



**Programmable Drivers with**  
**USB - RS232 - RS485**  
**interface and**  
**MODBUS**  
**communication protocol**

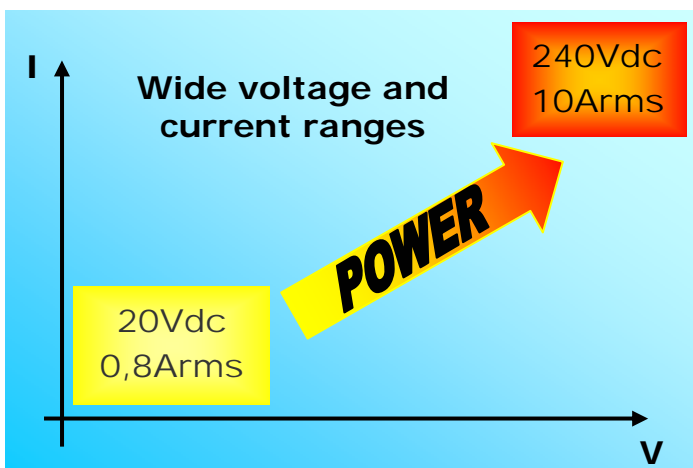


The DS5x two phase stepper motor drives series is composed of 24 different models, subdivided in 8 power sizes and 3 different interface types: DS50-RS485, DS52-RS232, DS54-USB. The communication interface is insulated from the power supply to grant reliability and noise immunity.

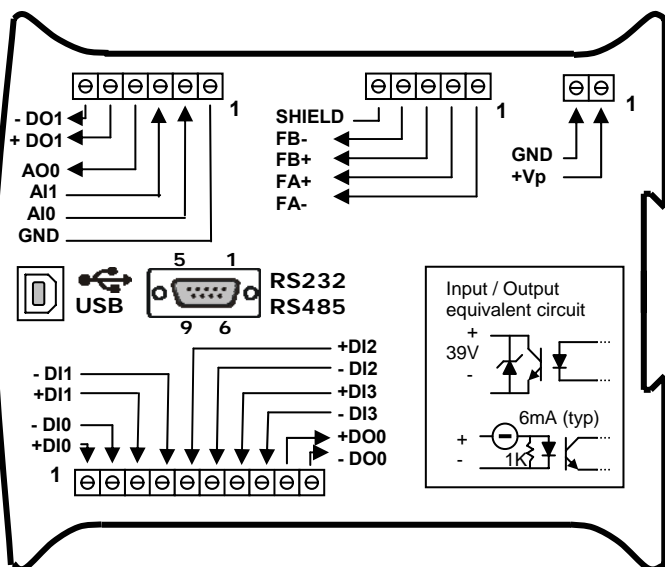
The chosen communication protocol is the Modbus-RTU industrial standard which offers good performances at low costs. Through the commands set provided by the protocol, the master device (PC, PLC, etc.) is able to access in real time to the driver's registers and to the user's variables, freely declarable during programming, which can represent a data exchange area between the master device and the user's program in execution in the driver.

The programming capability and the flexibility offered by the available programming blocks (which also include mathematical blocks) together with the many I/O resources which the driver is provided with, allow to simply realize applications with decentralized intelligence which relieve the master from the most onerous real-time activities and reduce the data traffic on the communication bus.

- ✓ Insulated USB, RS232 and RS485 interface
- ✓ Modbus-RTU communication protocol
- ✓ Communication up to 38.400 baud
- ✓ Driver USB for Linux and Windows (98, SE, Me, 2K, XP and VISTA)
- ✓ Bus access to all the registers and user's program variables
- ✓ Graphic programming at blocks
- ✓ Mathematical functions at 32bit
- ✓ Speed or position control
- ✓ Independent acceleration and deceleration ramps
- ✓ Absolute or relative positioning
- ✓ Resolution at 1/128 step/rev
- ✓ Quote from -2,147,483,638 to +2,147,483,647
- ✓ 4 digital and 2 +/-10V analog inputs
- ✓ 2 digital and 1 0-10V analog outputs
- ✓ Optocoupled and differential I/O, independently NPN or PNP usable
- ✓ Analog inputs at 11bit
- ✓ Digital outputs from 3Vdc to 30Vdc
- ✓ Wide range of power supply
- ✓ Resonance damping
- ✓ Automatic current reduction
- ✓ High efficiency power mosfet range
- ✓ Complete diagnostics with univocal indication for each anomaly
- ✓ Complete protections (V, I and temp.)
- ✓ Break motor phase diagnostics
- ✓ Compact size
- ✓ Easy DIN rail installation
- ✓ Connections on removable terminal block
- ✓ IP20-compliant construction
- ✓ Low cost



Symbol	Description	Value	Unit			
			Min	Typ	Max	
Vp	Power supply voltage	DS5x44	20		50	Vdc
If	Phase current (RMS)		1		4	Arms
Vp	Power supply voltage	DS5x48	20		50	Vdc
If	Phase current (RMS)		3		8	Arms
Vp	Power supply voltage	DS5x73	24		90	Vdc
If	Phase current (RMS)		0.8		3	Arms
Vp	Power supply voltage	DS5x76	24		90	Vdc
If	Phase current (RMS)		2		6	Arms
Vp	Power supply voltage	DS5x78	24		90	Vdc
If	Phase current (RMS)		4		10	Arms
Vp	Power supply voltage	DS5x84	45		160	Vdc
If	Phase current (RMS)		2		4	Arms
Vp	Power supply voltage	DS5x87	45		160	Vdc
If	Phase current (RMS)		4		8.5	Arms
Vp	Power supply voltage	DS5x98	45		240	Vdc
If	Phase current (RMS)		4		10	Arms
Vdi	Digital input voltage range		3	24	30	Vdc
Idi	Digital input supply current		4	6	8	mA
Vdo	Digital output voltage range		1	24	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
Iao	Analog output current range		0		10	mA
Prt	Protections / Diagnostics	Over/Under voltage, Short circuit, Overheating, Break phase				
Mpr	Quote range (1/128 step)		-2,147,483,638 / +2,147,483,647		1/128s	
Psp	User program memory (functional blocks)		250			
Clp	Mathematical calculation resolution		32		bit	
Bcr	Communication speed	9600			38400 baud	
Bf	Data format	N,8,2 / E,8,1 / O,8,1				bits
<b>Mechanical Specifications</b>						
FDh	Height		100.4		mm	
FDI	Depth		119.0		mm	
FDw	Width	DS5x44, DS5x73	22.7		mm	
		DS5x48, DS5x76, DS5x78, DS5x84, DS5x87, DS5x98	35.0			
FDnw	Weight	DS5x44, DS5x73	200		g	
		DS5x48, DS5x76, DS5x78, DS5x84, DS5x87, DS5x98	320			



**UDP30**  
Programming, debug  
and diagnostics  
interface

