

Damatrol MC300 is a digital single-loop controller which is used as positioner or three position controller.

The positioner drives an actuator through binary outputs on the basis of the difference between the PID controller's output and the actuator's position. Three position control operates in the same way as the positioner, except that control is carried out on the basis of the difference between the controller's measured value and setpoint. The controller takes also into account the drive time of the actuator.

Technical specifications

Ambient requirements

- Operating temperature 0 to +50 °C
- Storage temperature -40 to +80 °C
- Relative humidity 0 to 80 %
- Vibration 1.3 mmpp, 5-14 Hz, 0.5 g, 14-150 Hz
- Mounting position Freely selectable.

Enclosure class

- Panel-mounting enclosure IP40, display as option IP54
- Field enclosure IP65

Dimensions

- Weight 1.7 kg
- Width x height x length
72 x 144 x 220 mm
(without display unit) 72 x 144 x 186 mm
- Mounting cut-out 68 x 138 mm
(with mounting collar) 3" x 6" (US Std.)

Power supply

- Supply voltage
230 V (-15 % .. +10 %) 50/60 Hz
115 V (-15 % .. +10 %) 50/60 Hz
- Power consumption max. 8 W
- Power failure characteristics
Data support in memory
 - All data: typically 24 h (e.g. setpoint and controller output)
- Parameters and calibration: 10 y.

I/O connections

- Analog inputs 2
- Analog outputs 1
- Binary inputs 2
- Binary outputs 2
- Transmitter supply connections 2
- Permissible wire cross-section max. 2.5 mm²
- Field signal connection technique: Multiterminal screw-terminal block

Analog inputs

- Resolution 12 bit
- Accuracy 0.1 % F.S.
- Temperature error 0.06 % /10°C F.S.
- Input resistance 250 Ω
- Attenuation 50 Hz/60 dB
- Grounding: Inputs have common ground potential
- Max. range 0 .. 20.5 mA (freely selectable) (as voltage input) 0 .. 5 V
- Max. voltage 30 V
- Filtering time constant 25 ms
- Impedance 250 Ω
(as voltage input) 10 MΩ

Analog output

- Resolution 12 bit
- Accuracy 0.15 % F.S.
- Temperature error 0.1 % /10°C F.S.
- Load capacity 800 Ω
- Max. range 0 .. 20.5 mA (freely selectable)

Binary inputs

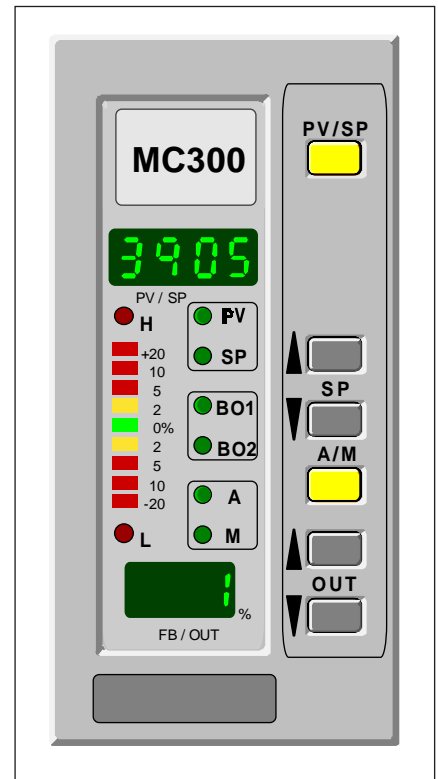
- Grounding: grounded input
- Switching device
- Max. leakage current 2 mA
- Min. current capacity 6 mA
- Min. voltage capacity 28 V

Binary outputs

- Type: Solid state relay, make-contact
- Voltage max. 30 V
- Current max. 100 mA
- Load power max. 3 VA
- Isolation voltage min. 1000 VAC
- Max. switch resistance 5 Ω

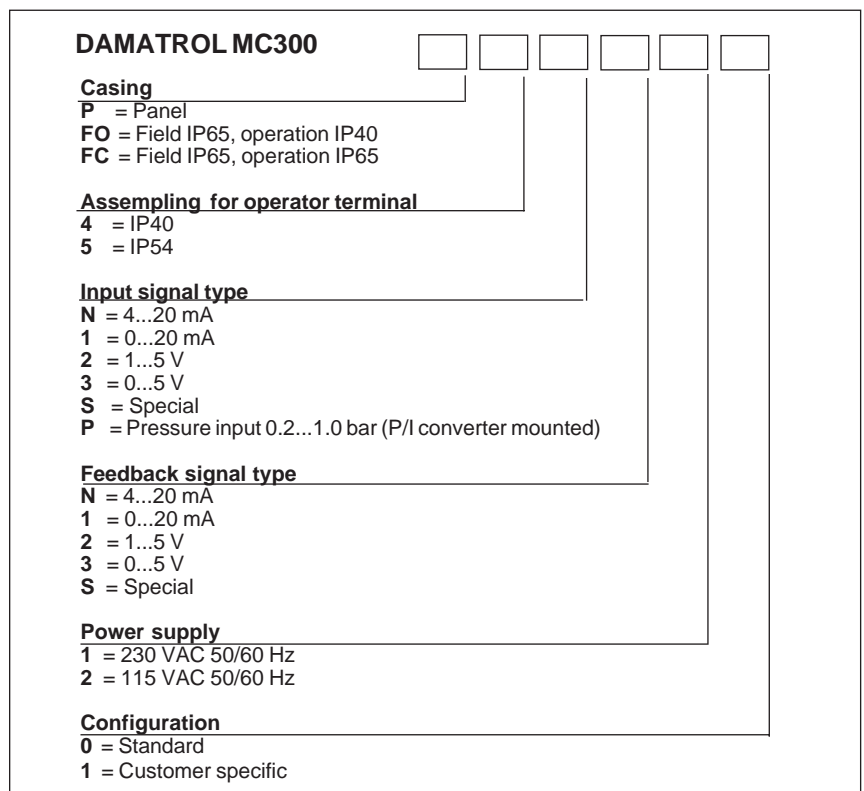
Transmitter supply connections

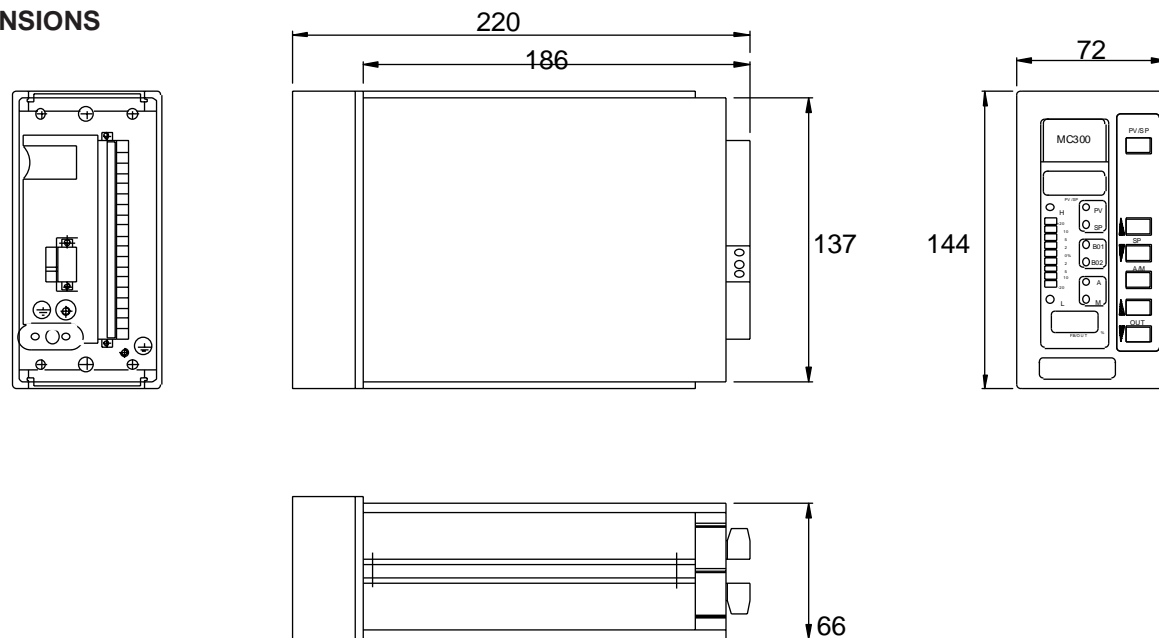
- Current limitation 25 mA
- Mains voltage 230/115 VAC
24 V (+10 % .. -15%)



Grounding

- Analog inputs and outputs: Common ground potential
- Binary inputs and outputs: Common ground potential
- Analog and binary ground: Connected together inside controller
- Guard wire connections 2 grounding screws (protective earth and sheaths of cables)



DIMENSIONS

Buses

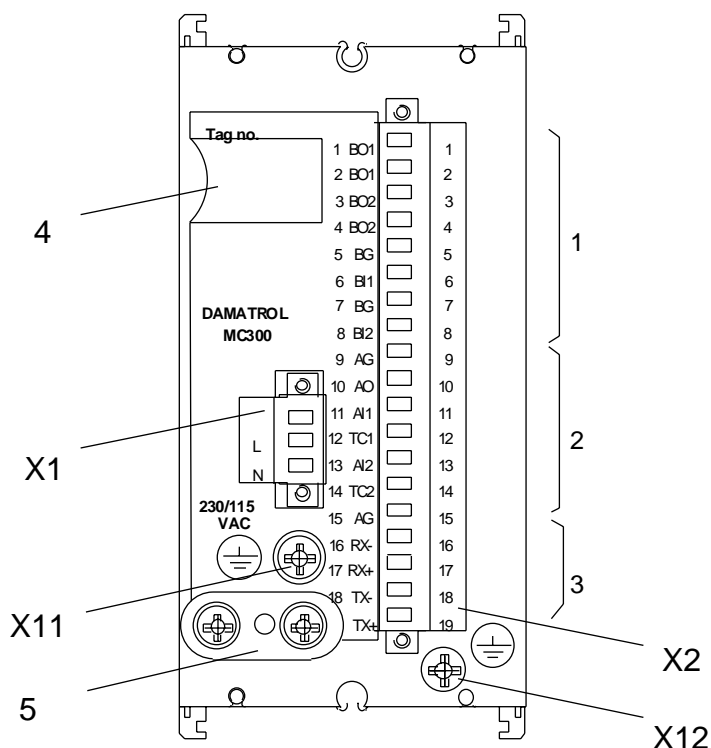
- Interfaces RS-232, RS-485
- Max. cable length 1200 m (RS-485), 15 m (RS-232)
- Baud rate 600 .. 38400 baud
- Protocol:
 - Modbus RTU (slave),
 - DBUS (multidrop bus)
- Max. number of controllers per bus 32 (Modbus) or 15 (DBUS)

Control panel

- Digital displays 4- and 3-digit green
- 7-segment displays for measured process value, setpoint and controller output.
- LEDs
 - 2 reds for alarm limits;
 - 3 x 2 greens for indicating the PV/SP, B01/B02 and A/M states;
 - 9-LED green/yellow/red control deviation display
- Display brightness adjustable (15 steps)
- Keypad 6 pushbutton keys

Software

- Computing time 100 ms
- PID controller
 - KP (gain) 0.125 ... 24.0
 - TI (integral action time) 1.1 s .. 1370, infinite
 - TD (derivative action time) 0 ... 1536 s
- Measured value and setpoint scale: High and low limit selectable -999 ... +9999.
- Measured value handling: Filtering, linearization, square root extraction, high and low limit alarms.
- Three point control:
 - start thres 0.0...100.0%
 - dead time 0...999.9 s
 - drive time of the valve 0...999.9 s

CONNECTIONS


X1	Mains power connector	1	Binary I/Os
X2	I/O connector	2	Analog I/Os
X11	Housing grounding screw	3	RS-485 interface
X12	Grounding screw	4	Tag number pocket
		5	Cable clamp



MEETS THE COUNCIL OF THE EUROPEAN UNION DIRECTIVES 73/23/EEC FOR ELECTRICAL EQUIPMENT DESIGNED FOR USE WITHIN CERTAIN VOLTAGE LIMITS AND AMENDMENT 93/68/EEC AND 89/336/EEC FOR ELECTROMAGNETIC COMPATIBILITY REQUIREMENTS.

We reserve the right for technical changes without prior notice.