The MDD 2000 servo drives are designed for dynamic multi-axis applications. They provide the highest power density: on a 75 mm width, 240 mm height and 219 mm depth, up to 3 axes, a supply, power filter, brake resistor and DC-Link circuit are housed. In addition to high precision, the drives convince with single-cable technology, numerous Safety functions and simple handling.

The MDD 2000 series is modularly designed: Supply/axis combination modules (MDP) with 1, 2 or 3 integrated axes in different sizes or power classes can be used as stand-alone compact drives or combined with any number of axis expansion modules (MDD) into a multi-axis network.

Flexible Complete System
Power filter, brake resistor and numerous Safety functions are integrated into the drive. The flexible servo system is operated in single or three phase with 200/240 V AC or 380/480 V AC. They are assembled modularly in a toolkit system with clever connection technology. With DCB “DC Connection Block” and BCB “Bus Connection Block”, all modules can be quickly connected – complex separate wiring for current, DC-Link coupling and real-time Ethernet with VARAN bus communication is eliminated.

High Performance in Three Sizes
Two sizes are available for introduction to the market. Size 1 “MDD 2100” measures only 75 x 240 x 219 mm (WxHxD) and provides a connected load of up to 4 kW per combined supply/axis module. Currently, it is available with 3x 5 A of rated current and a 15 A peak current. The height and depth of the modules are identical in all sizes, only the width varies. With 150 mm, the supply/axis module in size 2 “MDD 2200” is twice as wide and has a connected load of 8 kW. For the market launch, the 3-axis module is available with 3x 10 rated current and 30 peak current. Size 3 follows as “MDD 2300” with a connected load of 18 kW. The first module to be available will be a combined supply/axis module with 1x 30 A rated and 90 A peak current. All series provide an overload factor of up to 300 percent.

Less Wiring
The MDD 2000 system is delivered as standard with a digital Hiperface DSL motor feedback interface. The single-cable solution for power and feedback signals reduces the amount of cabling and saves time. An optional universal interface for various encoder types is possible: Resolver, EnDat...
2.1. Hiperface, Sin/Cos, TTL, BiSS-C, San- yoDenki or Tamagawa.

**High Servo Performance**
The position settings are made in the control and then sent to the drive via the real-time bus system VARAN. Through short controller cycle times of 62.5 µs and with a jitter of less than 1 µs, the MDD 2000 DIAS Drives are ideally suited for fast and high-precision positioning tasks.

**Quick Start: Autotuning**
The integrated autotuning function simplifies the initial start-up. Just a few parameters such as rated current, maximum current and permitted process space are enough to run the motor autotuning.

<table>
<thead>
<tr>
<th>Frame size</th>
<th>Output per combined supply/axis module MDP</th>
<th>Rated/peak current per axis</th>
<th>Dimensions in mm (W x H x D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size 1: MDP- and MDD-Modules 2100*</td>
<td>4 kW</td>
<td>3x 5 A / 15 A</td>
<td>75 x 240 x 219</td>
</tr>
<tr>
<td>Size 2: MDP- and MDD-Modules 2200*</td>
<td>8 kW</td>
<td>3x 10 A / 30 A</td>
<td>150 x 240 x 219</td>
</tr>
<tr>
<td>Size 3: MDP- and MDD-Module 2300*</td>
<td>18 kW</td>
<td>1x 30 A / 90 A</td>
<td>225 x 240 x 219</td>
</tr>
</tbody>
</table>

* Planned availability Q2 or size 3 Q3/2021, subject to technical changes.
With the new AC drives of the FDD 3000 series, you efficiently solve all drive tasks in low-voltage applications. Economic asynchronous motors can be precisely controlled with the AC drives. Optimize the power of your motion applications and save energy at the same time.

For any application, the FDD series provides the ideal solution. These compact units are available in eight sizes. The 1- or 3-phase AC drives (200/240 V AC or 380/480 V AC) cover a power range of 0.37 to 132 kW and are designed for high load operation or normal load applications. They are the right choice for motion applications that should be realized cost-effectively.

**Efficiently in Use**

With exact speed control, energy-efficient operation of your application can be achieved. Functions such as dynamic V/f control or standby mode also minimize energy consumption, and help reduce your operating costs. With an overload capacity from up to 180 percent the FDD 3000 units are ideal for applications that require a high torque for short time.

**Safe and Communicative**

Two Safety STO inputs (SIL 3/PL e) ensure a safe stop. In addition, 3 digital inputs and 1 digital in-/output, as well as a relay output for the brake control are integrated. Communication with the control is implemented via CANopen, EtherCAT or VARAN* interfaces. Parameters and motion commands can be comfortably sent from the control to the AC drive - complex parameterization with an input device is unnecessary.

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### AC DRIVES FDD 3000
**EFFICIENT AND RELIABLE**

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<table>
<thead>
<tr>
<th>Size</th>
<th>Input Phases</th>
<th>Supply Voltage</th>
<th>Heavy Duty Motor Output (kW)</th>
<th>Normal Duty Motor Output (kW)</th>
<th>Dimensions in mm (W / H / D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1- or 3-phase</td>
<td>200/240 V AC</td>
<td>0.37 - 1.5 kW</td>
<td></td>
<td>75 x 205 x 150 mm</td>
</tr>
<tr>
<td></td>
<td>3-phase</td>
<td>380/480 V AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1- or 3-phase</td>
<td>200/240 V AC</td>
<td>2.2 kW</td>
<td></td>
<td>90 x 226 x 160 mm</td>
</tr>
<tr>
<td></td>
<td>3-phase</td>
<td>380/480 V AC</td>
<td>2.2 - 4 kW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1- or 3-phase</td>
<td>200/240 V AC</td>
<td>3 - 4 kW</td>
<td></td>
<td>115 x 277 x 175 mm</td>
</tr>
<tr>
<td></td>
<td>3-phase</td>
<td>380/480 V AC</td>
<td>5.5 - 7.5 kW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3-phase</td>
<td>200/240 V AC</td>
<td>5.5 kW</td>
<td>7.5 kW</td>
<td>143 x 391 x 200 mm</td>
</tr>
<tr>
<td></td>
<td>3-phase</td>
<td>380/480 V AC</td>
<td>11 - 15 kW</td>
<td>15 kW</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3-phase</td>
<td>200/240 V AC</td>
<td>7.5 - 11 kW</td>
<td>11 - 15 kW</td>
<td>210 x 391 x 227 mm</td>
</tr>
<tr>
<td></td>
<td>3-phase</td>
<td>380/480 V AC</td>
<td>15 - 22 kW</td>
<td>18.5 - 30 kW</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>3-phase</td>
<td>200/240 V AC</td>
<td>15 - 22 kW</td>
<td>18.5 - 30 kW</td>
<td>270 x 557 x 280 mm</td>
</tr>
<tr>
<td></td>
<td>3-phase</td>
<td>380/480 V AC</td>
<td>30 - 45 kW</td>
<td>37 - 55 kW</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3-phase</td>
<td>200/240 V AC</td>
<td>30 - 37 kW</td>
<td>37 - 45 kW</td>
<td>310 x 804 x 290 mm</td>
</tr>
<tr>
<td></td>
<td>3-phase</td>
<td>380/480 V AC</td>
<td>55 - 75 kW</td>
<td>75 - 90 kW</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>3-phase</td>
<td>200/240 V AC</td>
<td>45 - 55 kW</td>
<td>55 - 75 kW</td>
<td>310 x 1108 x 290 mm</td>
</tr>
<tr>
<td></td>
<td>3-phase</td>
<td>380/480 V AC</td>
<td>90 - 110 kW</td>
<td>110 - 132 kW</td>
<td></td>
</tr>
</tbody>
</table>

*Planned availability Q2/2021, subject to technical changes.
S-DIAS: MEETS ANY NEED
SUPER COMPACT, SAFE AND VERSATILE

The modular S-DIAS control and I/O system is the right choice for flexible automation solutions in pocket format. Whether high-precision measuring technology, Safety or CPU power – the DIN rail series provides unlimited module diversity.

**Safety Relay Output: SRO 022**
With the SRO 022, higher voltages up to 230 V/6 A can now be switched safely.
- 2 safe outputs
  - (max. +30 V DC/6 A)
  - Normally open (NO)
  - Up to SIL 3/PL e, Cat. 4

**Safety Analog Input: SAI 041***
The safe analog input module SAI 041 for measuring current.
- 4 analog inputs (4-20 mA)
- 16 bits, 1 ms
- Up to SIL 3/PL e, Cat. 4

**Exact Temperature Measurement: AI 023**
For 4-wire temperature measurements, the AI 023 analog input module is available.
- 2 analog inputs (16-bit)
- Measurement ranges of 0-5000 Ω
- For resistance or temperature

**Safety CPU: SCP 211***
High-performance Safety controller for controlling Safety-oriented I/O modules.
- 2 MB Flash, 512 kB RAM
- 1x USB Device
- Up to SIL 3/PL e, Cat. 4

**Powerful: CP 733**
The CP 733 CPU unit has an Intel® Atom™ dual-core processor.
- 2x 1.75 GHz
- 1x Ethernet, 1x EtherCAT Drive Controller
- 2x VARAN Out, 1x CAN, 2x USB
- microSD card

* Planned availability Q2/2021, subject to technical changes.
With the web-based LASAL VISUDesigner, modern platform-independent HTML5 visualizations can be created quickly and comfortably. New features provide even more comfort and options for customization.

An extensive library of operating elements supports you in implementing your visualization. Open source controls provide freedom to individualize. New functions in the HMI tool simplify and accelerate creating the visualization and increase user friendliness. Several of the numerous practical innovations are presented here:

**INDIVIDUAL KEYPAD**
Simply adapt the keypad window to your machine requirements – directly in the LASAL VISUDesigner. You can adapt the layout and functions exactly to your corporate design or design completely individual keypads.

**MENU EDITOR**
Create drop-down menus with just a few clicks. The functions and appearance of the menus are defined once and can be used for any data points and elements.

**MARKER VARIABLES**
Use marker variables to simulate data points, which exist locally (1x per HTML client) or globally (1x per LASAL VISUDesigner data service).

**ANDROID & IOS**
All functions and standard operating elements of the LASAL VISUDesigner are optimized for use on mobile devices with Android and iOS operating systems.

**USER MANAGEMENT**
Here, the rights for changing users and roles, as well as role assignments are managed (access numbers).

**CLIENT IDENTIFICATION**
Configured client IP addresses always receive the same client ID over which they can communicate. In addition, define which IP addresses can access the system.
Machine and system visualizations are becoming more and more complex on the one hand and HTML5 applications are increasingly finding their way into production halls on the other. To enable fluid and modern operating concepts, HMIs with a new processor generation complete the portfolio:

With 2 GB DDR4 RAM and an 8 GB eMMC, the HMIs with high-performance EDGE3 Technology processor (4x 1.6 GHz) have a lot of memory. The operating system was also optimized: All four processor cores are precisely tuned to one another for fluid web visualizations and therefore improve the user experience (UX). The following EDGE3 HMIs expand SIGMATEK’s diverse portfolio in 2021:

- **Handheld Panel HGT 1053***
  with 10.1-inch capacitive multi-touch screen and Safety elements (SIL 3, PL e) such as emergency stop, confirmation button and key switch, as well as Gigabit Ethernet and USB

- **ETT 764***
  a 7-inch multi-touch widescreen panel with Gigabit Ethernet, USB as well as µSD card slot for extra memory. The HMI visually joins the family of ModularWide panels, including the programmable front LEDs

- **ETT ModularWide Panels***
  from 10.1 to 21.5-inch multi-touch screens, also with Gigabit Ethernet and USB interfaces. EDGE3 Technology provides fluid operation, even with larger display resolutions

Usable in landscape and portrait format, these panels give the machines a modern, high quality face. As do all SIGMATEK HMIs with processors, the EDGE3 panels also speak OPC UA and are therefore fit for the Smart Factory. With the HMI engineering tool LASAL VISUDesigner, web visualizations and therewith, new UX concepts can be easily and flexibly implemented. The standard controls provided can of course, be individually adapted – completely without programming or HTML5 experience.

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* Planned availability Q2/2021, subject to technical changes.
** Planned availability Q3/2021, subject to technical changes.