mechapro®

LAM DDS1 series

Digital Microstep Stepper Motor Drivers

20V=...90V=, 0.2A$_{RMS}$...10A$_{RMS}$ (14.1A$_{peak}$)

With the DDS family, LAM Technologies completely redefines the stepper motor drive with pulse/direction control. The DDS1 series is fully digitally controlled and ensures low-noise and precise motor operation. The family is divided into 10 models with different functionality and performance. In addition, the new series offers an extended range of functions compared to the well-known DS10 series.

This includes e.g. the query of limit switches, speed control via a +/- 10V input or speed preselection via digital inputs. With the optional encoder interface, closed-loop operation and torque control are also available. With these features, stepper motors can be used in applications where this was previously not possible.

The modell series at a glance:

Power Supply / Motor Current	5 Digital Inputs, 2 Digital Outputs, 1 Analog Input	8 Digital Inputs, 3 Digital Outputs, 1 Analog Input, 1 Encoder Input A, B, I
20..50 Vdc / 0.2-1.4 Arms	DDS1141	DDS1241
20..50 Vdc / 1.0-4.5 Arms	DDS1144	DDS1244
20..50 Vdc / 2.0-10 Arms	DDS1148	DDS1248
24..90 Vdc / 1.0-4.5 Arms	DDS1174	DDS1274
24..90 Vdc / 2.0-10 Arms	DDS1178	DDS1278

The rigid relationship between microstepping and resolution is eliminated by STEPLESS technology, which makes it possible to freely define the ratio between the incoming clock pulses and the position of the motor. This allows a high microstep resolution to be used even with a low clock frequency.

In conjunction with a motor with attached encoder, closed-loop operation prevents overloading of the drive and the associated step losses, while improving system efficiency. The nominal motor torque can now be used 100%, since no torque reserve has to be maintained to prevent step losses.

In simpler applications, it is possible to control the motor in START / STOP mode, with speed(s) selectable by digital I/Os or analog input, including control of acceleration and deceleration ramps.

The DDS1 series defines a new level of performance and functionality at still moderate prices. The devices are compact and allow easy and fast DIN rail mounting.

Features:

- Fully digital vector control
- Stepless technology with configurable nominal step size, operation of the motor in microstep
- Up to 8 digital inputs and 3 digital outputs
- 1 analog input +/-10V
- Optional: Encoder input A, B, Index differential
- Position control and speed control
- Puls/Direction, CW/CCW or quadrature input in position mode
- Optional: Closed-loop control, torque control
- Separate I/O supply 20-35V= (optional)

Models	Description	Value			Unit
		Min.	Typ.	Max.	
DDS1x41	Power supply voltage	20		50	V=
	Motor phase current (effective Value)	0.2		01. Apr	Arms
DDS1x44	Power supply voltage	20		50	V=
	Motor phase current (effective Value)	1		4.5	Arms
DDS1x48	Power supply voltage	20		50	V=
	Motor phase current (effective Value)	2		10	Arms
DDS1x74	Power supply voltage	24		90	V=
	Motor phase current (effective Value)	1		4.5	Arms
DDS1x78	Power supply voltage	24		90	V=
	Motor phase current (effective Value)	2		10	Arms
All models	Supply voltage logic (optional)	20	24	35	Vdc
	Digital input voltage range	3		28	Vdc
	Digital input supply current	3	4	8	mA
	Digital output voltage range	1		30	Vdc
	Digital output current range			80	mA
	Analog input voltage range	-10.0		+10.0	Vdc
	Analog input impedance		47		kOhm
	Supply voltage Encoder (output)	5.0	5.2	5.4	Vdc
	Supply current Encoder			100	mA
	Encoder input compatibility	Line Driver, TTL/CMOS, Open Collector			
	Chopper frequency		20		kHz
	Protections / Diagnostics / Alarms	Over-/Under voltage, Short circuit, Overheating, Break phase			
	Mechanical Specifications				
	Height	100			mm
	Depth	122			mm
DDS1x41, DDS1x44	Width	23			mm
DDS1x48, DDS1x74, DDS1x78		35			
DDS1x41, DDS1x44	Weight	150			g
DDS1x48, DDS1x74, DDS1x78		230			

Also available:
Series DDS5 with CANopen Interface
Available sone:
Series DDS7xxP with ProfiNet Interface
Series DDS7xxM with Modbus TCP/IP Interface
Accessories:
Programming interface UDP30
Programming software OmniAutomation (free download at mechapro.de/download-e.html#LAM)