

## Programmable Drivers 20V...240Vdc 0,8A...10Arms for two phase stepper motors



The DS30xx 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 destination quote, 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

- ✓ Simple programming at blocks
- ✓ Mathematical functions at 32bit
- ✓ Speed or position control
- ✓ 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
- ✓ Line driving supported
- ✓ Analog inputs resolution at 11bit
- ✓ Digital inputs from 3Vdc up to 30Vdc
- ✓ Independent acceleration and deceleration ramps
- ✓ Absolute and relative positioning
- ✓ Resolution at 1/128 step/rev
- ✓ Quote from -2.147.483.638 to +2.147.483.647
- ✓ Wide range of power supply
- ✓ Resonance damping
- ✓ Automatic current reduction
- ✓ High efficiency power mosfet stage
- ✓ 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

output can be used instead to command proportional actuators, to supply a speed reference to an inverter, to command an analog instrument, 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 DUP port of the drive is through the UDP30 interface (see photo below), which is connected to the PC by the USB port. The interface ensures the electrical insulation between the PC and the drive.



| Symbol                    | Description                             |   | Value                           |     |     | Unit   |
|---------------------------|---|---|---------------------------------|-----|-----|--------|
|                           |   |   | Min                             | Typ | Max |        |
| Vp                        | Power supply voltage                    | DS3044  | 20                              |     | 50  | Vdc    |
| If                        | Phase current (RMS)                     |   | 1                               |     | 4   | Arms   |
| Vp                        | Power supply voltage                    | DS3048  | 20                              |     | 50  | Vdc    |
| If                        | Phase current (RMS)                     |   | 3                               |     | 8   | Arms   |
| Vp                        | Power supply voltage                    | DS3073  | 24                              |     | 90  | Vdc    |
| If                        | Phase current (RMS)                     |   | 0.8                             |     | 3   | Arms   |
| Vp                        | Power supply voltage                    | DS3076  | 24                              |     | 90  | Vdc    |
| If                        | Phase current (RMS)                     |   | 2                               |     | 6   | Arms   |
| Vp                        | Power supply voltage                    | DS3078  | 24                              |     | 90  | Vdc    |
| If                        | Phase current (RMS)                     |   | 4                               |     | 10  | Arms   |
| Vp                        | Power supply voltage                    | DS3084  | 45                              |     | 160 | Vdc    |
| If                        | Phase current (RMS)                     |   | 2                               |     | 4   | Arms   |
| Vp                        | Power supply voltage                    | DS3087  | 45                              |     | 160 | Vdc    |
| If                        | Phase current (RMS)                     |   | 4                               |     | 8.5 | Arms   |
| Vp                        | Power supply voltage                    | DS3098  | 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                             | 0   | 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 |     |     | 1/128p |
| Psp                       | User program memory (functional blocks) |   | 250                             |     |     |        |
| Clp                       | Mathematical calculation resolution     |   | 32                              |     |     | bit    |
| Mechanical Specifications |   |   |                                 |     |     |        |
| FDh                       | Height                                  |   | 100.4                           |     |     | mm     |
| FDI                       | Depth                                   |   | 119.0                           |     |     | mm     |
| FDw                       | Width                                   | DS3044, DS3073  | 17.5                            |     |     | mm     |
|                           |   | DS3048, DS3076, DS3078, DS3084, DS3087, DS3098              | 35.0                            |     |     |        |
| FDnw                      | Weight                                  | DS3044, DS3073  | 185                             |     |     | g      |
|                           |   | DS3048, DS3076, DS3078, DS3084, DS3087, DS3098              | 295                             |     |     |        |

