M42 Hydraulic Controller

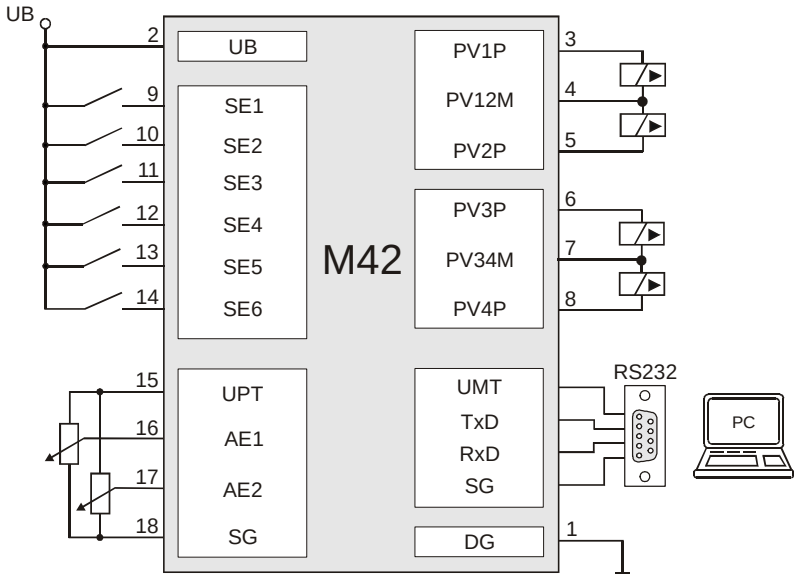
The M42 is a multi-application controller for use in mobile hydraulics and automotive systems. The software controls two proportional valves with a regulated current or alternatively two pumps, two directional control valves or two independent proportional magnets (PV1 and PV3).

The command values for currents can be set using potentiometers (for example a rotary potentiometer, joystick or a foot pedal), a PLC or entered directly as fixed values via the switch inputs. The correlation between input voltage and solenoid current is always freely programmable by the operator.

In a typical application potentiometer 1 controls pump 1. In this condition, the switch inputs SE1 and SE2 can be used to select the direction, i.e. the choice of solenoid 1 or 2. Correspondingly potentiometer 2 controls pump 2 and the switch inputs SE3 and SE4 determine the solenoid 3 or 4. The ramps for all solenoids can be set independently of each other.

The M4 controls accurately and in reproducible form. Parameter setting by a PC or the mini terminal MT (via the RS232 interface) guarantees a quick start-up procedure and also good diagnosis. The PC software ConDoc - Control&Document® supports both online modification and the storage of all the data on disk.

M42 Connection diagram



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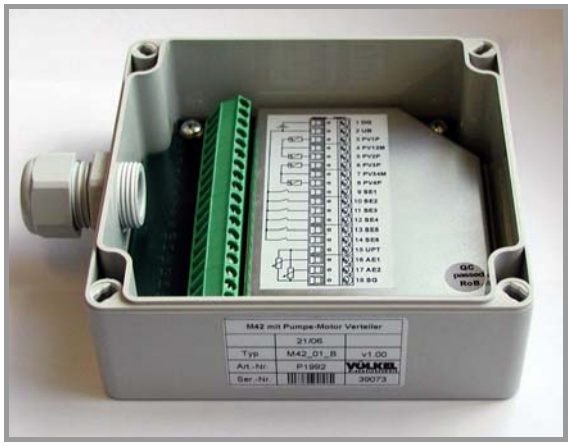
M42 Terminal block connections



The electric connection is established using the terminal block in the housing. A 9-pin socket serves for the connection to a PC, alternatively to the MT mini terminal. The current equipment status (supply voltage, communication, inputs/outputs) can be checked via the die integrated LED.

1	DG	Digital ground, minus (earth)
2	UB	Supply voltage, plus (8 ... 32V)
3	PV1P	Proportional output 1, plus
4	PV12M	Proportional output 1/2, minus
5	PV2P	Proportional output 2, plus
6	PV3P	Proportional output 3, plus
7	PV34M	Proportional output 3/4, minus
8	PV4P	Proportional output 4, plus
9	SE1	Switch input 1
10	SE2	Switch input 2
11	SE3	Switch input 3
12	SE4	Switch input 4
13	SE5	Switch input 5
14	SE6	Switch input 6
15	UPT	Potentiometer supply (approx. 4,3V)
16	AE1	Analogue input 1
17	AE2	Analogue input 2
18	SG	Signal earth

M42 Technical Data

Overall size:	122 mm x 120 mm x 55 mm
Weight:	350g
Plug connection:	18-pin terminal block inside the housing
Power supply:	UB = 8 ... 32V
Current consumption:	Approx. 65 mA at 24V (plus valve currents)
Diagnosis, Parameter Setting:	With MT mini terminal or PC
Status indication:	Via LED inside the housing
Microcontroller:	XC164CS / 12MHz
Program memory:	256kByte Flash-EPROM
Data memory:	12kByte RAM
Parameter memory:	8kByte EEPROM
Interfaces:	1 x RS232
Inputs:	6 Switch inputs, pulldown resistor 4,3kΩ, switching thresholds Uon = approx. 6,2V, Uoff = approx. 4,9V
	2 Analogue inputs, 10Bit resolution, voltage range 0 ... 10V, minimum input resistance 100kΩ
Outputs:	4 Proportional solenoid outputs, each for a maximum of 2,2A
	1 Voltage supply output for potentiometers with 1 ... 10kΩ resistor
Housing:	Polyester, light grey, Protection category IP65
Ambient temperature:	-40 °C ... 85 °C
EMV:	Guideline 72/245/EWG, Guideline 75/322/EWG, DIN EN 13309, ISO 7637, DIN EN 14982