

Operating Instructions

ECC - Electronic compressor control





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GENERAL INFORMATION

General Information

We strongly recommend reading this manual thoroughly prior to operation and follow all the safety precautions precisely. Damage resulting from any deviation from these instructions is excluded from warranty and liability for this product. Carry out other commissioning steps only if you have fully understood the following contents.

Before commissioning and using the unit, carry out all the essential preliminary work and measures concerning legal regulations and safety. These are described on the following pages of this operation manual.

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Description of marks and warning signs

The following warning signs are used in this document to identify the corresponding warning notes which require particular attention by the user. The warning signs are defined as follows:



Caution

Indicates an imminently hazardous situation which, if not avoided, could result in serious injury, physical injury or death.



Warning

Indicates a potentially hazardous situation which, if not avoided, could result in physical injury or damage to the product or environment.



Note

Indicates additional information on how to use the unit.



DESCRIPTION

Specifications and Options

All L&W compressors can be optionally equipped with the all-electrical computer supported control system "ECC". It is easy to operate and allows multiple and individual settings.

Specifications

- LCD-Display with key pad
- Automatic & semi-automatic operation mode
- Automatic dump system
- Integrated counter for operation hours
- Integrated counter for load cycles
- Maintenance intervals automatically displayed
- Required service part numbers automatically displayed
- Fully adjustable pressure ranges for start and stop
- Warning messages ("Housing Open" / "Emergency Switch")
- Check of end-pressure safety valve possible
- Auto switch-off when system is not running
- Extendable by additional modules (e.g. external filling panel)
- Easy to operate menu
- Door position switch (housing open message)
- Load-free or depressurised start cycles

Options

- Oil pressure control
- Oil temperature control
- Cylinder head temperature control
- Inter stage pressure monitoring
- PIN controlled access
- Master / slave option (if more than one ECC equipped compressors are combined)

DESCRIPTION

Switchboard



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No.	Description
1	LCD Display
2	Key Pad
3	LED Display (Compressor OFF)
4	LED Display (Power)
5	LED Display (Compressor ON)



OPERATION AND FUNCTION

Main Menu

Immediately after the compressor has been connected to power, the ECC-display shows the following Main Menu::

Charging	0 min
Total	0,0 h
Start : 1	Stop : 0
Help: *	OFF
Final Press	0 bar

Present filling time in minutes

Total operation hours

Key 1 to start compressor / Key 0 to stop compressor

* Key leads to submenus Current operation state = Off

Present filling pressure

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The following keys can now be used:

Key	Function / Description
1	Start - Starts the compressor
0	Stop - Stops the compressor
*	Leads to the submenus

After typing the * key the following Selection Menu appears.



OPERATION AND FUNCTION

Selection Menu (M100)

After typing the * key in the Main Menu the following Selection Menu appears.

Selection:		
2	Display	Key 2 leads to submenu "Display"
3	Settings	Key 3 leads to submenu "Settings"
4	Test	Key 4 leads to submenu "Test"
5	Statistics	Key 5 leads to submenu "Statistics"
6	Maintenance	Key 6 leads to submenu "Maintenance"
7	Operation Mode	Key 7 leads to submenu "Operation mode"
(M100)	Return : #	Key # leads back to "Main Menu"

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(M100) tells that you are currently on menu page 100.



Note

At any time, the unit can be started with key 1 or shut down with key 0.
Caution: Risk of accident during maintenance work!

OPERATION AND FUNCTION

Display Menu (M200)

Pushing key 2 in the Selection Menu leads to Submenu "Display".

Display I:	
2	Press. Stage 1
3	Press. Stage 2
4	Press. Stage 3
5	Cyl. Head Temp.
6	Oil Temp.
7	Display II
(M200)	Return : #

Key 2 shows current pressure of the 1st stage*

Key 3 shows current pressure of the 2nd stage

Key 4 shows current pressure of the 3rd stage

Key 5 shows temperature of the final stage cylinder head

Key 6 shows the oil temperature

Key 7 shows Display II

Key # leads back to "Main Menu"

(M200) tells that you are currently on menu page 200.

By pushing key 2 (inter-stage pressure 1) the following Display appears.

Inter-Stage Pressure Display

Pushing key 2 in the Display Menu leads to the Inter-Stage Pressure 1 Display Menu.

Charging	0 min
Total	0,0 h
Start: 1	Stop: 0
Help:*	OFF
Press.	0 bar
1 st Stage	0,0 bar

Use keys 3 to 6 in the Menu "Display I" to change between the displayed values.



Note

Pushing key 8 in the display menu "Display II" leads to the option "Pressure200/300" for compressors with 2 filling pressures. Displayed in field 3 of the display menu "Display I".



OPERATION AND FUNCTION

Display II (M270)

Pushing key 7 in the Selection Menu leads to Menu "Display II".

Display II:

Press.	Temp.
4: 0	C: 0
5: 0	D: 0
6: 0	E: 0
7: 0	F: 0
bar	°C
(M270)	Return : #

This display shows further customer specific pressure and temperature values.

Key # leads back to "Main Menu"

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OPERATION AND FUNCTION

Settings Menu (M300)

Pushing key 3 in the Selection Menu leads to the Settings Menu.

Settings:	
Automatic	
2	Stop pressure
3	Restart Press.
Semi-Automatic	
4	Stop Pressure
9	Close
(M300)	Return : #

Key 2 leads to submenu „Set Stop Pressure“

Key 3 leads to submenu „Set Restart Pressure“

Key 4 leads to submenu „Set Stop Pressure“

Key 9 leads back to submenu "Selection"

Key # leads back to "Main Menu"

Use menu M700 to change between "Automatic" and "Semi-Automatic" mode.

Restart pressure can only be set in "Automatic Mode".

Prior to setting the pressure, start the safety valve test.



Attention during maintenance

During automatic mode, the compressor can automatically start by itself at any time, depending on the selected restart pressure (see "Set Restart Pressure" M330).



OPERATION AND FUNCTION

Set Stop Pressure - automatic mode (M320)

Only valid in automatic mode, see menu M700.

Set
Stop Pressure:
Actual: 330 bar
7 New Value:
>> XXX bar
4 (050,, 333)
8 Confirm
(M320) Return : #

Current restart pressure
Key 7 if restart pressure should be changed
XXX indicates modified stop pressure
Chooseable pressure range for restart pressure
Key 8 confirms new restart pressure
Key # leads back to "Main Menu"

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Set Restart Pressure - automatic mode (M330)

Only valid in automatic mode, see menu M700.

Set
Restart Pressure:
Actual: 180 bar
7 New Value:
>> XXX bar
4 (030,, 310)
8 Confirm
(M330) Return : #

Current restart pressure
Key 7 if restart pressure should be changed
XXX indicates modified restart pressure
Chooseable pressure range for restart pressure
Key 8 confirms new restart pressure
Key # leads back to "Main Menu"

Set Stop Pressure - semi-automatic mode (M340)

Only valid in semi-automatic mode, see menu M700.

Set
Stop Pressure:
Actual: 180 bar
7 New Value:
>> XXX bar
4 (030,, 310)
8 Confirm
(M340) Return : #

Current stop pressure
Key 7 if stop pressure should be changed
XXX indicates modified stop pressure
Chooseable pressure range for stop pressure
Key 8 confirms new restart pressure
Key # leads back to "Main Menu"

OPERATION AND FUNCTION

Test Menu (M400)

Pushing key 4 in the Selection Menu leads to the Test Menu.

Test:	
2	Solenoids
3	Safety Valve
4	Test-Stop
9	Close
(M400)	Return : #

Key 2 leads to submenu "Test Solenoids"

Key 3 leads to submenu "Test Safety Valve"

Key 4 leads to submenu "Test Stop without Venting"

Key 9 leads back to submenu "Selection"

Key # leads back to "Main Menu"

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Test Solenoids (M420)

Pushing key 2 in the Selection Menu leads to Submenu "Test Solenoids".

Test Solenoids	
3	open
7	close
9	Close
(M420)	Return : #

Key 3 opens solenoids

Key 7 closes solenoids

Key 9 leads back to submenu „Test“

Key # leads back to "Main Menu"



Note

This menu can not be left unless solenoids have been closed by key 7.

OPERATION AND FUNCTION

Test safety valve (M430)

Pushing key 3 in the Test Menu leads to Submenu "Test Safety Valve".



Note

Prior to starting the Test, close all filling connections (also connected filling panels if necessary). During this test, the compressor passes the selected stop pressure (see Menu M320) to test the correct function of the final pressure safety valve. This would limit the maximum operating over pressure of the unit in case of malfunction.

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Test
Safety Valve

Close Filling Valves!

5 Start	0 Stop
9 Close	
(M430) Return : #	

Key 5 to start test Key 0 to stop test

Key 9 leads back to submenu „Test“

Key # leads back to "Main Menu"

Test stop without venting (M440)

Pushing key 4 in the Test Menu leads to Menu "Test Stop without Venting".



Note

This test is only operable when the compressor has been started with key 1. This test mainly checks the leak tightness of pressure vessels, pressurised pipes, safety valves and the compressor block.

Test
stop without venting:

5 Stop	
6 Vent	
Pressure	0
	bar
9 Close	
(M440) Return : #	

Key 5 stops compressor during test run

Key 6 vents compressor after leak search has been finished

Shows current filling pressure

Key 9 leads back to submenu „Test“

Key # leads back to "Main Menu"



OPERATION AND FUNCTION

Statistics Menu (M500)

Pushing key 5 in the Selection Menu leads to Submenu "Statistics".

Statistics	
Operation Hours:	0,0 h
Start cycles:	00
Max Press	000 bar
9 Close	
(M500) Return : #	

Total operation hours of compressor unit

Total number of compressor starts

Maximum working pressure of unit (set by safety valve test)

Key 9 leads back to submenu „Selection“

Key # leads back to "Main Menu"

Push key 5 to get information on which ECC software version is currently installed on your system (M505), i.e.: By pushing key 2, the total load cycles of the filter housing are being indicated.

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OPERATION AND FUNCTION

Maintenance Menu (M600)

Pushing key 6 in the Selection Menu leads to the "Maintenance Menu".

Hours remaining		
Oil change	14 h	Shows remaining hours of listed components (i.e. next oil change in 14 hours,...)
Sinter filt	989 h	
Silencer	4989 h	
Valves	5989 h	
Oil filter	1000 h	
8 Change done		Key 8 leads to submenu "Receipt Maintenance"
9 Close		Key 9 leads back to submenu „Selection“
(M600) Return : #		Key # leads back to "Main Menu"

Remaining hours depend on the type. At the end of any remaining hours, the display indicates a warning message. Furthermore, the display informs about any possibly necessary spare parts with the corresponding L&W service part number.



Attention during maintenance

During automatic mode, the compressor can automatically start by itself at any time, depending on the selected restart pressure (see "Set Restart Pressure" M330).



OPERATION AND FUNCTION

Confirm Maintenance (M680)

Confirm Maintenance	
2	Oil change
3	Sinter filters
4	Silencer
5	Valves
6	Oil filter
(M680)	Return : #

Key 2 receipts oil change
Key 3 receipts change of sinter filters
Key 4 receipts change of silencer
Key 5 receipts change of valves
Key 6 receipts oil filter
Key # leads back to "Main Menu"

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Display confirms any reset of "Hours remaining" with the following message:

Confirm Maintenance	
Operation Hours Meter Set	
9	Close
(M680)	Return : #

Key 9 leads back to submenu "Hours remaining"
Key # leads back to "Main Menu"

OPERATION AND FUNCTION

Operation Mode (M700)

Pushing key 7 in the Selection Menu leads to the menu "Operation Mode".

Activated modes are always displayed in bolt letters (above example: **Semi-Automatic**).

Further settings can be made in the Settings Menu (M300).

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Betriebsart:	
2	Automatic
3	Semi-Automatic
4	bar /mpa
5	Sprache
9	Close
(M700)	Return : #

Key 2 activates automatic mode

Key 3 activates semi-automatic mode

Key 4 selects between bar and MPa (optional)

Key 5 leads to the "Language Menu"

Key 9 leads back to submenu „Selection“

Key # leads back to "Main Menu"

Language Menu (M750)

Language Menu	
2	German
3	English
4	French
5	Spanish
6	Dutch
7	Language II
(M750)	Return : #

Key 7 optional language (e.g. Chinese)

Key # leads back to "Main Menu"

OPERATION AND FUNCTION

Adjusting Display Backlight

The brightness of the display can be adjusted with an adjusting screw on the back of the control.

Software Update

Software updates can only be carried out by L&W. To carry out an update, the device has to be send to the L&W service.



Adjust brightness



Adjust brightness

SPARE PART LISTS

Best.-Nr. / Order No.	Benennung	Description
002141	1. Stufe Druckaufnehmer 0-10 bar	1st stage pressure sensor 0-10 bar
002142	2. Stufe Druckaufnehmer 0-60 bar	2nd stage pressure sensor 0-60 bar
003888	3. Stufe Druckaufnehmer 0-100 bar	3rd stage pressure sensor 0-100 bar
002143	Endstufe Druckaufnehmer 0-400 bar	Final stage pressure sensor 0-400 bar
006890	Druckaufnehmer 420 bar Version 0-600 bar	Pressure sensor 420 bar version 0-600 bar
004840	Öldruckaufnehmer 0-6 bar	Oil pressure sensor 0-6 bar
006912	Öltemperatursensor	Oil temperature sensor
003501	Zylinderkopf - Temperatursensor	Cylinderhead temperature sensor

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002141 / 002142 / 002143 / 003888 / 004840
Druckaufnehmer / Pressure sensor



006890 - Druckaufnehmer 420 bar /
Pressure sensor 420 bar



006912 - Öltemperatursensor
Oil temperature sensor



003501 - Zylinderkopf - Temperatursensor
Cylinderhead temperature sensor



LENHARDT & WAGNER GMBH

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