

4 ECODRIVE DKC Drives

4.1 Hardware

Dimensional sheet and installation dimensions

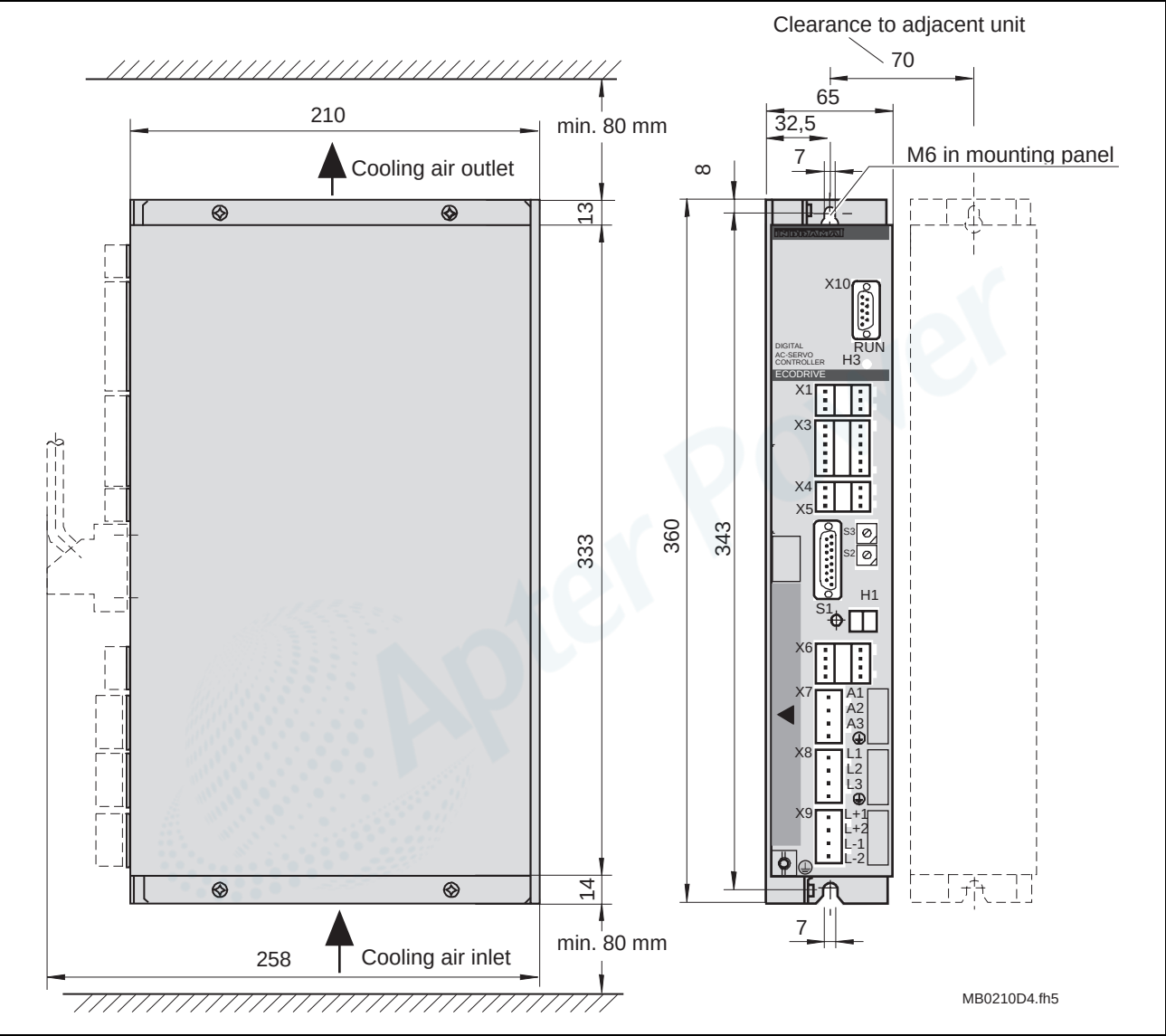


Fig. 4-1: Dimensional sheet and installation dimensions DKC03.1

Technical specifications

Mains supply / Power section

Designation	Symbol	Unit	DKC03.1-040-7-FW
Operating mode at the mains			three-phase
Mains input voltage	U_N	V	3 x AC (380 ... 480) $\pm$ 10%
Maximum conn. voltage	S_{MAX}	kVA	4,8 ... 9
Making current	I_{EIN}	A	9 ... 12
Mains frequency	f_N	Hz	50...60
Switching frequency (selectable)	f_S	kHz	4 or 8
Continuous current at $f_S = 4$ kHz ¹⁾	I_{CONT}	A	16
Continuous current at $f_S = 8$ kHz ¹⁾	I_{CONT}	A	12,5
Rated current	I_{TYP}	A	40
Peak current	I_{PEAK}	A	40
Power dissipation, without bleeder dissipation	P_V	W	180
Peak bleeder output DKC	$P_{BM,DKC}$	kW	10 (Permissible load cycle equals 0.5 sec. on, 33 sec. off.)
Continuous bleeder output DKC	$P_{BD,DKC}$	kW	0,15
Maximum feedback energy DKC	$W_{MAX,DKC}$	kWs	5,0
Storage energy DKC	$W_{ZW,DKC}$	Ws	15
DC bus capacitance	C_{DKC}	mF	0,15
DC bus voltage ²⁾	U_{ZW}	V	DC 500...800

1) The drive data for 4 and 8 kHz switching. frequencies are listed in the document "ECODRIVE DKC servo drive" - Selection Data.
2) Value dependent on power input voltage

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Fig. 4-2: Technical specifications - mains supply and power section

DC24V Power supply

Designation	Symbol	Unit	DKC03.1-040-7-FW
Control voltage connection for DKC			
Input voltage	$U_{N,DC}$	V	DC (19,2 ... 28,8) V
Maximum ripple content	w	%	must not exceed the input voltage range
Current consumption	$I_{N,DC}$	A	0,7
Voltage connection for holding brake			
Input voltage	$U_{N,HB}$	V	DC (21,6 ... 26,4) V
Maximum ripple content	w	%	must not exceed the input voltage range
Current consumption	$I_{N,HB}$	A	please see MKD documentation

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Fig. 4-3: Technical specifications DC24V power supply

Additional connection of the DC24 power supply

The DKC drives should be firmly connected to the DC24V power supply; preferred method Fig. 4-4
 They can also be connected to the DC24V power supply in a switchable manner Fig. 4-5

Preferred method:
 The power supply is firmly
 connected to the attached DKC

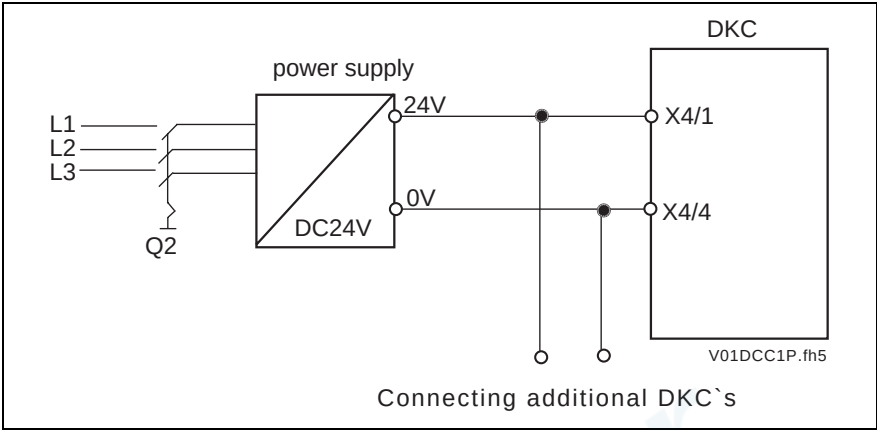


Fig. 4-4: Principle for connecting the DC24V control voltage by switching on the power supply via Q2, **preferred method**

The power supply is connected
 to the attached DKC in a
switchable manner

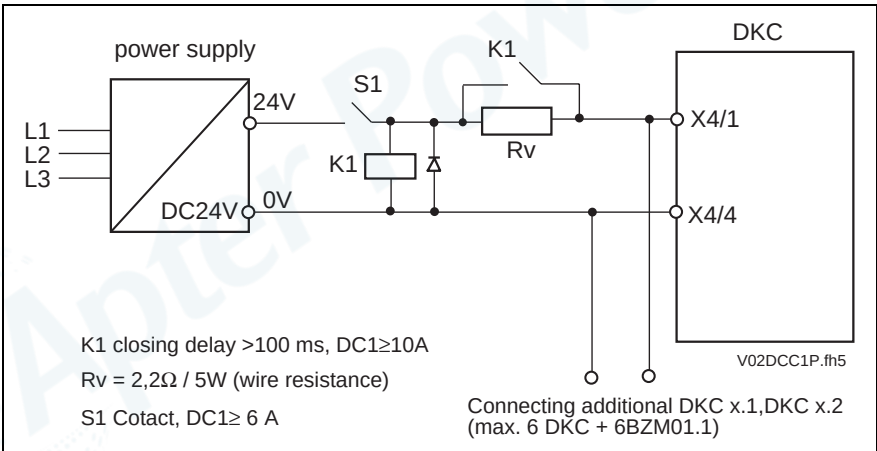


Fig. 4-5: Principle for connection the 24V via S1 with a starting current limiter

Ambient and application conditions

Ambient temperature and installation altitude

Selection data are specified for each motor/drive documentation. Please refer to the documentation "ECODRIVE Servo Drive DKC with MKD - Selection Data -

The selection data apply within the given ambient and applications conditions (see Fig. 4-7).

For different conditions, the short-term operating torque M_{KB} is diminished according to the diagrams (see Fig. 4-6). If ambient temperatures and higher installation altitudes deviate simultaneously, both load factors must be multiplied.

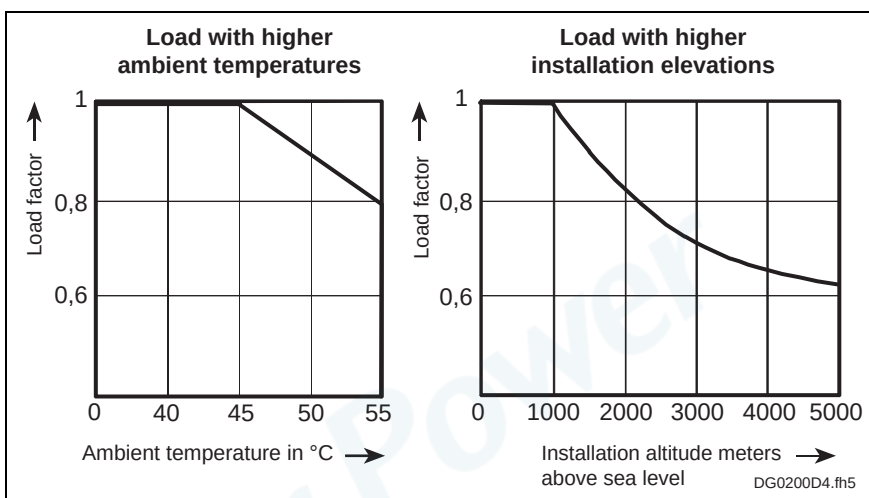


Fig. 4-6: Load utilisation dependent on ambient temperature and installation altitude

Designation	Symbol	Unit	DKC03.1-040-7-FW
Ambient and installation conditions			
Cooling the power section			internal blower cooling
Permissible ambient temperature with nominal data	T_{UM}	°C	+0...+45
Max. permissible ambient temperature with reduced nominal data	$T_{UM,MAX}$	°C	+55 The values indicated in the selection data for M_{DN} and M_{KB} , drop in the range of +45 to +55°C by 2% per °C of rise in temperature.
Storage and transport temperature	T_L	°C	-30...+85
Max. installation elevation with nominal data		m	1000
Max. permissible relative humidity		%	95
Max. permissible absolute humidity		g/m ³	25
Degree of contamination			Non-conductive dirt contamination, no condensation
Protection category			IP20, as per EN 60529 = DIN VDE 0470-1-1992 (IEC 529-1989) stationary use in control cabinets
Weight	m	kg	4.4

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Fig. 4-7: Ambient and application conditions

Type code and rating plate

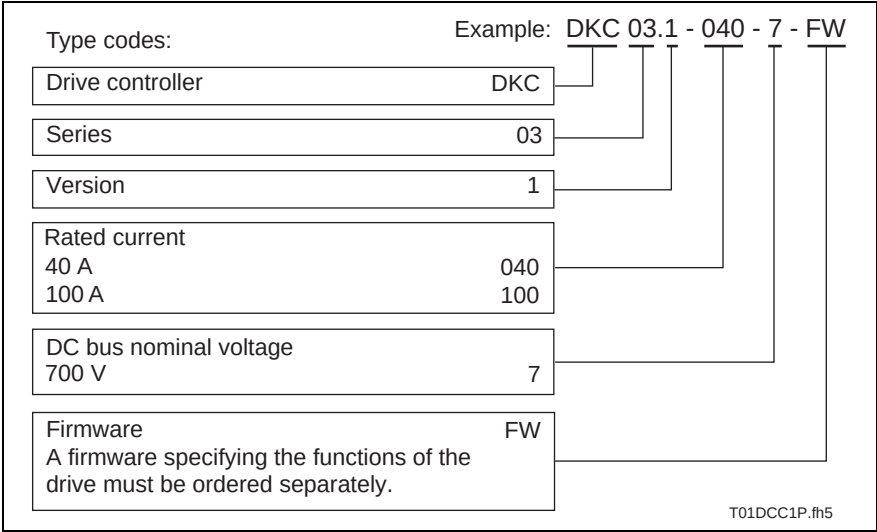


Fig. 4-8: Type code DKC

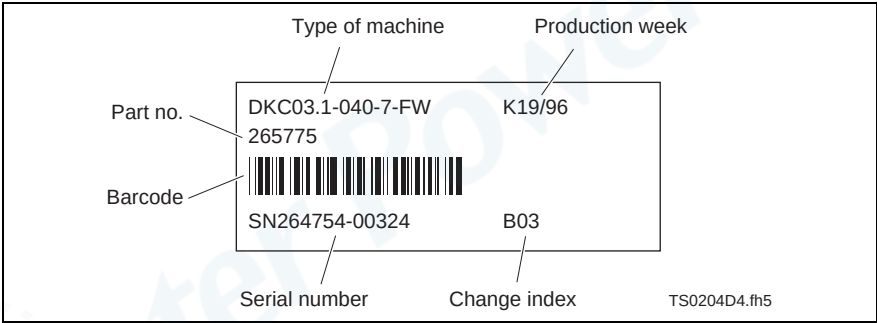


Fig. 4-9: Rating plate DKC

4.2 Firmware

The firmware integral to the drive controller determines the functional features of the ECODRIVE drive controller.

Firmware "FWA-ECODRV-PDP-03VRS-MS" is available for the DKC03.1-***.

The firmware has its own order number. This means that it is always possible to order the identical firmware version.

The firmware is continuously updated to eliminate any possible errors without altering the functionality. It is identified in the type code as the firmware release version.

If newer functions are added, then the index of the firmware version is incremented (see type codes).

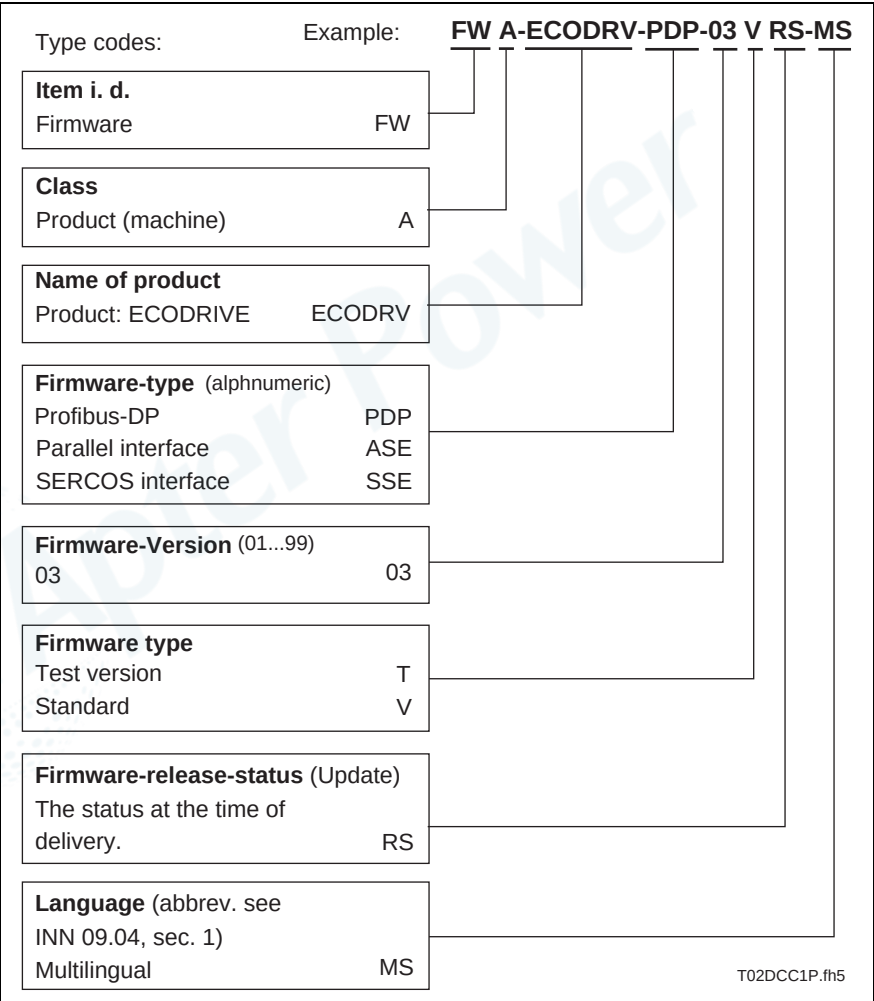


Fig. 4-10: Type code firmware ECODRIVE

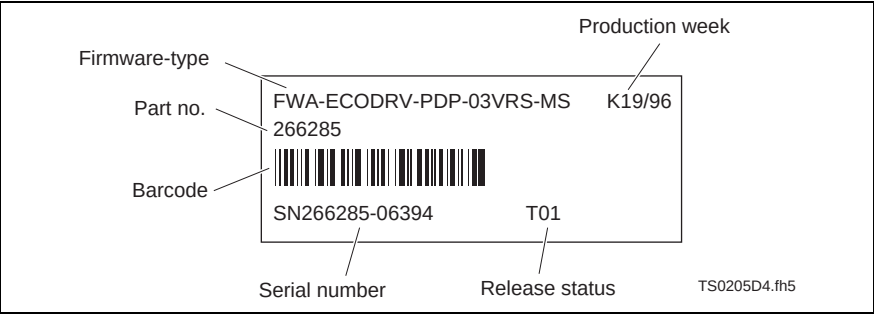


Fig. 4-11: Rating plate firmware