455 965

Lenze

Electronic DC Drives

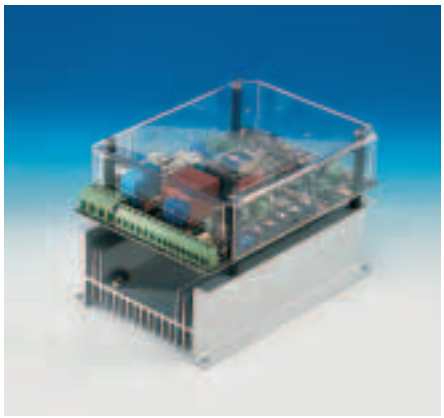
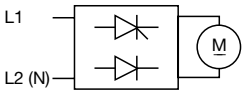
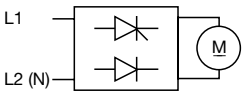
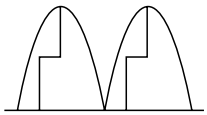
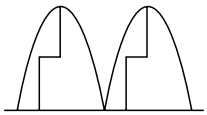
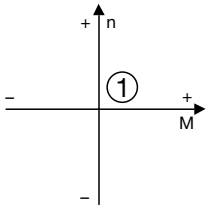
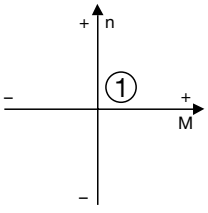
Electronic DC drives for all applications

Electronically controlled drives have a simple control structure and feature excellent control characteristics, for speed as well as for torque controls.
This results in high speed setting ranges and good response with excellent smooth running of the motor shaft. Our four-quadrant controllers are equipped with integrated mains feedback in the generator mode. These advantages make electronic DC drives universal controllers for almost every application.

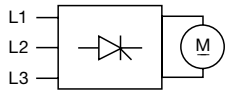
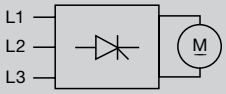
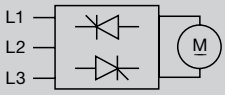
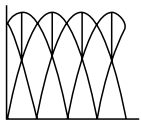
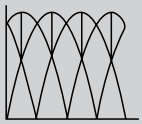
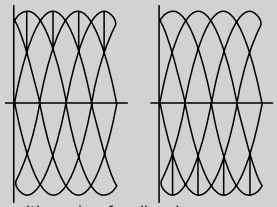
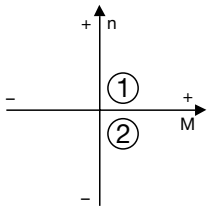
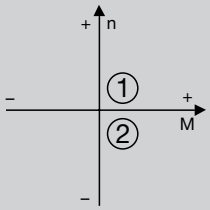
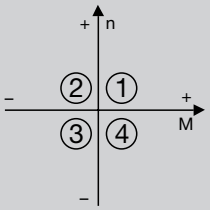
Long brush lives are ensured by important improvements of the commutator and the carbon brushes.
The following table of the most important applications show the universal use of our DC drives.
Further information about controllers and motors can be obtained from the individual product documentation.

Applications	**Controller type**				
	530	470	480	4800	4900
Muli-motor systems	–	•	•	•	•
Extruders, calender and follow-on plants	–	•	•	•	•
Coating plants	–	•	•	•	•
Film production	–	•	•	•	•
Winder drives	–	•	•	•	•
Metal band plants	–	–	•	•	•
Embossing plants	–	–	•	•	•
Material accumulators	–	–	–	–	•
Printing machines	–	–	•	•	•
Wire drawing plants	–	–	•	•	•
Cable twisting plants	–	–	•	•	•
Paper machines	–	–	•	•	•
Cross cutters	–	–	–	–	•
Positioning drives	–	–	–	–	•
Lift and traction drives	–	–	–	–	•
Packaging machines	•	•	–	–	•
Excenter drives	–	–	–	–	•
Conveyors (Belts, rolls etc.)	•	•	•	•	–
Auxiliary drives for multi-motor systems	•	•	•	•	•
Pumps, air conditioning	•	•	•	•	–
Precision grinding machines	–	–	–	–	•
Test stands	–	–	•	•	•
Small heating and power stations	–	–	•	•	•
Textile processing plants	–	•	•	•	•

Technical data

				
Controller series			530	470
Analog / digital controllers			analog	analog
Electrical output data		Power[1] [kW]	0.4–2.2	1.3–7.0
		Voltage[1] [V]	190 / 180	170 / 270
		Current [A]	2–12	8–27
Mains supply 50–60 Hz [V], e = single-phase; z = two-phase; d = threephase			190–265 ± 0 %, e	190–265 ± 0 %, e 340–460 ± 0 %, z
Power stage				
Output voltage waveform				
Operating quadrant M n M ① / ③ motor mode ② / ④ generator mode				
Control range (guidelines)	Speed	I x R = Armature voltage feedback	1–20	1–20
		T = Analog tacho	1–100	1–100
		R/E = Resolver / Encoder	–	–
	Torque		–	1–20

[1] related to mains voltage 230 V or 400 V AC
[2] different connecting voltages such as 3 x (220, 440, 460, 500 V) available on request
[3] discontinued types

		
480 analog	4800 [3] digital	4900 [3] digital
10–115	150–460	7–420
460	460	420
23–250	330–1200	16–1200
360–460±0%, d [2]	340–460±0%, d [2]	340–460±0%, d [2]
		
		 with mains feedback
		
1–20	1–20	1–20
1–100	1–200	1–200
–	1–750/1500	1–1000/2000
1–200	1–250	1–300

Options

The base controllers are equipped with the most important standard functions. For an optimum adaptation of the drive to the individual application, a number of option modules are available. Extending functions is no problem at all.

The option modules for the digital controllers of the 4800/4900 series can be integrated into the field bus network.
The combination of option modules and the different controller series is shown below.

Functions

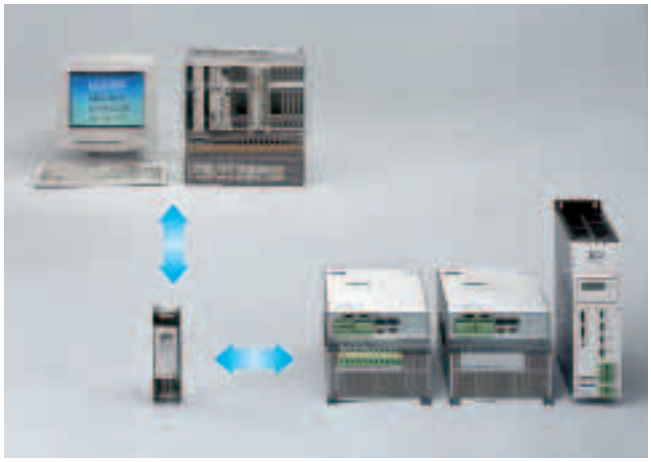
	Analog devices					Digital devices					
									Automation		
Module	1071	2002	2003	2051	BY100 2052	BY150 BY200	2101 IB	212x	221x [4]	2210 BP	21xx IB
Internal	•		•	•	•						•
External		•				•	•	•	•	•	•
Winding calculator	•								•	•	
PID controller, dancer, tension controller etc.		•			•				•	•	
Reference integrator (standard for 4800/4900/530)		•	•		•						
Impedance transformer		•			•						
Remonte display via RS 232											
Remonte display and operation via RS 232											
Extended speed setting range				•							
Digital speed matching						•					
Digital angular synchronisation						•					
Converter RS 232 / RS 485 (bus operation)							•				
Optical fiber interface (bus operation)								•			
Position control									•	•	
Extension of input / output level of automation module										•	
Field bus connections [5]											•
Used in controller type											
530		(•)									
470	•	•	•			•					
480	•	•	•	•	•	•					
4800	(•)	•					•	•	•		•
4900	(•)	•					•	•	•	•	•

[4] The automation program can be used for the functions:
- winding calculator,
- Position controller (possible with 2nd generation of 4800/4900)

(•) no standard combination
• standard combination
[5] InterBus / ProfiBus / II-0 Light Bus

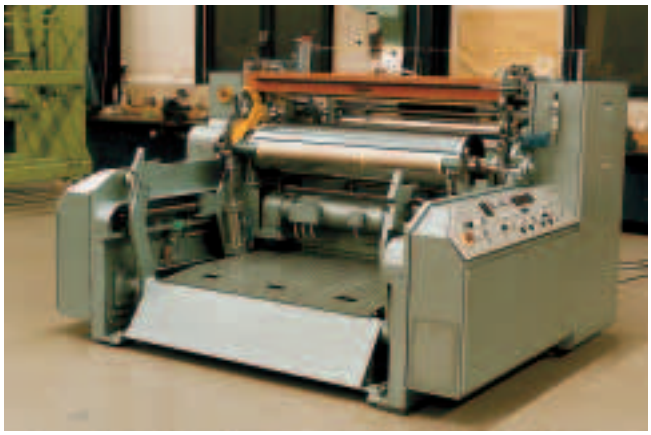
Field bus network

The digital controllers of the 4800/4900 series do not only offer the classic method to control drives via parallel commands and analog signals, but can also be operated with digital data exchange.
From the first stage of simple point-to-point connection between host and drives, complex field bus systems with realtime transfer have resulted.
Data for these field bus systems are exchanged via cable or optical fibres.
The figure shows a real-time Interbus-S-connection with control via PLC.



Applications

The figures show three classic applications for controlled DC drives where typical features of DC technology are used:
- simple access to torque control
- simple mains feedback in generator mode
- large speed setting range with optimum smooth running
- compact, well-priced design
- quick availability



Surface winding

Coating

Calender

Lenze

Introduction of Lenze

No matter which drive solution you imagine, we make your dreams come true.

According to our maxim “one stop shopping” we offer you a complete programme of electronic and mechanical drive systems which are distinguished by reliability and efficiency.
Our supply range includes frequency inverters, speed controllers, variable speed drives, gearboxes and motors as well as clutches and brakes.
Lenze is thus the competent partner for your application – not only as supplier for single components but also for complete drive systems including planning, execution and commissioning.
Furthermore, a world-wide service and distribution network allows a qualified customer advisory service on site and a fast and extensive after sales service.
Our quality assurance system for development, production, sales and service is certified to DIN ISO 9001 and ISO 14001.
Our customers set the scale for measuring the quality of our products.
Our task is to meet your requirements. Customer orientation as a Lenze principle means the highest quality.

See for yourself.