# The Digital Proportional Amplifier HC2.5

The digital amplifier HC2.5 controls valves with one or two solenoids exactly and in reproducible form. The amplifier monitors the solenoid for short circuits, cable breaks and range limits, and also the potentiometer for cable breaks. A status output provides information regarding the operating state and can be analysed directly by a PLC.

A clear menu structure supports the modification using the hand terminal MT or a PC (RS 232 interface). The use of the PC software ConDoc - Control&Document®, simplifies and speeds up data input, documentation and the control of the programmed solenoid current – especially when identically constructed machines are to be adapted.

Various operating modes are available with the HC2.5. The user decides which operating mode suites best to his needs.

Test operation: Enables checking of the wiring and a valve test run. Setting values for current can be directly called up using the hand terminal MT.
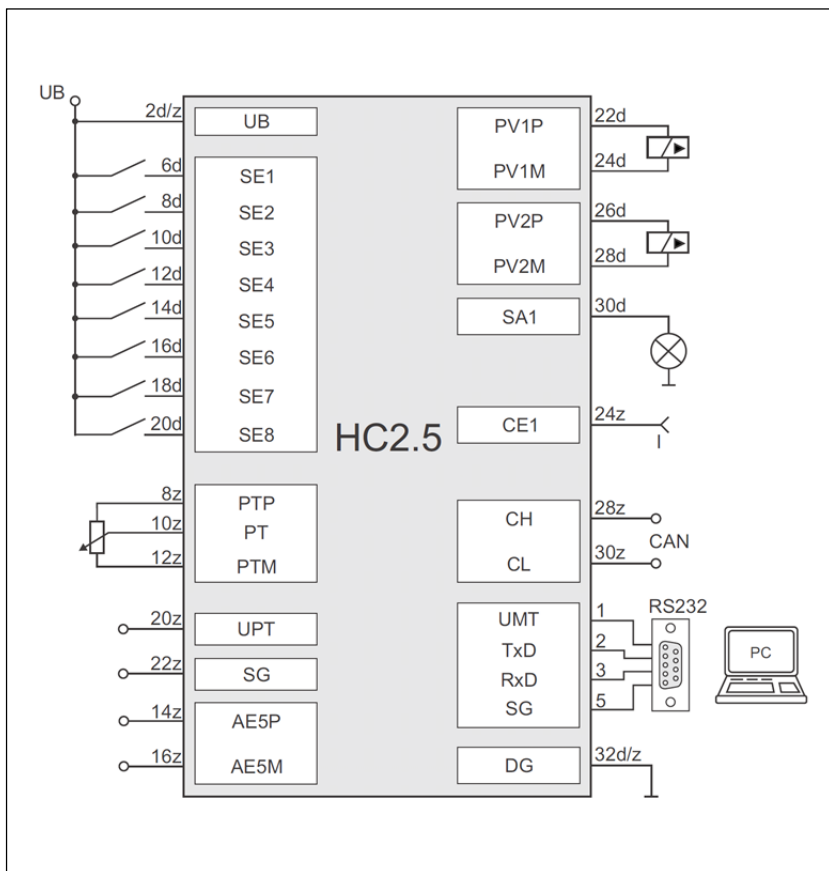
Analogue operation:
Serves to connect a potentiometer or a PLC. The set value for the solenoid is determined from the signal at the analogue input. Three parameter sets can be selected via the switch inputs. Two switches operate as limit switches.

Digital operation:
Six digital modes are available to specify, for example, set points and configurations.

The current set values (max. 63) are called up via the switches. It is possible to set a rising and a falling ramp separately for each solenoid. The desired solenoid is activated by the polarity sign of the nominal current.

Complete parameter sets can be activated at the switch inputs. Up to seven different parameter sets and setting values can be pre-programmed. They can then be selected online.

HC2.5 Technical data

Dimensions:	190mm x 128mm x 20mm (160mm plug -in card for 19-inch slot , 4 TE, 3HE)
Weight:	Approx. 170g
Plug connections:	Multipole connector, DIN 41612, type F, 32 contacts
	D sub-socket for RS 232, 9 contacts
Power supply:	UB = 12 ... 32V
Current input:	Approx. 60mA with 24V supply plus valve current
Parameter setting:	PC (RS232) or hand terminal MT
Microcontroller:	ST10F269 / 40MHz
Program memory:	256kByte Flash ROM
Data memory:	12kByte RAM
Parameter memory:	64kBit EEPROM
Interfaces:	RS 232, CAN
Inputs:	8 Switch entries, pull down resistors 4.7kΩ, to connect external switches or a PLC
	1 Differential input, 10-bit, -10 V ... +10V for connection to the analogue output of a PLC or a potentiometer (master switch, joystick)
	1 Potentiometer input with internal cable break recognition
	1 Current input, 10-bit, 4-20mA
Outputs:	1 Current supply output, 8V / 60mA to supply an external potentiometer
	1 Status output, max. 1000mA
	2 Proportional solenoid outputs, solenoid current maximum 2800mA
Data generation:	10-bit analogue/digital converter for solenoid current and analogue input
Operating modes:	1 x ANALOG Target value setting via differential input, potentiometer input or with three parameter sets using the switch inputs
	2 x ANALOG/DIGITAL Default setting via differential input or via potentiometer input with digital set points.
	6 x DIGITAL Retrieval of pre-programmed solenoid currents and matching ramps from the switch entries
	1 x TEST z to check the connection and test run the valve
Temperature range:	Operation: -40°C bis +85°C
Safety:	Watchdog microcontroller, Reverse pole protection, Protection against short-term overload
EMV:	Industrial application: DIN EN 61000 6-4, DIN EN 61000 6-2 (in the housing)