Operating Instructions

These Operating Instructions include safety regulations and are intended as a user's guide to ensure quick installation and commissioning of Eta-K motors. A detailed description of all parameters and the telegram format of the serial interface can be seen from the Design Guide.

When reading these Operating Instructions, you will come across different symbols that require special attention.

The symbols used are the following

Indicates a general warning

Indicates something to be noted by the reader

Indicates a high-voltage warning

Contents

1. Safety

The voltage of the Eta-K motor is dangerous whenever the equipment is connected to the mains. Incorrect installation may cause equipment failure, serious personal injury or even death.
Consequently, the instructions in this manual, as well as applicable national and international rules and safety regulations, must be complied with.
Touching the electrical parts may be fatal - even after the equipment has been disconnected from mains.
Wait at least 4 minutes.

- The installation must be properly protected and isolated.
- All covers must be in place.

NB!
The user or the electrician installing the equipment is responsible for ensuring that proper earthing and protection of the unit are carried out in accordance with applicable national and local regulations and standards.

■ Safety regulations

1. The Eta-K frequency converter must be disconnected from mains if repair work is to be carried out. Check that the mains supply has been disconnected and that the necessary time (4 minutes) has passed.

2. It is to be ensured that, in accordance with local and national regulations, correct earthing of the equipment is established, the user is protected against supply voltage, and the motor is protected against overload.

   RFI-switch, protective multiple earthing or normal earthing can be used as extra protection, taking into account any applicable, local safety regulations.

   In the case of an earthing fault, a DC voltage content may develop in the fault current.

   If RFI-switches are used, local regulations must be complied with. The relays used must be suitable for protection of three-phase AC units with bridge rectifier and for a short discharge upon power-up.

3. The earth leakage current is higher than 3.5 mA. Consequently, a permanent installation and extra protective earthing are required for the Eta-K.

■ Warning against unintended start

1. The motor can be brought to a stop by means of a digital command, a bus command or a setpoint, even if the Eta-K frequency converter is still connected to mains.
   If, however, personal safety considerations make it necessary to ensure that no unintended start occurs, these stop functions are not sufficient.

2. During programming of the Eta-K frequency converter, the motor may start without warning.

3. A motor that has been stopped may start if the electronics of the Eta-K frequency converter are defective, or if a temporary overload or a fault in the supply voltage ceases.

Warning:

Touching the electrical parts may be fatal - even after the equipment has been disconnected from mains.
Wait at least 4 minutes.

2. Mechanical installation

If overheating of the frequency converter is to be avoided, it must be ensured that the ambient temperature does not exceed 40°C and the 24-hour average temperature does not exceed 35°C. If the ambient temperature is in the range of 40-55°C, only a reduced output load is available for continuous operation. See also the section on derating in the Design Guide.

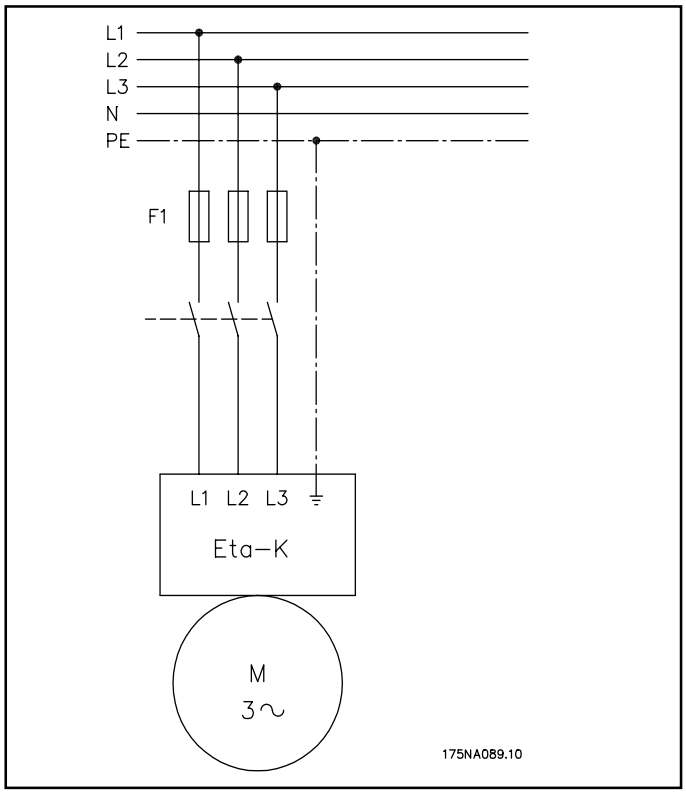
If several motors with add-on frequency converter are installed close to each other, it is to be ensured that no recirculation of hot output air occurs.

3. Electrical installation

All terminals are located in the converter housing, which can be accessed by removing the cover fastened by four screws.

Remove the blind plug and feed the cable through the orifices. For correct cable and union sizes see Technical Data.

3.1 Connection diagram, power section



3.2 Mains connection

Mains terminals L_1, L_2 and L_3

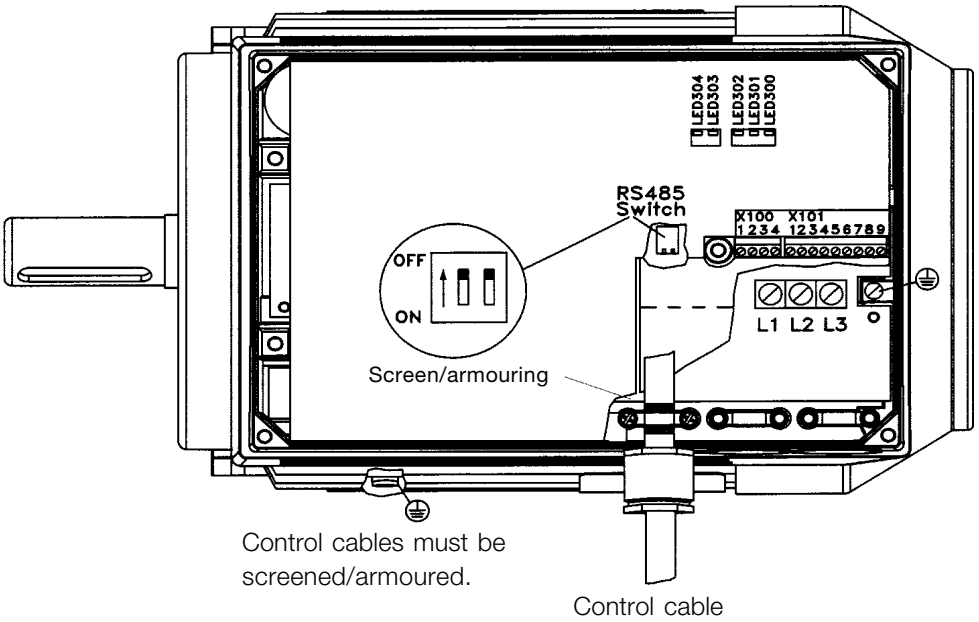
Mains voltage: 3 x 380-480 V.

Connect the three mains phases to terminals L_1, L_2, and L_3 and connect the earthing screw to the appropriate terminal.

NB!
Reversing the direction of rotation of the motor by switching two phases is not possible. The motor shaft turns clockwise as standard (forward).

NB!
Eta-K motors are suitable for operation on TT, TN and IT mains. Where the version with radio interference filter 1B (Domestic) is used, operation on TT and TN mains is possible.

Connection of the terminals



3.3 Control section

X101: Terminal strip for analogue/digital control signals

Terminal no.	Function	Technical data
1	Analogue input (0-20 mA)	0/4..±20 mA, R_i approx. 200 Ohm
2	Analogue (0-10 V)/digital input 2	0 .. +10 VDC, R_i = 10 kOhm I 0 / 24 VDC, R_i approx. 2 kOhm
3	Digital input 3	0 / 24 VDC, R_i approx. 2 kOhm < 5 V = log. "0" > 10 V = log. "1"
4	Digital input 4	
5	Digital input 5	
6	24 V DC supply for digital inputs	max. 50 mA
7	10 V DC supply for potentiometer	max. 15 mA
8	Earthing terminals 1-7 and 9	
9	Analogue (0-20 mA)/digital output	0/4...20 mA, max. 500 Ohm I 0/ 24 VDC, min 600 Ohm

Serial interface

X100: Terminal strip for data communication

Terminal no.	Function	Description
1	P RS485	For PC connection or Profibus connection
2	N RS 485	
3	5 VDC	Supply for bus RS 485
4	0 VDC	

If connection is established via the serial communication interface RS 485, the bus must be closed at both ends by a resistor network. This can be obtained by setting both of the RS 485 switches to ON.
For a description of the PROFIBUS version, see Manual MG97L203.

3.4 Status and alarm messages

3.4.1 Status display

LED 300-304	Message
LED 300 (red)	Trip in case of disturbance
LED 301 (yellow)	Warning
LED 302 (green)	Operation
LED 303-304 (green)	Communication message

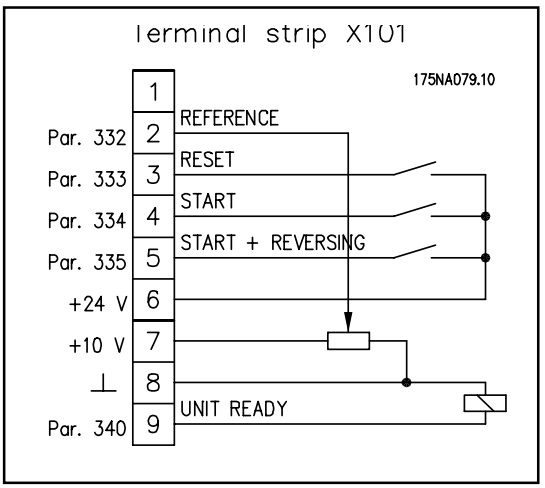
3.4.2 Clearing a fault

Faults: Signal to digital input (for clearing, see Standard connection control terminals) or mains off.

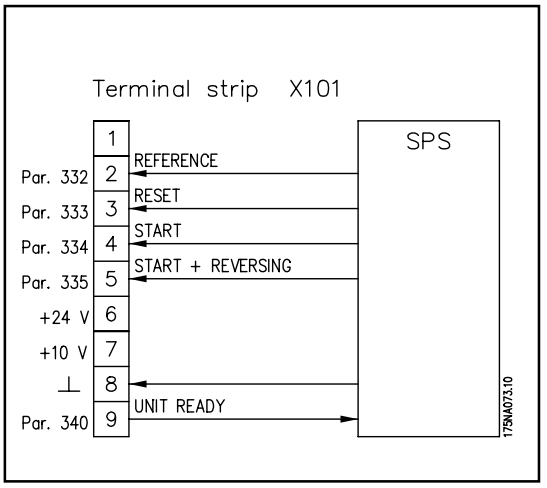
NB!
In case of fault messages from the power unit, error clearing must be carried out by switching off at the mains.

3.5 Standard connection control terminals

Eta-Ks have their parameters set in the factory, as shown in the connection diagram for operation in 2 directions of rotation with analogue reference value through a voltage value of 0 to 10 V and fault clearing via an external signal. To change these settings, use the optional control panel LCP2 (see Accessories) or a PC with VLT Dialog software.



The value of an external reference value potentiometer must be between 1 kOhm and 5 kOhm.



Control signals from SPS

Par. No.	Value	Comment
200	132 Hz BOTH DIRECT.	Allows operation in both directions of rotation
331	NO OPERATION	
332	REFERENCE	0 .. 10VDC
333	RESET	Short signal resets converter fault indicator back to ready mod
334	START	Log "1" Term. 4 Right rotatio
335	START REVERSING	Log "1" Term. 5 Left rotatio
340	UNIT READY	Eta-K ready (no fault) Output 24V DC

3.6 EMC-correct installation

If EMC-correct electrical installation is to be obtained, the control cables must be screened/armoured.
The screen/armour is to be earthed at both ends.
Avoid installation with twisted screen ends (so-called pigtails), as this reduces the screening/armouring effect at high frequencies. Use cable clamps instead.

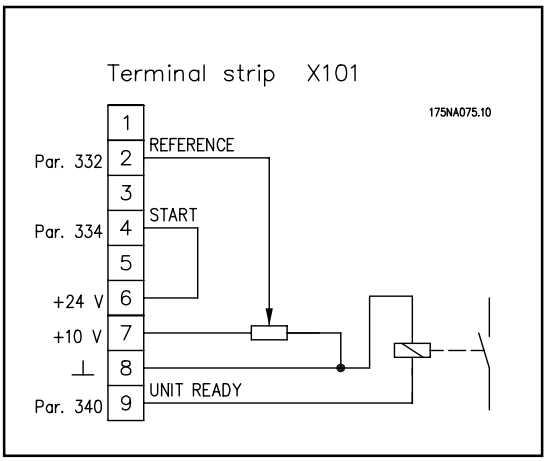
3.7 Technical data

Eta-K type		K305	K307	K311	K315	K322	K330	K340	K355	K375
Output										
Output voltage	V	3 x 0 ... U_{MAINS}								
Output frequency	Hz	0 ... 132								
Ramp times, adjustable	s	0.05 - 3600								
Input										
Connection voltage	V	3 x 380 ... 480 +/- 10%								
Connection current at 380 V	A	1.4	1.7	2.5	3.3	4.7	6.4	8.4	11.1	15.1
Connection current at 480 V	A	1.1	1.4	2.0	2.6	3.7	5.1	6.6	8.8	11.9
Connection frequency	Hz	50/60								
Max. mains cable cross-section	mm^2	4.0								
Max. control cable cross-section	mm^2	1.5								
Max. cable cross-section for serial interface	mm^2	1.5								
Max. pre-fuses	A	16	16	16	16	16	16	25	25	25
Power factor / cos phi		0.88 / 1.0 at rated load								
Switching on the input	Nos./2 min.	approx. 1								
Protection type		IP65								
Ambient temperature range	°C	-10 to +40° C for operatio -25 to +65/70° C for storage/transport								
Relative humidity	%	93 +2, -3 (IEC 68-2-3)for storage/transpor								
Vibration test	g	1								
Union size		3 x PG 16						1 x PG 21, 2 x PG16		

4. Connection examples

4.1 One direction of rotation with analogue reference (voltage) and reset via mains output

The direction of rotation of the drive motor can be changed by changing the start signal from Terminal 4 (motor shaft right rotation) to Terminal 5 (motor shaft left rotation) or by re-programming Parameter 334 to "START+REVERSING".

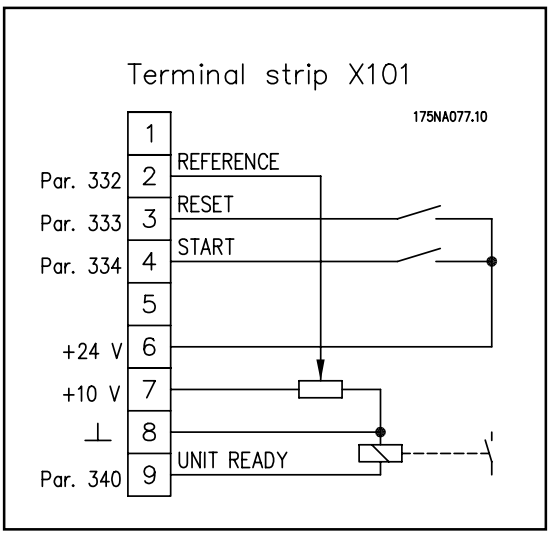


Par. No.	Value	Comment
331	NO OPERATION	
332	REFERENCE	0...10V or via potentiometer
333	NO OPERATION	
334	START	
335	START + REVERSING	
340	UNIT READY	Eta-K ready
405	1 x AUTOMATIC	Automatic reset

In conjunction with the reference value potentiometer (see 5.1), this switching variant is recommended as a replacement for adjustable drive motors. The motor is stopped by the supply of a reference value of 0 or mains off.

4.2 One direction of rotation with analogue reference (voltage) and reset via terminals

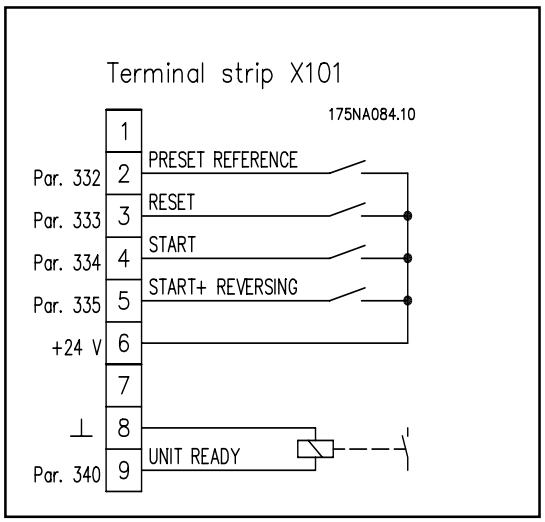
The direction of rotation of the drive motor can be changed by changing the start signal from Terminal 4 (motor shaft right rotation) to Terminal 5 (motor shaft left rotation) or by re-programming Parameter 334 to "START+REVERSING".



Par. No.	Value	Comment
331	NO OPERATION	
332	REFERENCE	
333	RESET	
334	START	
335	NO OPERATION	
340	UNIT READY	Eta-K read

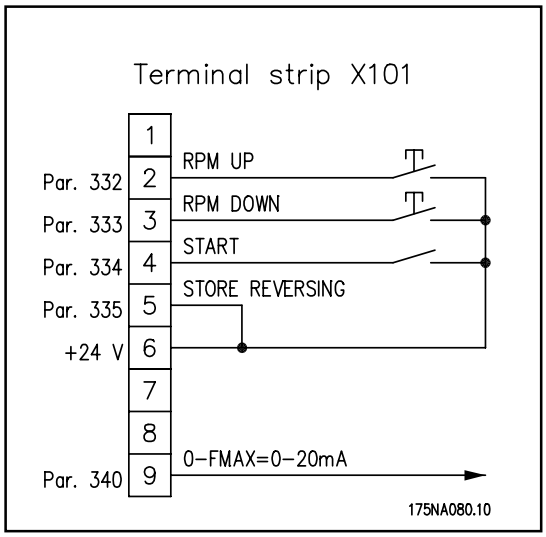
4.3 2 RPM values + 2 directions of rotation

Depending on the type of drive, right rotation or left rotation of the working shaft is obtained by a signal to Terminal 4 or 5. Using this switching variant, the drive can be used as a replacement for pole changer motors.



Par. No.	Value	Comments
200	132 Hz BOTH direct.	
331	NO OPERATIO	
332	PRESET REFERENCE	logic "0" corresponds to prese reference 1 (par. 215) logic "1" corresponds to prese reference 2 (par. 216)
333	RESET	
334	START	
335	START + REVERSING	
340	UNIT READ	Eta-K ready

4.4 Motor potentiometer



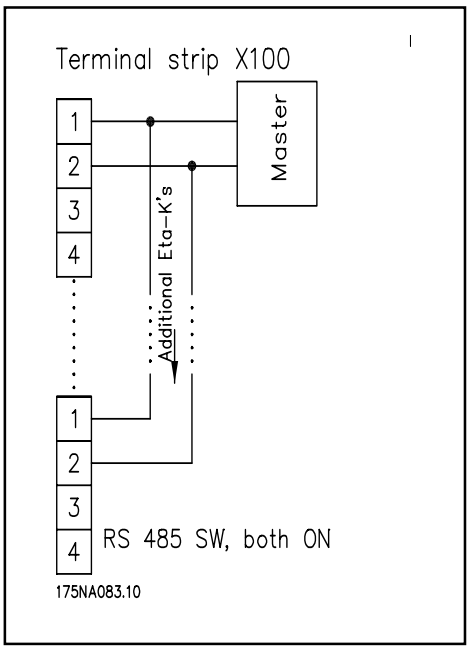
Par. No.	Value	Comments
331	NO OPERATION	
332	RPM UP	A voltage pulse of 20ms(min.) and pause of min. 20ms yields an RPM change of 0.1
333	RPM DOWN	
334	START	
335	STORE REFERENCE	
340	0-FMAX = 0-20 mA	Output of an electrical signal proportional to the current frequenc
405	1 x AUTOMATIC	Fault clearing by means o mains off

4.5 Profibus

In the Profibus version, the Eta-K motor has an integrated Profibus DP interface (max. baudrate: 3 Mbaud). You can download the accompanying GSD data file from the Internet: www.danfoss-sc.de.
A sample is also provided in the Profibus manual.

Par. No.	Value	Comments
90	e.g. PPO TYPE 1	depends on use
91	e.g 6	enter bus address

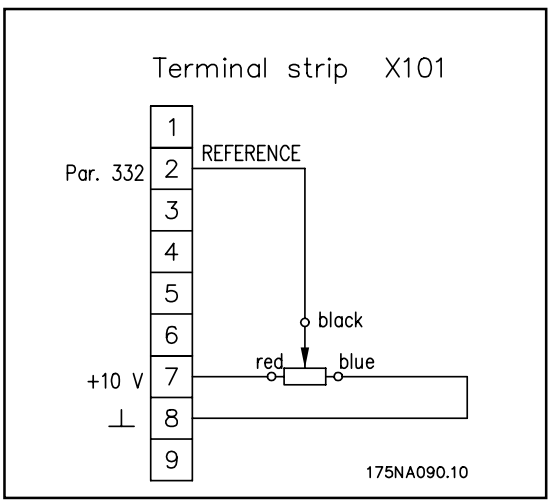
NB!
Description of the PROFIBUS version - see PROFIBUS manual MG.97.LX.YY.



5. Accessories

5.1 Reference value potentiometer

For local supply of the RPM reference value, a reference value potentiometer shielded model IP 65 can be used. This can be mounted inside one of the screw fittings. The potentiometer is built in and wired at the factory.
Resistance 1 kOhm, Swing angle 270°.
Identification No.: 2523574



5.2 Operation software for PC: VLT Dialog

The VLT Dialog software, available on CD-ROM, includes:
Identification No.: 175Z0953

Basic module for comfortable parameterisation and test runs.

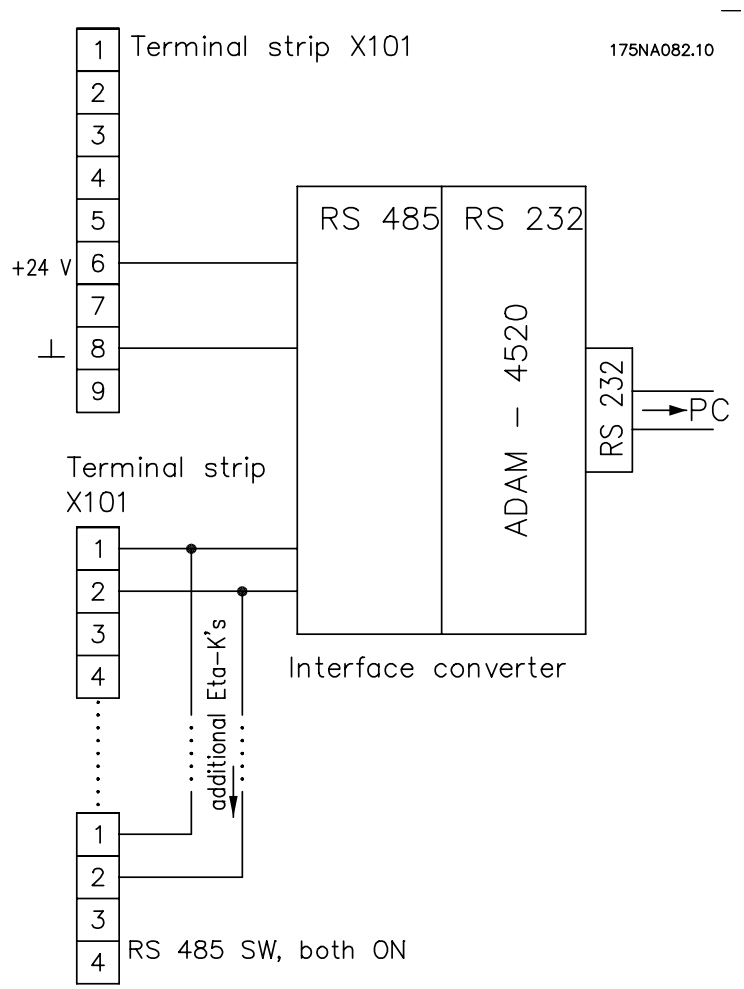
- Change setting, copy and document
- User-defined parameterisation via setting wizard
- Commissioning and test runs of the frequency converter

Log module with monitor function for commissioning of complex systems.

- Display of selected measuring values in the form of graphs
- Entry of real-time operating data in the files
- Data storage and Direct-Data-Exchange
- Remote diagnosis via modem connection

Screen module for the making of input and output screens with password protection.

NB!
Please note that an interface converter (RS 232 PC interface to RS 485 converter interface) is required to connect a PC to the frequency converter (e.g. model ADAM 4520).



Note: A DOS version of the VLT programming software can be downloaded from the Internet:
www.danfoss-sc.de

5.3 Control panel (LCP 2)

Eta-K optionally features a Local Control Panel - LCP 2 which makes up a complete interface for operation and monitoring of the Eta-K.

NB!

The LCP from the VLT 5000 Series (code number 175Z0401) cannot be used for the Eta-K. However, the general LCP 2 (code number 175N0131) can be used for both the FCM 300, Eta-K, VLT 2800 and the VLT 5000 Series.

LCP installation

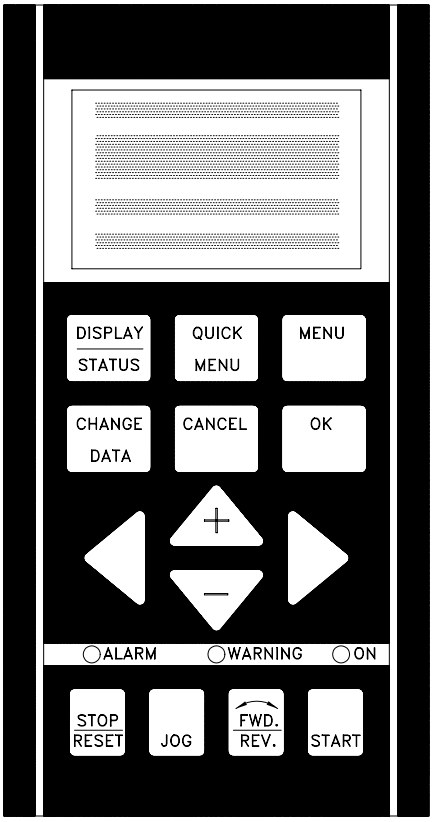
The LCP 2 is connected to the terminal X100, 1-4 (see separate instruction MI.03.AX.YY).

LCP functions

The functions of the control panel can be divided into three groups:

- display
- keys for changing program parameters
- keys for local operation

All data are indicated by means of a 4-line alpha-numeric display, which in normal operation is able to show 4 measurements and 3 operating conditions continuously. During programming, all the information required for quick, effective parameter Setup of the Eta-K will be displayed. As a supplement to the display, there are three LEDs for voltage, warning and alarm.
All program parameters of the Eta-K can be changed immediately from the control panel, unless this function has been blocked via parameter 018.



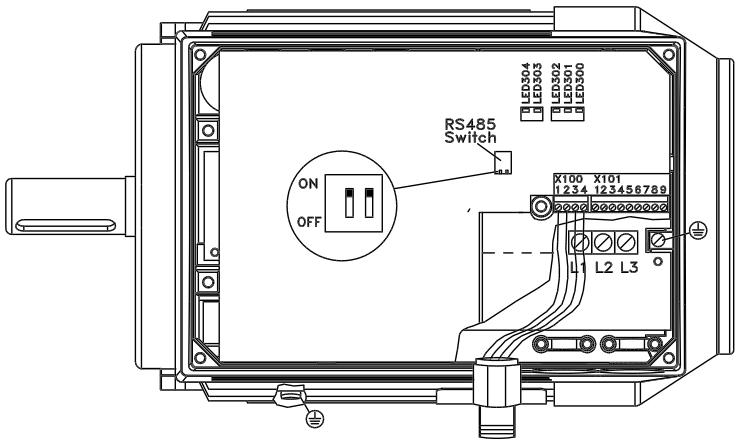
DANFOSS 175ZA004.10

Two cable versions are available for connection to the frequency converter:

- Cable for direct connection of the LCP to terminal strip X100. Identification No.: 175N0165.
- Cable with plug for connection of the LCP to the socket in the PG union. Identification No.: 175N0162.

5.4 Switch set

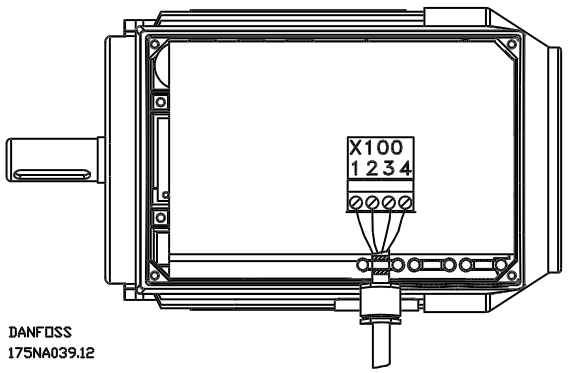
Switch receptacle for building in to PG16 with connection to Terminal strip X100. Identification no.: 175N0161



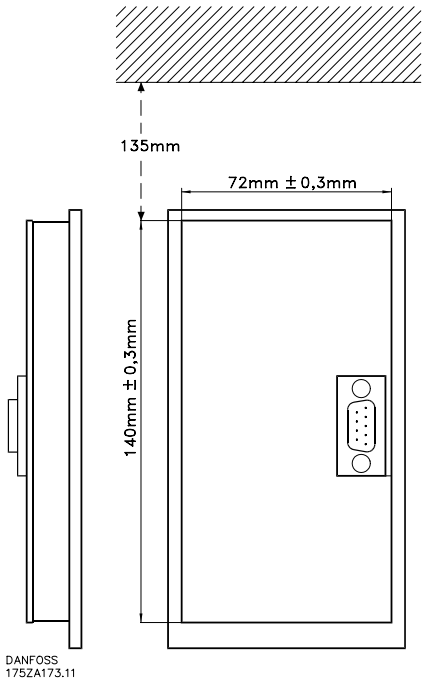
175NA061.10

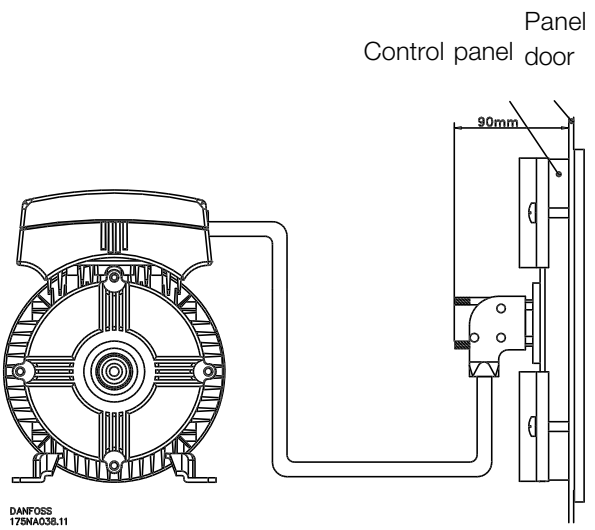
5.5 Fitting kit for control panel

Connections:

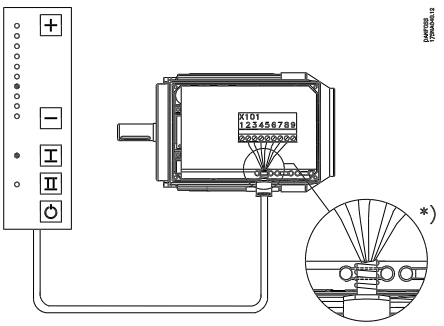


Colour of wire/	Terminal X100/	D-Sub-Pin
yellow	1	8
green	2	9
red	3	2
blue	4	3





5.6 Hand-held control terminal (LOP)



Use the +/- keys to set reference

Wiring

Colour of wire	Terminal	Function
White	2	Reference
Brown	3	Reset
Purple or Grey	4	See table under button I
Green	5	See table under button II
Red	6	+24V
Yellow	7	+10V
Blue	8	Ground

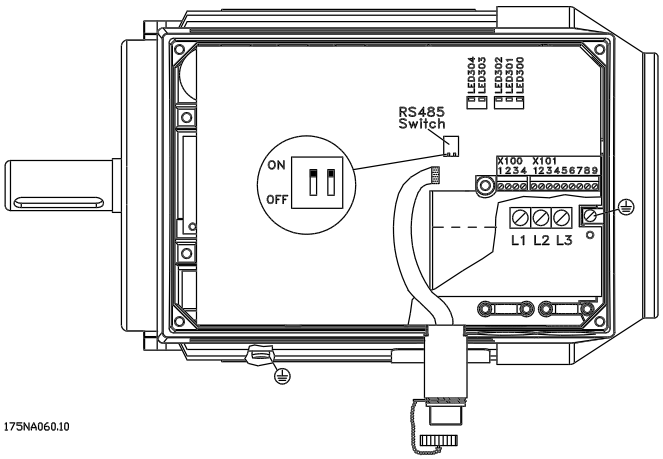
Function/settings	Key I (Start)	Key II (Start)	Key ⏻ (Stop)
Default - Dual direction operation (connect grey wire): Parameter 335 = 10 (start reversing) Parameter 200 = 1 (both directions)	Run forward	Run reverse	Stop (and reset - if trip)

At power up the unit will always be in stop mode. Set reference will be stored during power down. If permanent start mode is desired, connect terminal 6 to terminal 4 and do not connect purple/grey wire to terminal 4. This means the stop function on LOP is disabled.

NB!
After fitting, cut off or isolate excess wire.

5.7 Service plug kit

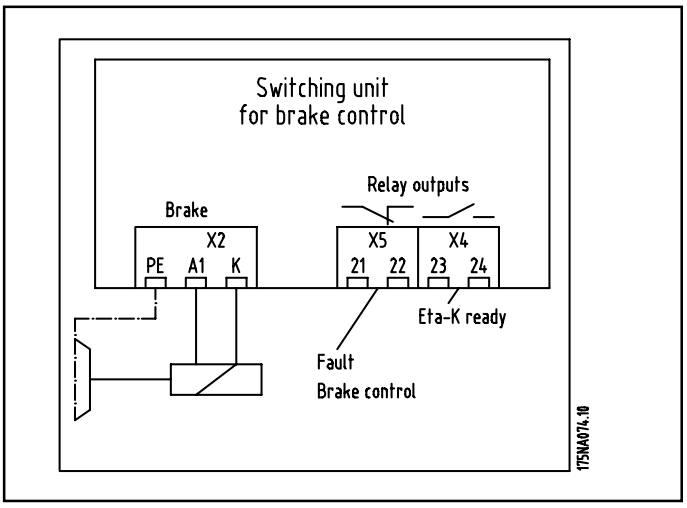
Purpose:
To run LCP2 and PROFIBUS at the same time.
The service plug can be used with Eta-K of serial number 03Gxxx and software version as from 2.03.
Used together with cable for plug kit 175N0162.



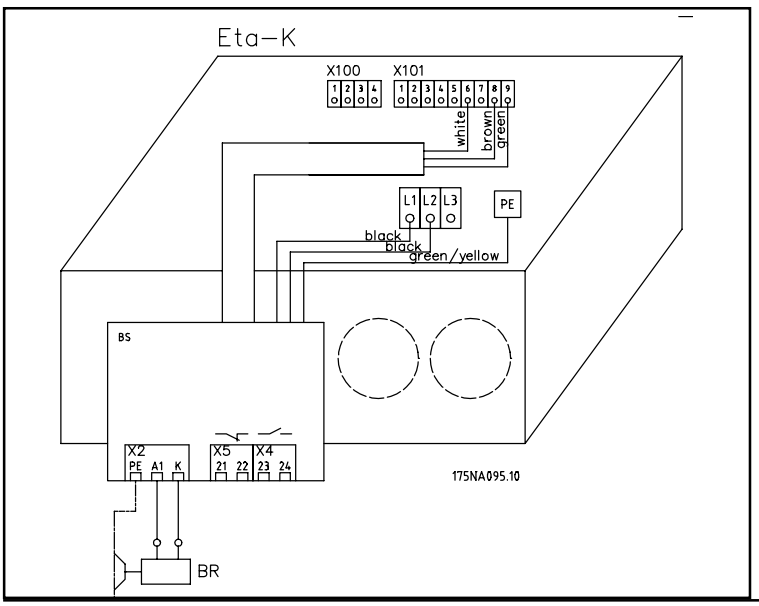
5.8 Brake control

This external switching unit serves to supply and control a mechanical brake. It is mounted into one of the screw fittings.
Identification no.: 1495861
Control of the brake is carried out via the output of the converter by means of parameters 138 and 139. The output frequencies at which the brake is to be released or engaged can be set. The switching unit has 2 relay outputs for the messages "Eta-K ready" (X4 contact closed) and "Faulty brake control" (X3 contact open). The output signal "Eta-K ready" is no longer available at the control terminals of the converter when brake control is in use.
Through the rectifier of the switching unit, different braking voltages are generated that depend on the mains voltage. The corresponding values are given in the following table.

Mains voltage AC	Brake voltage DC
380...400 V	180 V
460...480 V	210 V



Electrical connection of brake control to Eta-K



6. Parameter list

	Function	Range/number of settings/value	Factory setting	Parameter No.
Operation and display	Language	6	English	Parameter 001
	Local/remote control	2	Remote control	Parameter 002
	Local reference		000.000	Parameter 003
	Active Setup	4	Setup 1	Parameter 004
	Programming Setup	4	Active setup	Parameter 005
	Copying of Setups	4	No copying	Parameter 006
	LCP copy	4	No copying	Parameter 007
	Display scaling of motor frequency		100	Parameter 008
	Display line 2	24	Frequency [Hz]	Parameter 009
	Display line 1.1		Reference [%]	Parameter 010
	Display line 1.2		Motor current [A]	Parameter 011
	Display line 1.3		Power [kW]	Parameter 012
	Local control/configuration	5	LCP digital control/par. 100	Parameter 013
	Local stop	2	Possible	Parameter 014
	Local jog	2	Not possible	Parameter 015
	Local reversing	2	Not possible	Parameter 016
	Local reset of trip	2	Possible	Parameter 017
	Lock for data change	2	Not locked	Parameter 018
	Operating state at power up, local c.	3	Forced stop, use saved ref.	Parameter 019
Load and motor	Configuration	2	Speed, open loop mode	Parameter 100
	Torque characteristics	4	Constant torque	Parameter 101
	Motor power	XX.XX kW - dep. on unit		Parameter 102
	Motor voltage	XX.XX V - dep. on unit		Parameter 103
	Motor frequency	XX.X Hz - dep. on unit		Parameter 104
	Motor current	XX.XX A - dep. on unit		Parameter 105
	Rated motor speed	XX rpm - dep. on unit		Parameter 106
	DC braking time	0.0 (off) - 60.0 sec.	10.0 sec.	Parameter 126
	DC brake cut-in frequency	0.0 Hz - f_{MAX}	0.0 Hz	Parameter 127
	Motor thermal protection	2	Disable	Parameter 128
	DC braking voltage	0 - 100 %	0 %	Parameter 132
	Start voltage	0.00 - 100.00 V	Motor dependent	Parameter 133
	Start compensation	0.0 - 300.0 %	100.0 %	Parameter 134
	U/f ratio	0.00 - 20.00 V/Hz	Motor dependent	Parameter 135
	Slip compensation	-500.0 - +500.0 %	100.0 %	Parameter 136
	DC holding voltage	0 - 100 %	0 %	Parameter 137
	Brake cut out frequency	0.5 - 132 Hz	3.0 Hz	Parameter 138
	Brake cut in frequency	0.5 - 132 Hz	3.0 Hz	Parameter 139
References and limits	Rotation direction	3	Only clockwise 0 - 132 Hz	Parameter 200
	Min. output frequency (f_{MIN})	0.0 Hz - f_{MAX}	0.0 Hz	Parameter 201
	Max. output frequency (f_{MAX})	f_{MIN} - f_{RANGE}	f_{RANGE} (132 Hz)	Parameter 202
	Reference/feedback range	Min. - max./-max.- +max.	Min. - Max.	Parameter 203
	Minimum reference	-100,000.000 - Ref_{MAX}	0.000	Parameter 204
	Maximum reference	Ref_{MIN} - 100,000.000	50.000	Parameter 205
	Ramp-up time 1	0.15 - 3600.00 sec.	3.00 sec.	Parameter 207
	Ramp-down time 1	0.15 - 3600.00 sec.	3.00 sec.	Parameter 208
	Jog ramp time	0.15 - 3600.00 sec.	3.00 sec.	Parameter 211
	Quick stop ramp-down time	0.15 - 3600.00 sec.	3.00 sec.	Parameter 212
	Jog frequency	0 Hz - f_{MAX}	10.0 Hz	Parameter 213
	Reference function	2	Sum	Parameter 214

	Function	Range/number of settings	Factory setting	Parameter No.
	Preset reference 1	-100.00 % - +100.00 %	0.00 %	Parameter 215
	Preset reference 2	-100.00 % - +100.00 %	0.00 %	Parameter 216
	Catch up/slow down value	0.00 - 100.00 %	0.00 %	Parameter 219
	Current limit for motor mode	Min.- max. limit in % of I_{RATED}	Max. limit	Parameter 221
	Frequency bypass, bandwidth	0 (off) - 100 %	0 %	Parameter 229
	Frequency bypass 1	0.0 - 132 Hz	0.0 Hz	Parameter 230
	Frequency bypass 2	0.0 - 132 Hz	0.0 Hz	Parameter 231
Inputs and Outputs	Time out	1- 99 sec.	10 sec.	Parameter 317
	Function after time out	Off/Stop and trip	Off	Parameter 318
	Pulse reference/feedback, max. freq.	100 - 70000 Hz	5000 Hz	Parameter 327
	Terminal 1, analog input current	3	No operation	Parameter 331
	Terminal 2, digital input	25	Reference	Parameter 332
	Terminal 3, digital input	25	Reset	Parameter 333
	Terminal 4, digital input	24	Start	Parameter 334
	Terminal 5, digital input	23	Jog	Parameter 335
	Terminal 1, min. scaling	0.0 - 20.0 mA	0.0 mA	Parameter 336
	Terminal 1, max. scaling	0.0 - 20.0 mA	20.0 mA	Parameter 337
	Terminal 2, min. scaling	0.0 - 10.0 V	0.0 V	Parameter 338
	Terminal 2, max. scaling	0.0 - 10.0 V	10.0 V	Parameter 339
	Output functions	21	No operation	Parameter 340
Special functions	Brake function	Off/AC braking	Off	Parameter 400
	Reset function	11	Manual reset	Parameter 405
	Switching frequency	1.5 - 14.0 kHz	Unit dependent	Parameter 411
	Variable switching frequency	3	Temp. dep. sw. freq.	Parameter 412
	Overmodulation function	Off/On	On	Parameter 413
	Minimum feedback	-100,000 - FB_{HIGH}	0	Parameter 414
	Maximum feedback	FB_{LOW} - 100,000	1500	Parameter 415
	Reference/feedback unit	42	%	Parameter 416
	Process PID normal/inverse ctrl.	Normal/inverse	Normal	Parameter 437
	Process PID anti windup	Disable/Enable	Enable	Parameter 438
	Process PID start frequency	f_{MIN} - f_{MAX}	f_{MIN}	Parameter 439
	Process PID proportional gain	0.00 (off) - 10.00	0.01	Parameter 440
	Process PID integral time	0.01 - 9999 sec. (off)	9999 sec.	Parameter 441
	Process PID differentation time	0.00 (off) - 10.00 sec.	0.00 sec.	Parameter 442
	Process PID different. gain limit	5 - 50	5	Parameter 443
	Process PID lowpass filter time	0.1 - 10.00 sec.	0.1 sec.	Parameter 444
	Flying start	4	Disable	Parameter 445
	Switching pattern	2	SFAVM	Parameter 446
Serial communication	Bus address	1 - 126	1	Parameter 500
	Baudrate	300 - 9600 Baud/6	9600 Baud	Parameter 501
	Coasting	4	Logic or	Parameter 502
	Quick-stop	4	Logic or	Parameter 503
	DC-brake	4	Logic or	Parameter 504
	Start	4	Logic or	Parameter 505
	Reversing	4	Logic or	Parameter 506
	Selection of setup	4	Logic or	Parameter 507
	Selection of speed	4	Logic or	Parameter 508
	Bus jog 1	0.0 - f_{MAX}	10.0 Hz	Parameter 509
	Bus jog 2	0.0 - f_{MAX}	10.0 Hz	Parameter 510
	Telegram profile	Profidrive/FC Drive	FC Drive	Parameter 512
	Bus time interval		1 sec.	Parameter 513
	Bus time interval function	6	Off	Parameter 514

	Function	Range/number of settings	Factory setting	Parameter No.
	Data read-out: Reference	XXX.X		Parameter 515
	Data read-out: Refer. unit	Hz/rpm		Parameter 516
	Data read-out: Feedback			Parameter 517
	Data read-out: Frequency	Hz		Parameter 518
	Data read-out: Frequency x scale	Hz		Parameter 519
	Data read-out: Current	A x 100		Parameter 520
	Data read-out: Torque	%		Parameter 521
	Data read-out: Power	kW		Parameter 522
	Data read-out: Power	hp		Parameter 523
	Data read-out: Motor voltage	V		Parameter 524
	Data read-out: DC link voltage	V		Parameter 525
	Data read-out: FC therm.	0 - 100 %		Parameter 527
	Data read-out: Digital input			Parameter 528
	Data read-out: External reference	-200.0 - +200.0 %		Parameter 533
	Data read-out: Status word, binary			Parameter 534
	Data read-out: FC temperature	°C		Parameter 537
	Data read-out: Alarm word, binary			Parameter 538
	Data read-out: Control word, binary			Parameter 539
	Data read-out: Warning word, 1			Parameter 540
	Data read-out: Warning word, 2			Parameter 541
	Data read-out: Terminal 1, analog input	mA X 10		Parameter 542
	Data read-out: Terminal 2, analog input	V X 10		Parameter 543
	Operating data: Operating hours	0 - 130,000.0 hours		Parameter 600
	Operating data: Hours run	0 - 130,000.0 hours		Parameter 601
	Operating data: Number of power-up's	0 - 9999		Parameter 603
	Operating data: Number of overtemp.	0 - 9999		Parameter 604
	Operating data: Number of overvoltages	0 - 9999		Parameter 605
	Fault log, read-out: Error code	Index XX - XXX		Parameter 615
	Fault log, read-out: Time	Index XX - XXX		Parameter 616
	Fault log, read-out: Value	Index XX - XXX		Parameter 617
	Reset of hours-run counter	No reset/reset	No reset	Parameter 619
	Operation mode	3	Normal function	Parameter 620
	Nameplate: FC motor type	Depends on unit		Parameter 621
	Nameplate: Software version no.	Depends on unit		Parameter 624
	LCP version	Depends on unit		Parameter 625
	Nameplate: Database identification no.	Depends on unit		Parameter 626
	Nameplate: Application option type			Parameter 628
	Nameplate: Communication option type			Parameter 630
	BMC software identification			Parameter 632
	Motor database identification			Parameter 633
	Unit identification for communication			Parameter 634
	Software part No.			Parameter 635

Technical functions

Changes in parameters can be made via the control panels LCP2, PC or Profibus. For a detailed description, see Design Guide PH 15498.