

LAM DS30 series

Programmable stepper motor drives w. internal controller

18V=(16V~)...240V=(120V~), 0,3A_{RMS}...10A_{RMS} (14,1A_{peak})



The DS30 series drives have a built-in flexible motion controller able to perform accurate motor control in speed and position.

The programming is quick and simple through the development software tool. The program is built using functional blocks as variable assignment blocks, timing block, conditional jump blocks, etc. Particularly powerful is the mathematical block able to execute additions, subtractions, multiplications and divisions and which allows to realize even complex applications.

The connection with the external devices is through 4 inputs and 2 digital outputs each one optocoupled, independently PNP or NPN or line driver usable. Two +/-10V analog inputs and one 0-10Vdc analog output complete the available interface signals.

To assure the maximum flexibility, the I/O are not specialized and through the programming it is possible to use them as per application requirements. For example, it is possible to use the digital inputs to command the start and the stop of a cycle, the execution of the homing procedure, the selection of the target position, of the speed, etc. The digital outputs can be used to indicate the reaching of a position, the intervention of a protection, etc. The analog inputs, for example, can be used to change dynamically the speed, to execute a position adjustment, to change the timing, etc. The analog output can be used instead to command proportional actuators, to supply a speed reference to an inverter, to command an analog instrument, proportional valve, etc.

The drive is designed to be quickly and easily installed on DIN rail. The connection to the motor, with the control signal and the power supply is through colored and removable terminal blocks.

The connection to the programming and diagnostic port of the drive is through the UDP30 interface (see below), which is connected to the PC by the USB port. The interface ensures also the electrical insulation between the PC and the drive.



Features:

- Up to 3000rpm at 1/128 step/rev
- Mathematical functions at 32bit
- Speed or position control
- Independent acceleration and deceleration ramps
- Absolute and relative positioning
- 4 digital and two +/-10V analog inputs
- 2 digital and one 0-10V analog outputs
- 100KHz high speed counter
- AC power supply models available
- Optocoupled and differential I/O, independently NPN or PNP usable
- Inputs from 3Vdc up to 28Vdc, PLC compatible
- Line driving supported
- 11 bit analog inputs resolution
- 32bit quote registers from -2,147,483,647 to +2,147,483,647
- Resonance damping
- Automatic current reduction
- High efficiency power mosfet stage
- Complete diagnostics with univocal indication for each anomaly
- Over/under voltage protection, short circuit protection (cross phase, ground and positive supply)
- Overheating protection
- Break motor phase diagnostics
- Compact size
- Easy DIN rail installation
- Removable terminal block connector
- IP20-compliant
- Cost-effective

Symbol	Description	Model	Value			Unit
			Min.	Typ.	Max.	
Vp	Power supply voltage (for DC models)	DS3041	18		50	Vdc
Vac	Power supply voltage (for AC models)	DS3041A	16		36	Vac
If	Motor phase current (rms)		0,3		1,4	Arms
Vp	Power supply voltage (for DC models)	DS3044	20		50	Vdc
Vac	Power supply voltage (for AC models)	DS3044A	18		36	Vac
If	Motor phase current (rms)		1		4	Arms
Vp	Power supply voltage (for DC models)	DS3048	20		50	Vdc
Vac	Power supply voltage (for AC models)	DS3048A	18		36	Vac
If	Motor phase current (rms)		3		8	Arms
Vp	Power supply voltage (for DC models)	DS3073	24		90	Vdc
Vac	Power supply voltage (for AC models)	DS3073A	20		65	Vac
If	Motor phase current (rms)		0,8		3	Arms
Vp	Power supply voltage (for DC models)	DS3076	24		90	Vdc
Vac	Power supply voltage (for AC models)	DS3076A	20		65	Vac
If	Motor phase current (rms)		2		6	Arms
Vp	Power supply voltage (for DC models)	DS3078	24		90	Vdc
Vac	Power supply voltage (for AC models)	DS3078A	20		65	Vac
If	Motor phase current (rms)		4		10	Arms
Vp	Power supply voltage (for DC models)	DS3084	45		160	Vdc
Vac	Power supply voltage (for AC models)	DS3084A	20		65	Vac
If	Motor phase current (rms)		2		4	Arms
Vp	Power supply voltage (for DC models)	DS3087	45		160	Vdc
Vac	Power supply voltage (for AC models)	DS3087A	35		115	Vac
If	Motor phase current (rms)		4		8,5	Arms
Vp	Power supply voltage (for DC models)	DS3098	45		240	Vdc
If	Motor phase current (rms)		4		10	Arms
Vdi	Digital input voltage range		3		28	Vdc
Idi	Digital input supply current		4	6	8	mA
Vdo	Digital output voltage range		1		30	Vdc
Ido	Digital output current range				50	mA
Vai	Analog input voltage range		-10		10	Vdc
Rai	Analog input impedance			47		kΩ
Vao	Analog output voltage range		0		10	Vdc
lao	Analog output current range				10	mA
Prt	Protections / Diagnostics / Alarms		Over/Under voltage, Short circuit, Overheating, Break phase			
Mpr	Quote range (1/128 step)		-2,147,483,638		+2,147,483,638	1/128s
Psp	User program memory (function blocks)			250		
Clp	Mathematical calculation resolution			32		bit
Mechanical Specifications						
FDh	Height			100,4		mm
Fdl	Depth			119		mm
FDw	Width	DS3041(A), DS3044, DS3073	17,5 (22,7)			mm
		DS3044A, DS3073A, DS3048(A), DS3076(A), DS3078(A), DS3084(A), DS3087(A), DS3098	35			
FDnw	Weight	DS3041(A), DS3044(A), DS3073(A)	160 (190)			g
		DS3048(A), DS3076(A), DS3078(A), DS3084(A), DS3087(A), DS3098	270 (330)			

Notes:

The A suffix (e.g. DS3076A) identifies the AC power supply versions

Also available: Devices with bus interface. DS50xx (RS485), DS52xx (RS232) and DS54xx (USB)

Stock types are highlighted in bold types.

