ ] key.

#### 8.3.2 Change of settings

If settings are to be changed, select the corresponding menu point and press the [ ↵ ] key. The setting value will flash and can now be changed with the keys [ + ] or [ - ]. This does not apply to the factory pre-settings, with the exception of the coasting time setting.

All other parameters can be changed at any time.

### 8.3.3 Maintenance intervals

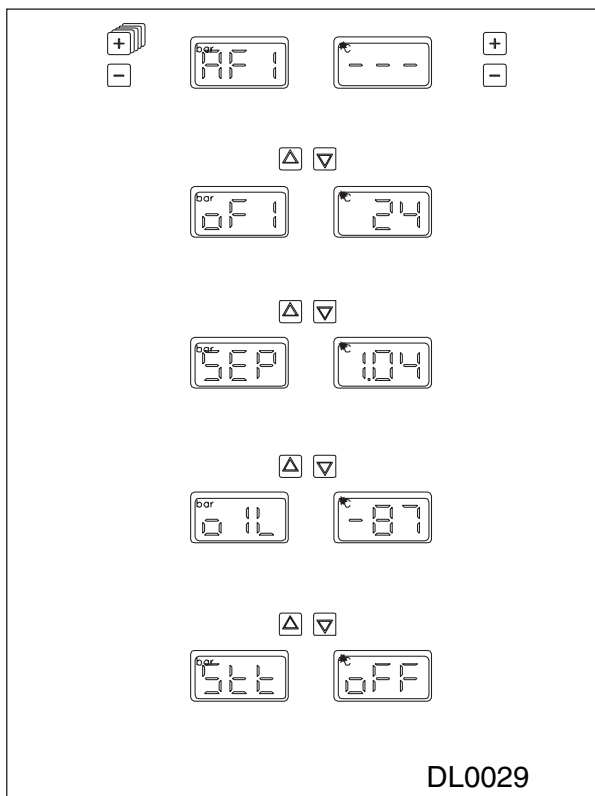


Fig. 26

#### Annotations re fig. 26:

#### Field "bar" = pressure display

AFI	=	Remaining time air filter
oFI	=	Remaining time oil filter
SEP	=	Remaining time fine separator
oIL	=	Remaining time oil change
Stt	=	Shutdown at -100 hours (service timer trip)

#### Field "°C" = Temperature display

---	=	Maintenance interval blocked
24	=	24 hours
1.04	=	Display multiplied by 1000 = 1040 hours
-87	=	Maintenance interval has been overdue for 87 hours
oFF	=	OFF = no shutdown
on	=	on = shutdown activated, one or more maintenance interval(s) reaches 100 hours.

You can set the maintenance intervals for air filters, oil filters, fine separators and oil change by yourself, thus partly substituting your maintenance book.

The programming has to be adjusted to your specific application conditions, because for example the clogging degree of the air filter depends on the intake conditions.

The settings of the maintenance intervals can be programmed from 0 to 6000 hours.

If no maintenance intervals are requested, program a value above 6000 hours. The display shows - - -. Thus, this maintenance interval is blocked.

Times of more than 999 hours are represented in the same way as operation and load hours (see 8.2.8).

The factory pre-set "maintenance" values are blocked (the display shows: - - -), i.e. no programming has been made.

The individual setting values are programmed by pressing the [↵] key. The setting value will flash and can then be changed.

If the setting value has counted down to 0 hours, a corresponding error code entry is made and LED g (maintenance) flashes.

It is possible to display negative, i.e. overdue maintenance intervals.

Moreover, a shutdown can be activated/deactivated (Stt = oFF/on) for maintenance intervals, if a maintenance interval has counted down to -100 hours. If one of the intervals has reached this shutdown threshold, the shutdown is triggered off by the collective fault LED h, which acts in addition to LED g. The fault storage contains the message "shutdown limit of maintenance interval(s) exceeded".

You will then have to carry out the planned maintenance work, newly program the maintenance intervals and then acknowledge the fault by means of key [Θ] for a restart.

### 8.3.4 Operating modes

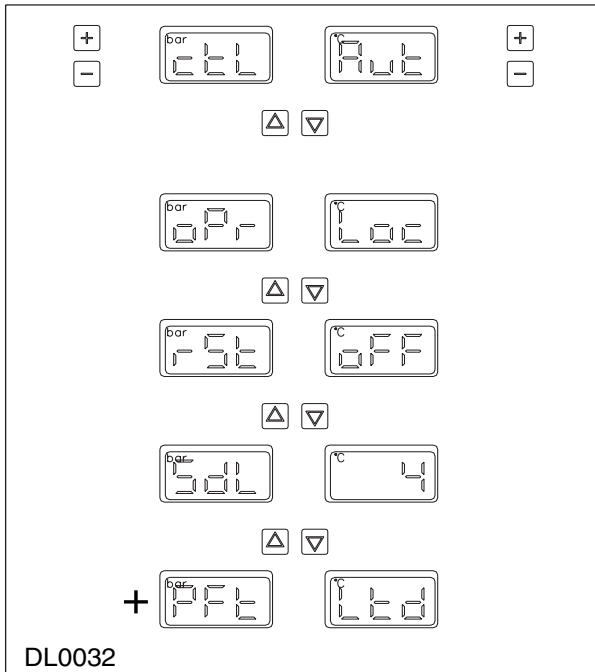


Fig. 27

#### Annotations re fig. 27:

##### Field "bar" = pressure display

- ctl = Operating mode (control)
- oPr = Local/remote control (operator)
- rSt = Automatic restart
- SdL = Start delay for deferred start-up (start delay) in the event of automatic restart
- PFt = Power failure time for automatic restart

##### Note

The menu point for the additional automatic restart after power failure (see + PFt) is only displayed if this function has been activated. See chapter 8.3.4.5 "Additional automatic restart after power failure".

##### Field "°C" = temperature display

Possible setting values for operating mode (ctl)

- Aut = Automatic operation
- cnt = Continuous operation

Possible setting values for remote ON/OFF (oPr)

- Loc = Local control
- Etn = Remote control (external)

Possible setting values for automatic restart (rSt)

oFF = OFF

on = ON

Parameter for start delay (SdL)

1..30 = Start delayed between 1..30 seconds

Possible setting values for power failure time (PFt)

Ltd = Limited to maximum of 1.5 seconds

ult = Unlimited automatic restart

#### 8.3.4.1 Automatic operation

The automatic operating mode is the most economic, because the control stops the compressor when no compressed air is required and re-starts the unit automatically in the case of demand for compressed air.

##### Note

The unit must be shutdown to switch between automatic and continuous operation.

#### 8.3.4.2 Continuous operation

This operating mode is required in special applications only. Continuous operation prevents the stopping of the drive motor even if no compressed is required. The operation is then continued in the idle mode.

In contrast to the automatic operation, you can start the unit, although no requirement is present from the compressed air mains.

##### Note

The unit must be shutdown to switch between automatic and continuous operation.

#### 8.3.4.3 Remote control (Remote ON/OFF)

##### Important

In this operating mode, the compressor can start up automatically at any time.

##### Note

This operating mode (oPr = Etn) only enables the remote ON/OFF control for the machine. The options for remote control under load/idle running (see chapter "Remote control (Remote under load/idle running)") can be operated independent of this operating mode.

In the remote control operating mode, the unit can be cut in and out via a coupling relay with light-duty contacts at the input 'Remote ON' (see circuit diagram).

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With remote control operation, LED c lights up and the [I] and [O] keys for the compressor are blocked. For starting the system the control requires a switch-on command (contact closes) at the terminal strip. The unit is on when the contact is closed and is shut down when the contact opens.

Additional information about the electrical connection can be found in chapter 'Controlling the unit via terminal strips'.

Since the display test does not appear after a power failure in this operating mode, the compressor can be restarted using the remote switch, without requiring a local acknowledgment beforehand. The acknowledgment is given by the start command (remote ON).

### 8.3.4.4 Automatic restart after power failure

#### Important

**In this operating mode, the compressor can start up automatically at any time.**

After a power failure, which has not taken longer than 1.5 seconds, the compressor is automatically restarted, provided that it was switched on before the power failure occurred, i.e. it was in operation or in the stand-by mode.

Failures of a duration of more than 1.5 seconds trigger off the message "power failure"; an automatic restart does not take place.

In addition, you can program a start delay (1 to 30 seconds) in order to ensure that, with stations comprising several compressors, the compressors do not start simultaneously (to relieve the mains power supply).

### 8.3.4.5 Additional automatic restart after power failure

The control system activates an automatic restart after a power failure of any length. The PFt menu point must be activated and the failure time must be set to unlimited restart (uLt).

#### Danger

**In this operating mode, the compressor can start up automatically at any time and after an unlimited power failure period.**

**Check the relevant safety requirements (e.g. EN1012-1, EN60204) for your country as to whether an unlimited automatic restart is permitted and which safety precautions must be taken.**

**You must provide warning signs for the compressor, keep the compressor room locked and inform personnel.**

**Install a main switch in accordance with EN60204 and provide the relevant warning signs.**

To activate the PFt (Power Fail Time) menu point, proceed as follows:

1. Disconnect the power supply to the compressor
2. Simultaneously hold down the four [Δ] [▽] [-] [+] keys
3. Reconnect the power supply while still holding the keys down
4. Release the four keys when the display test appears.

### 8.3.5 Factory pre-settings

This menu provides the possibility of verifying the factory pre-settings programmed for your unit. However, these values cannot be changed. (\*)

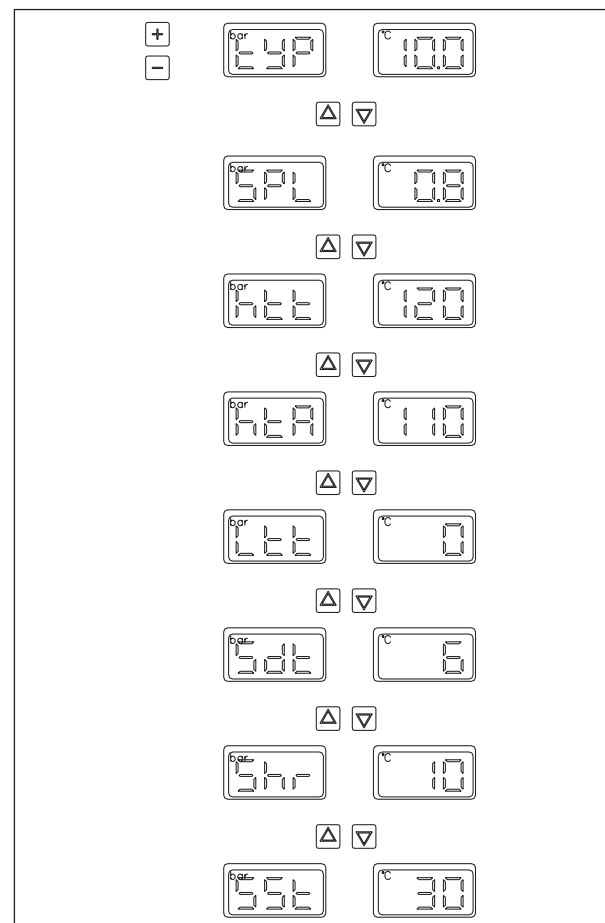


Fig. 28

\* Excluding the Shr = Starts per hour (coasting time) setting; see chapter 8.3.5.1 'Change coasting time'.

**Annotation re fig. 28:****Field "bar" = pressure display**

tyP	=	Max. operating pressure (typ)
SPL	=	Start-up protection (start pressure limitation)
htt	=	Shutdown final compression temperature (high-temperature-trip)
htA	=	Early warning final compression temperature (high-temperature-alarm)
Ltt	=	Start-up blockage low temperature (low temperature trip)
Sdt	=	Star/delta changeover time (star/delta time)
Shr	=	Max. number of starts per hour
SSt	=	Soft stop time

The following are example settings in the previous figure (see fig. 28)

tyP	=	10.0 bar pressure variant
SPL	=	0.8 bar start-up protection
htt	=	120°C shutdown final compression temperature
htA	=	110°C early warning final compression temperature
Ltt	=	0°C start-up blockage low temperature
Sdt	=	6 seconds Y/Δ changeover time
Shr	=	40 starts per hour (90s coasting time)
SSt	=	30 seconds soft-stop time

**8.3.5.1 Change coasting time**

The coasting time for the unit specifies how long the compressor coasts in automatic operation under idle running before the unit is shut down (stand-by). The coasting time is the setting for the max. starts per hour (Shr).

Example: Shr = 40 starts per hour  
Coasting time = 90 seconds

Shr = 10 starts per hour  
Coasting time = 360 seconds

The coasting time can be extended simply to avoid exceeding the maximum starts per hour for the electric motor.

**8.4 Controlling the unit via terminal strips**

Please refer to the circuit diagram for your unit for this chapter. The circuit diagram can be found in the switch cabinet of the compressor.

**Important**

**The compressor may start automatically at any time when controlling the unit via terminal strips!**

**Note**

*The electrically isolated contacts used when controlling the unit via terminal strips must be light-duty (24 VDC, 5 mA).*

**8.4.1 Remote control (Remote ON/OFF)**

The control system offers the option of cutting in and out on the connection for an electrically isolated contact for the compressor.

Remote control must be enabled in the operating modes menu to activate the remote ON at the input (see chapter 8.3.4.3).

**Important**

**Only electrically isolated contacts may be connected to the terminal strips. Interference voltages cause the Delcos 1000 to malfunction.**

**The electrically isolated contacts must not be any further than 20 meters from the terminal strips. If necessary, coupling relays must be installed in the switch cabinet.**

### 8.4.2 Input of external faults

If an external event occurs, the control system offers the option of shutting down with a corresponding fault message, via the connection of an electrically isolated contact. An example of this is the shutdown of the compressor in the event of a fault in the connected compressed air dryer.

This input is switched by default in the Delcos 1000. When an input is opened with an electrically isolated contact, the compressor is shutdown immediately with error code 15.

#### Important

**Only electrically isolated contacts may be connected to the terminal strips. Interference voltages cause the Delcos 1000 to malfunction.**

**The electrically isolated contacts must not be any further than 20 meters from the terminal strips. If necessary, coupling relays must be installed in the switch cabinet.**

### 8.4.3 Remote control (Remote under load/idle running)

The control offers several options, via the connection of electrically isolated contacts to influence control under load/idle running.

#### Important

**Only electrically isolated contacts may be connected to the terminal strips. Interference voltages cause the Delcos 1000 to malfunction.**

**The electrically isolated contacts must not be any further than 20 meters from the terminal strips. If necessary, coupling relays must be installed in the switch cabinet.**

#### 8.4.3.1 Remote under load running

Control under load/idle running of the compressor is usually implemented by the internally set pressure bands. It is possible to clear the load requirement of the internal pressure bands via the connection of electrically isolated contacts, in order to control the under load/idle running with just one electrically isolated contact.

Procedure:

1. To clear the internal pressure bands and activate the "remote load" input, close the "enable remote load" input with an electrically isolated contact
2. The compressor is now controlled via another electrically isolated contact in the "remote load" input under load running, and the contact can be closed

#### Note

*When the "enable remote load" input is closed, the internal pressure bands are deactivated and the compressor is only controlled via the "remote load" input.*

#### Note

*Make sure that the contact at the "remote load" input opens (switched to under load running), before the nominal operating pressure of the compressor is exceeded. If the nominal operating pressure is exceeded by more than 0.5 bar "Warning mains pressure" (error code 20) is generated.*

*The switching difference, calculated from the cut-out pressure minus the cut-in pressure, should not be lower than 0.5 bar.*

#### Important

**Operating the unit above the nominal operating pressure may cause the unit to overload.**

**Switching differences that are too small may cause very high switching circuits under load/idle running in small storage reservoir. This causes a high degree of wear on the intake regulator.**

#### 8.4.3.2 Switching to the second pressure band

The unit usually controls under load/idle running via internal pressure band 1. A second pressure band can also be set, which can only be switched to via the terminal strips (see chapter "Mains pressure settings"). When the second pressure band is activated a flashing point appears in the mains pressure display.

To switch to pressure band 2, close an electrically isolated contact at the "second pressure band" input. As long as the input is closed, the system is controlled via the second pressure band.

#### 8.4.3.3 Free load

This input is switched by default in the Delcos 1000. When the input is opened with an electrically isolated contact, the under load running is interrupted, i.e. it switches to under idle running.

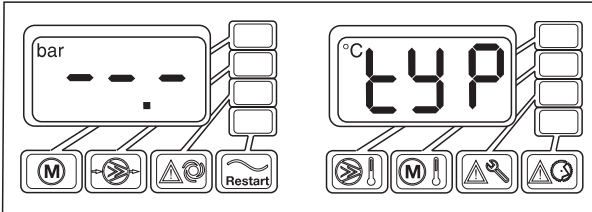
#### Note

*The "free load" input interrupts all possible load requirements:*

- First pressure band
- Second pressure band
- Remote load requirement

## 8.5 Installation of the new DELCOS 1000 electronics

With the display image the new Delcos 1000 prompts



you to enter the max. operating pressure of the system.

Select the max. operating pressure according to the stamped field “stage pressure” on the nameplate of the unit using the [+] and [-] keys (fig. 2).

Acknowledge the input by pressing the [-] key.

For safety reasons the operating pressure has to be entered twice.

### Important

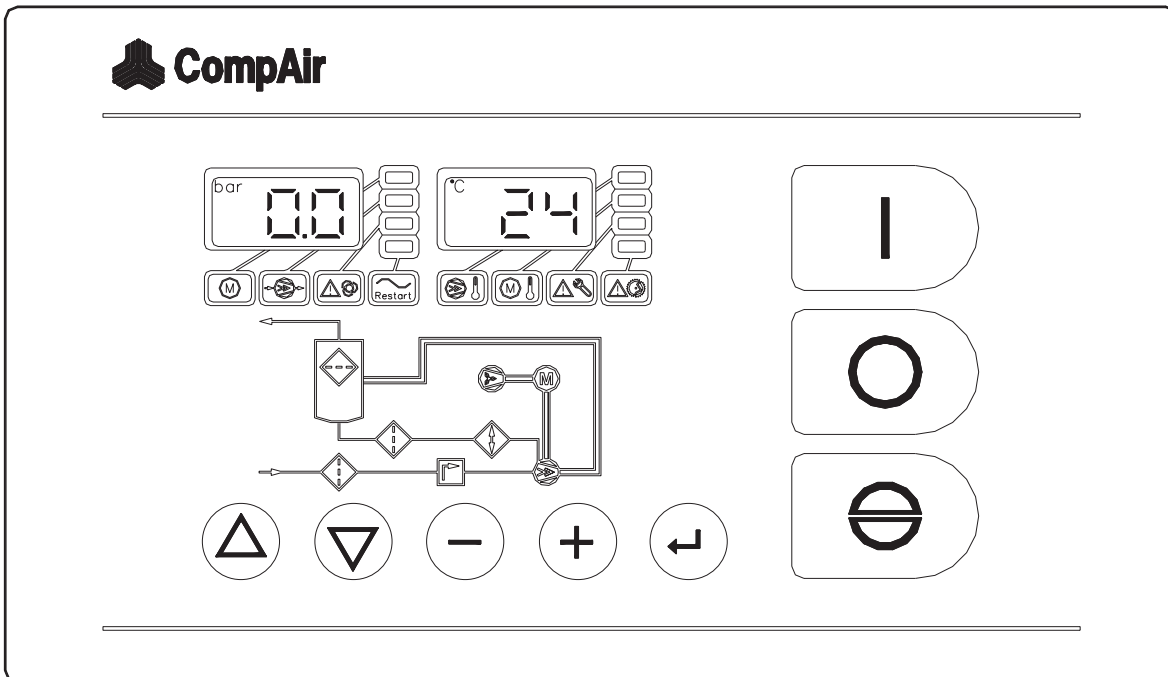
**The operating pressure as entered is firmly stored after the second acknowledgment and can no longer be changed!**

**The input of a wrong operating pressure can lead to considerable damage to the machine and results in the invalidity of liability and warranty claims!**

After this input the controller is programmed to its basic setting.

Check whether this presetting meets your operating requirements.

**8.6 Short operating instructions  
DELCOS 1000**



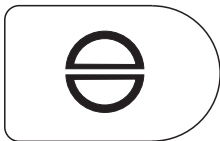
**Operating elements**



→ Switch the system on



→ Switch the system off



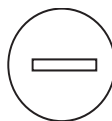
→ Acknowledgment and return to pressure and temperature display



Scroll upwards in the menu



Scroll downwards in the menu



Scroll to the left in the menu and change parameters

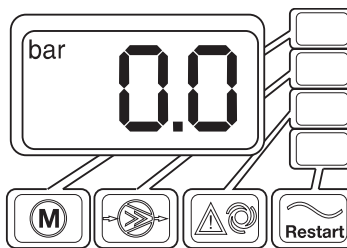


Scroll to the right in the menu and change parameters



Change settings  
Apply settings

**Light emitting diodes**

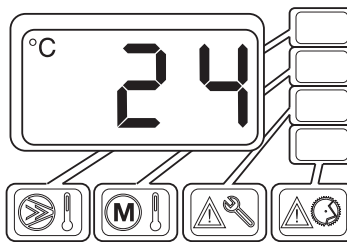


Automatic restart ON

flashing: Remote control, remote OFF  
on: Remote control, remote ON

Unit operating under load

flashing: The system is in stand-by mode, i.e. the motor can start up automatically at any time.  
on: The drive motor is running



Collective fault

Warning/maintenance

Malfunction/motor monitoring

Malfunction/final compression temperature



**Change of settings**

If the settings are to be changed, select the corresponding menu point and press the [↵] key. The setting value will flash and can now be changed with the [+] or [-] keys. This does not apply to factory pre-settings, with the exception of the Shr = starts per hour settings (see chapter "Change coasting time").

\* hold down for 5 seconds

Operating times		Operating times	
DL0031	<p>Operating times</p> <p>Load hours</p> <p>Operating hours</p>	<p>Operating mode</p> <p>Operating mode</p> <p>Aut = Automatic operation</p> <p>cnt = Continuous operation</p> <p>Local/remote control</p> <p>Loc = Local control</p> <p>Etm = Remote control</p> <p>Automatic restart</p> <p>Start delay for deferred start-up(s)</p> <p>Limited power failure time</p> <p><b>Note</b></p> <p>The menu point for the additional automatic restart after power failure (PF) is only displayed if this function has been activated. See chapter "Additional automatic restart after power failure".</p>	<p>Factory pre-settings</p> <p>max. operating pressure</p> <p>Start-up protection</p> <p>Shutdown excess. comp. temp.</p> <p>Early warning excess. comp. temp.</p> <p>Start-up blockage low temp.</p> <p>Star/delta chang. over time</p> <p>Max. number of starts per hour</p> <p>Soft-stop time</p>
	<p>Mains pressure</p> <p>Mains pressure display</p> <p>Pressure band 1, cut-out pressure</p> <p>Pressure band 1, cut-in pressure</p> <p>Pressure band 2, cut-out pressure</p> <p>Pressure band 2, cut-in pressure</p>	<p>Maintenance</p> <p>Remaining time air filter</p> <p>Remaining time oil filter</p> <p>Remaining time fine separator</p> <p>Remaining time oil change</p> <p>Shutdown at - 100 hours</p>	
	<p>Press. &amp; Temp.-display</p> <p>Fault storage</p> <p>Fault message indicated (Er1 = latest entry).</p> <p>The error codes in the right display can be found in the fault storage table.</p> <p>Pressure band 2 can be switched to via the terminal strips.</p>		