

AC DRIVES  
**FDD 3000**



## AC DRIVES

# FDD 3000

With the AC drives of the FDD 3000 series, you solve all drive tasks in low-voltage applications flexibly and economically. Asynchronous motors can be precisely and reliably controlled with the compact FDD 3000 AC drives. The seamless integration into the SIGMATEK automation system simplifies engineering and maintenance.



## EFFICIENT AND RELIABLE

Through the combination of compactness, performance and functionality, you can optimize your drive concept and therewith, your production process using the FDD 3000 series. The AC drives cover a power range of 0.37 to 90 kW and are available in seven sizes.

With the low-voltage drives, asynchronous motors (IE2, IE3) can be controlled precisely and reliably. Thanks to an overload capacity of up to 180 %, the FDD 3000 units are ideal for applications that require a high torque for short time.

# FDD 3000 AT A GLANCE



## PRECISE MOTOR CONTROL

- Dynamic V/f regulation
- Open Loop: 8 different modes
- Heavy Duty and Normal Duty
- Motor switchover «on the fly»

## QUICK START

- Comfortable configuration in the all-in-one engineering tool LASAL
- LED operating unit for manual setup

## FULLY INTEGRATED COMMUNICATION

- Simple handling via seamless integration into the SIGMATEK automation system
- Various interfaces for simple connection

## ROBUST AND RELIABLE CONSTRUCTION

- Layered circuit boards despite harsh environmental conditions
- High overload capacity: 180 % overload for 3 s / 150 % overload for 60 s
- Reliable cooling via forced convection with internal fans

## SAFETY AND I/Os INTEGRATED

- 2 STO inputs (SIL 3/PL e)
- 2 analog inputs
- 1 analog output
- 3 digital inputs
- 1 digital in-/output (configurable)
- 1 relay output (brake control)

## POWER FILTER ON BOARD

Deactivatable EMC filter industrial class A integrated, power filters for class B are optionally available

## FOR HARSH ENVIRONMENTS

- Operating temperature -20 °C to 40 °C at 3 kHz switching frequency or with derating, up to 60 °C in sizes 2-4 and up to 55 °C in sizes 5-8
- Humidity 95 % non-condensing

## THE RIGHT CHOICE FOR MANY APPLICATIONS

It is impossible to imagine industrial production without economical AC drives. Continuous speed control, adapted to the application, enables an optimized manufacturing process – with the

additional advantage of energy-saving operation. Thanks to the broad performance range from 0.37 to 90 kW, the FDD 3000 are the right choice for various applications:



- Pumps, fans and compressors
- Conveyor technology
- Lifting equipment and winches
- Process technology: mixers, kneaders, crushers, agitators, centrifuges, extruders
- Sorting systems and packaging technology

For lifting applications, an adjustable control for mechanical braking systems is available.



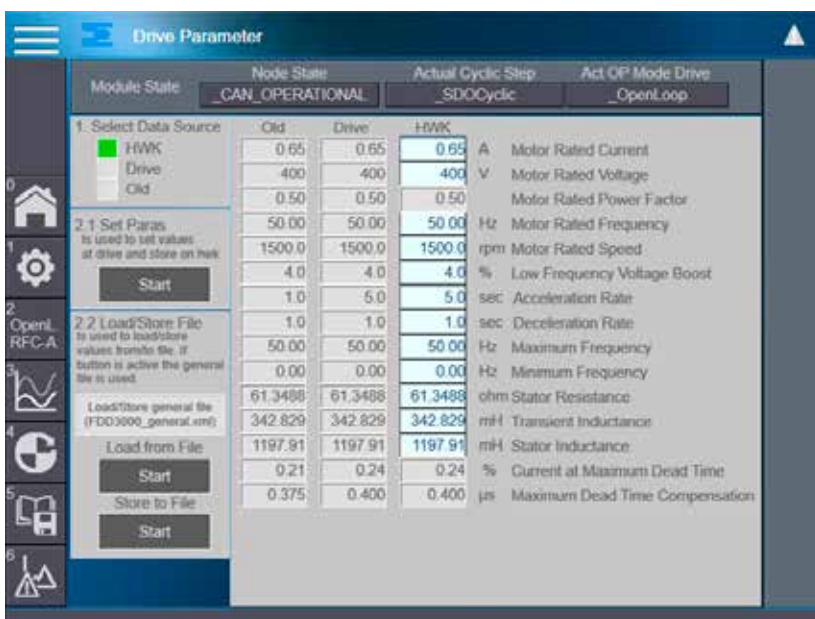
▶ The FDD AC drives significantly improve the productivity and performance of your machines and systems.

## SIMPLE INITIAL STARTUP WITH AUTOTUNE

The FDD 3000 AC drives can be easily and comfortably configured in the all-in-one design environment LASAL. In the “Visual

Object View” (VOV), the parameters can be entered clearly. You can define the AC drive parameters offline and then over an

online connection, test and operate it. An autotune function is also available. Motion commands can be conveniently sent from the control system to the FDD 3000 AC drives. Since all parameters and configuration data are stored centrally in the controller, even replacing an AC drive is very simple via Plug&Play.



▶ In LASAL’s graphic interface, just set the most important parameters and you are ready to go: Thanks to the integration into the SIGMATEK control system, handling is extremely comfortable.



FDD 3000

# FEATURES THAT CONVINC

## Robust and Efficient

The high-performance AC drives convince with perfect speed and torque control of AC motors, as well as the highest reliability – even in harsh environmental conditions. The standard coating provides even more protection from adverse environmental influences. Power-failure bridging keeps the drive in operation even during a power failure.

## STO to PL e Integrated

Functional Safety is an integral part of the FDD 3000 range: A two-channel STO (Safe Torque Off) ensures a safe shutdown according to EN/IEC 61800-5-2 SIL 3 and EN ISO 13849-1 PL e. The safe inputs can also be used to implement an emergency stop function without protection.

## Quick Start

The FDD 3000 drives are fully integrated into the SIGMATEK control system and the all-in-one engineering platform LASAL. This reduces the initial start-up, configuration and Safety integration enormously. The integrated autotune function is started via the graphic interface. This means that the FDD 3000 can be perfectly matched to a wide variety of motors – Plug&Play.

## Handling - Even Wireless or Remote

Setup and maintenance of the FDD 3000 AC drives can even be performed wirelessly, combined with a SIGMATEK controller and the optional Wifi adapter. In addition, the devices can be conveniently serviced remotely via the remote access platform – whether initial start-up, diagnostics, maintenance and updates.

## Flexible Connectivity

Various communication interfaces enable flexible integration of the AC drives into industrial networks: CAN, VARAN and EtherCAT.

## Space- and Energy-saving

The compact design and efficient heat regulation allow the space-saving installation of several modules in the control cabinet. Through exact speed control, dynamic V/f regulation and standby mode, the energy consumption is reduced, productivity maximized and at the same time, operating costs are lowered.



# FDD 3000 SPECIFICATIONS

Frame Size (=FSZ)	Dimensions W x H x D (mm)	Weight (kg)
2	75 x 205 x 150	1.3
3	90 x 226 x 160	1.5
4	115 x 277 x 175	3.13
5	143 x 391 x 200	7.4
6	210 x 391 x 227	14
7	270 x 557 x 280	28
8	310 x 804 x 290	52



## MOUNTING

- Screw-mounting on mounting plate: standard (IP20)
- DIN rail mounting: for FSZ 2 (IP20)
- Push-through mounting: for FSZ 5-8 (IP54)

## TECHNICAL DATA

- Approval: UL, CE, TÜV
- Integrated brake chopper, integrated EMC filter (easily removable), DC bus connection available
- Clock frequency
  - FSZ 2-4: 0.667 | 1 | 2 | 3 | 4 | 6 | 8 | 12 | 16 kHz
  - FSZ 5-8: 2 | 3 | 4 | 6 | 8 | 12 | 16 kHz
- Output frequency range 0 to 550 Hz
- Frequency precision  $\pm 0.02\%$  full range
- Frequency resolution 0.01 Hz
- FSZ 2-4: AC supply 1- and 3-phase 200-240 VAC  $\pm 10\%$ , input frequency 45-66 Hz
- FSZ 2-8: AC supply 3-phase 380-480 VAC  $\pm 10\%$ , input frequency 45-66 Hz
- Current controller cycle time 166  $\mu$ s




## 200-240 VAC $\pm 10\%$

Article Number	Frame Size	Power Supply	Overload Application (Heavy Duty) 180 %			Normal Load Application (Normal Duty) 110 %		
			Max. Continuous Current (A)	Motor Output (kW)	Motor Output (HP)	Max. Continuous Current (A)	Motor Output (kW)	Motor Output (HP)
FDD 3022.00024	2	1- and 3-phase	2.4	0.37	0.5	For Normal Load applications, use Overload application ratings.		
FDD 3022.00033	2		3.3	0.55	0.75			
FDD 3022.00042	2		4.2	0.75	1			
FDD 3022.00056	2		5.6	1.1	1.5			
FDD 3022.00075	2		7.5	1.5	2			
FDD 3032.00100	3		10	2.2	3			
FDD 3042.00133	4		13.3	3	3			
FDD 3042.00176	4	3-phase	17.6	4	5			

# 380-480 VAC +/-10 %

Article Number	Frame Size	Power Supply	Overload Application (Heavy Duty) 180 %			Normal Load Application (Normal Duty) 110 %		
			Max. Continuous Current (A)	Motor Output (kW)	Motor Output (HP)	Max. Continuous Current (A)	Motor Output (kW)	Motor Output (HP)
FDD 3024.00013	2	3-phase	1.3	0.37	0.5	For Normal Load applications, use Overload application ratings.		
FDD 3024.00018	2		1.8	0.55	0.75			
FDD 3024.00023	2		2.3	0.75	1			
FDD 3024.00032	2		3.2	1.1	1.5			
FDD 3024.00041	2		4.1	1.5	2			
FDD 3034.00056	3		5.6	2.2	3			
FDD 3034.00073	3		7.3	3	3			
FDD 3034.00094	3		9.4	4	5			
FDD 3044.00135	4		13.5	5.5	7.5			
FDD 3044.00170	4		17	7.5	10			
FDD 3054.00270	5		27	11	20	31	15	20
FDD 3054.00300	5		30	15	20	30	15	20
FDD 3064.00350	6		35	15	25	38	18.5	25
FDD 3064.00420	6		42	18.5	30	48	22	30
FDD 3064.00470	6		47	22	30	63	30	40
FDD 3074.00660	7		66	30	50	79	37	60
FDD 3074.00770	7		77	37	60	94	45	60
FDD 3074.01000	7		100	45	75	112	55	75
FDD 3084.01340	8		134	55	100	155	75	100
FDD 3084.01570	8		157	75	125	184	90	125

## COMMUNICATION INTERFACES

			
	<b>SI-CANopen</b>	<b>SI-EtherCAT</b>	<b>SI-VARAN</b>
<b>Article Number</b>	09-920-001	09-920-002	09-920-003
<b>Interfaces</b>	1x CAN	1x EtherCAT-In, 1x EtherCAT-Out	1x VARAN-In, 1x VARAN-Out

## INTERNATIONAL



### AUSTRIA – CORPORATE HEADQUARTERS

SIGMATEK GmbH & Co KG  
5112 Lamprechtshausen  
Sigmatekstraße 1  
Tel. +43 6274 43 21-0  
Fax +43 6274 43 21-18  
www.sigmatek-automation.com  
office@sigmatek.at



### CHINA

SIGMATEK Automation CO., Ltd  
315040 Ningbo · Room 15A03,  
Building A, No. 555, Jingjia Road  
Tel. +86 574 87 75 30 85  
Fax +86 574 87 75 30 85  
www.sigmatek-automation.cn  
office@sigmatek-automation.cn



### GERMANY

SIGMATEK GMBH  
76829 Landau  
Marie-Curie-Straße 9  
Tel. +49 6341 94 21-0  
Fax +49 6341 94 21-21  
www.sigmatek-automation.com  
office@sigmatek.de



### GREAT BRITAIN

SIGMATEK Automation UK Limited  
Leamington Spa, CV32 6JX  
Gables House, 62 Kenilworth Road  
Tel. +44 115 922 24 33  
www.sigmatek-automation.co.uk  
office@sigmatek-automation.co.uk



### SWITZERLAND

SIGMATEK Schweiz AG  
8308 Illnau-Effretikon  
Schmittestrasse 9  
Tel. +41 52 354 50 50  
Fax +41 52 354 50 51  
www.sigmatek-automation.ch  
office@sigmatek.ch



### USA

SIGMATEK U.S. Automation, Inc.  
44133 North Royalton, Ohio  
10147 Royalton Rd., Suite N.  
Tel. +1 440 582 12 66  
Fax +1 440 582 14 76  
www.sigmatek-automation.us  
office@sigmatek.us



### BELGIUM

SigmaControl B.V.  
2992 LC Barendrecht  
Tel. +32 329 770 07  
www.sigmacontrol.eu  
office@sigmacontrol.eu



### FINLAND

SARLIN Oy Ab  
01610 Vantaa  
Tel. +358 105 50 40 00  
www.sarlin.com  
asiakaspalvelu@sarlin.com



### ITALY

SIGMA MOTION SRL  
36075 Montecchio Maggiore (VI)  
Tel. +39 0444 60 75 75  
www.sigmamotion.it  
info@sigmamotion.it



### JAPAN

SUMITOMO HEAVY INDUSTRIES, LTD.  
Mechatronics Division  
141-6025 Tokyo  
Tel. +81 3 67 37 25 32  
www.shi-mechatronics.jp  
ryuji.nakajima@shi-g.com



### KOREA

Servostar CO., Ltd  
14988 Siheung-si · Gyeonggi-do  
#501, 168-28, Mokgamdulle-ro  
Tel. +82 31 486 87 87  
Fax +82 31 486 88 84  
servo@servostar.co.kr  
www.servostar.co.kr



### NETHERLANDS

SigmaControl B.V.  
2992 LC Barendrecht  
Tel. +31 180 69 57 77  
www.sigmacontrol.eu  
office@sigmacontrol.eu



### PORTUGAL

Plasdan Automation & Add-On Systems  
2430-379 Marinha Grande  
Tel. +351 244 57 21 10  
www.plasdan.pt  
info@plasdan.pt



### SWEDEN

SIGBI Automation AB  
254 64 Helsingborg  
Tel. +46 42 654 00  
www.sigmatek.se  
info@sigmatek.se



### SOUTH AFRICA

Anytech (PTY) Ltd.  
2169  
Tel. +27 11 708 19 92  
www.anytech.co.za  
info@anytech.co.za



### THAILAND

SCMA CO., LTD.  
69/494 Moo 1 Tiwanon Road  
Banmei, Pakkret, 11120 Nonthaburi  
Tel. +66 2 615 48 88  
www.scma.co.th  
contact@scma.co.th



### TURKEY

Dedem Mekatronik  
35477 Menderes – İzmir  
Tel. +90 232 47 21 848  
www.dedemmekatronik.com  
satis@dedemmekatronik.com