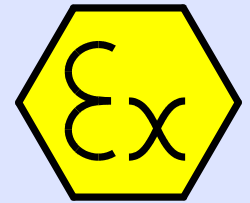


**Gönnheimer**  
Elektronik GmbH

# Dosing- Controller



for the hazardous area  
PTB 98 ATEX 2071

## DC155

- 👉 **Mounting inside hazardous area zone 1**
- 👉 **Ex-protection: EEx ib IIC T6**
- 👉 **Solid housing, protection class IP65**
- 👉 **Universal dosing functions:**
  - Dosing control with digital solenoid valves
  - Dosing control using proportional solenoid valve
  - Dosing control with absolute level signal
  - Dosing with PID controlled flow (Option)
- 👉 **Graphic LCD: 240x128 Pixels**
- 👉 **Menu-guided configuration, continuous indication of preset, current quantity, flow, total sum and time during the batch**
- 👉 **Remote control via special function inputs possible**
- 👉 **Operates with one transmitter power supply (in minimal configuration)**
- 👉 **Adjustable maximum preset**
- 👉 **Continuous rise and fall ramp for analogous output**
- 👉 **lockable front keys, configuration and parameters are code protected**

### Additional Options

- 👉 **TTY- or Modbus- Interface**
- 👉 **calibratable batch protocol print**
- 👉 **Pt100- input for temperature compensation of the expansion coefficient  $\gamma$  and temperature indication**
- 👉 **Separate analogous output power supply terminals (max. impedance of 1 k $\Omega$ )**
- 👉 **Connect the DC155 simply to a 24V DC line voltage, for non hazardous area application**



### Short description

The dosing controller DC155 is an all purpose dosing control device to manage batch controlling of any arbitrary liquids or solid products inside the hazardous area. With a comfortable keyboard, large keys (22 x 22 mm), a clearly arranged display and the flexible functionality it is easy to realise simple as well as complex batch applications direct in hazardous area, without huge wiring expense to a e.g. panel room in safe area.

It is possible to realise a remote control for the basic functions >START, STOP, RESET<. The DC155 keeps the actual dosing status in a EEPROM, if the power supply fails the DC155 is able to continue working after the power is back. The DC155 works nearly with any available transmitter, because he can operate with NAMUR- and digital 24V- signals in standard version and with analogous signals as an option.

Shocks on the pipe system can be prevented by a rising and falling ramp using a proportional solenoid valve or by using a coarse and a fine valve. Moreover it is possible to utilise the lag quantity and the preshut of the coarse valve to achieve a high dosing accuracy. The DC155 has a comfortable malfunction and disturbance monitoring system to monitor the sensor wiring and the flow.

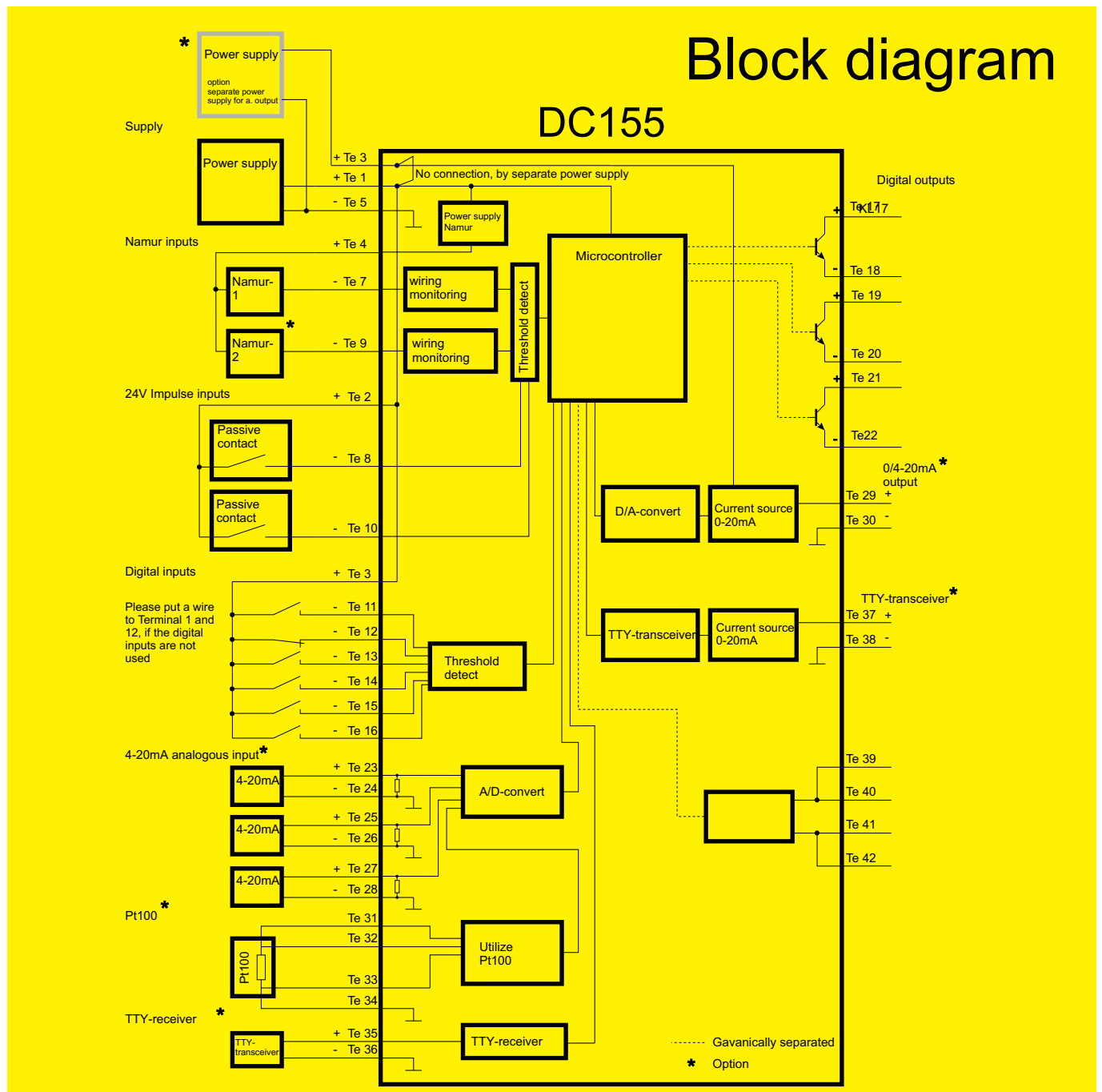
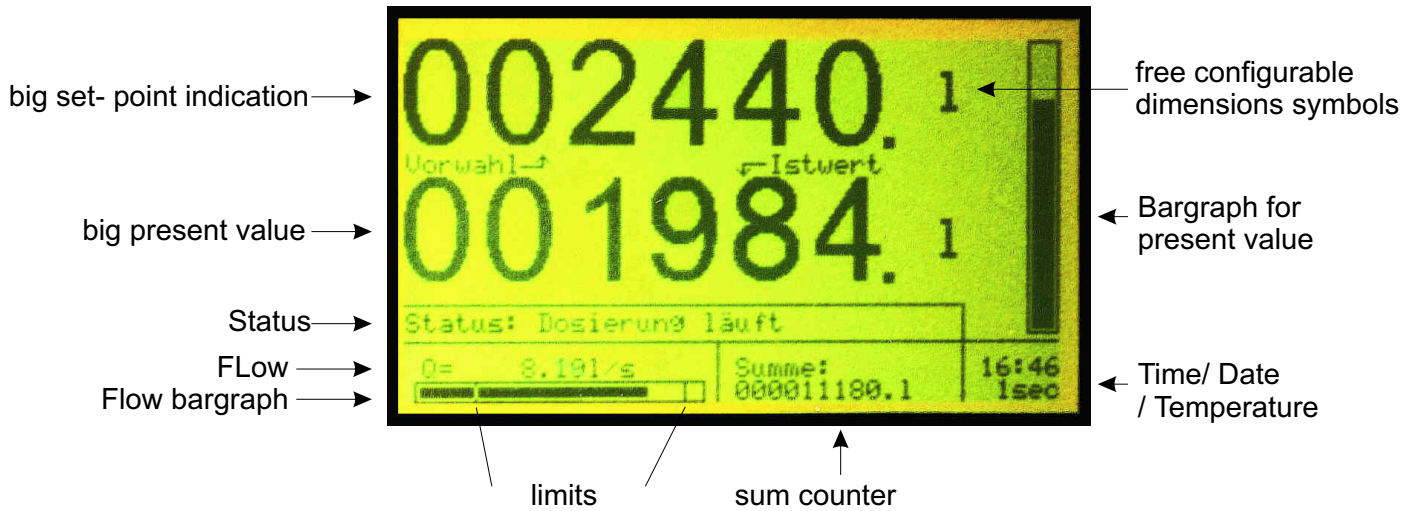
The analogous output of the DC155 has a 14 bit resolution and it can drive a impedance up to 600  $\Omega$ , respectively 1000  $\Omega$ , using the separate analogous output supply option.

The DC155 has an **internal PID- flow controller** as an option. With this option the DC155 is a batch controller **and** a PID- flow controller in one device. The batch controller fills up the desired volume and the flow controller regulates the medium flow to the predefined set-point flow during the batch process. The set-point flow has also a ramp shape. The dynamical behaviour of the feedback flow controller can be adjusted with the common PID-parameter set: Kp, Ki and Kd.

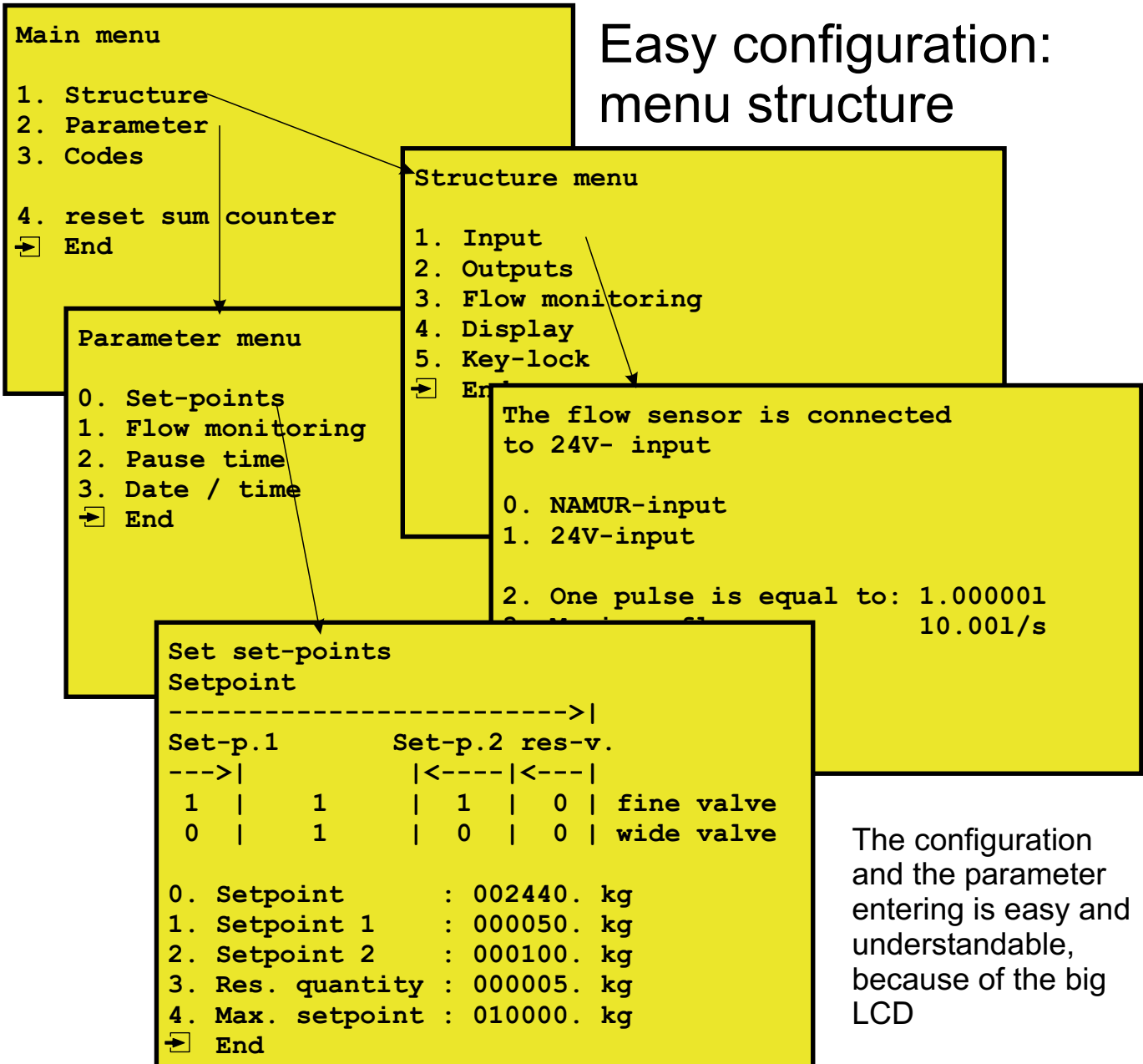
### Service

- Customised ex works calibration
- Application consultation

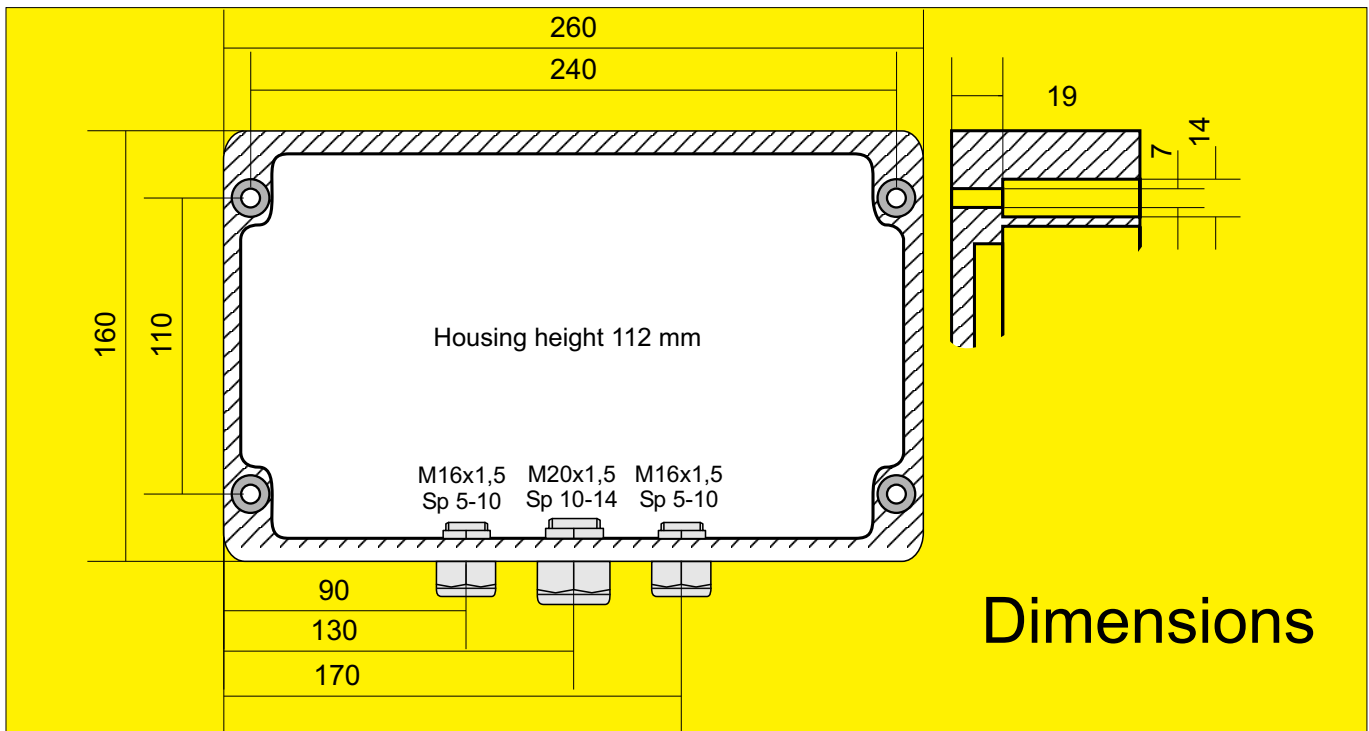
# More transparency: graphic LC-Display



# Easy configuration: menu structure



The configuration and the parameter entering is easy and understandable, because of the big LCD



## Technical Details

		Dosing controller DC155
General	Mounting	Inside hazardous area
	Ex-protection	EEx ib IIC T6
	Housing protection class	IP65
Mounting	Ambient temperature	-10°C ...+45°C at T6    -10°C ...+65°C at T4
Housing	Dimensions	H x B x T: 160 mm x 260 mm x 112 mm
	Material	Aluminium lacquered / front foil: polyester
Electrical	Main voltage	Intrinsically safety EEx ib IIC
Specifications	Power consumption	min. 20 mA at 15V = 300 mW (without analogous output)
	Inputs	NAMUR Max input frequency: 2 kHz
	24V- Digital input	Threshold : 0-Signal: U < 2 V, 1- Signal: U > 5 V
	Analogous input	4-20 mA, load: 15 Ω
	Measuring error	< 0,2 %
	Temperature coefficient	< 0,01 % /K
Outputs	Digital output	3 intrinsically safe galvanically separated digital outputs closed output remain voltage ≈ 2,5 V
	analogous output	4-20 mA, min 600 Ω , error < 0,2 % TK < 0,01 %/K
Power supply	minimum	MUS with U ≥ 15 V, I ≥ 20 mA, load ≥ 750 Ω
	DC155.x.0.0.x.0.0.x with analogous output	U ≥ 15 V, current delivery see above + 20 mA or using separate MUS : DC155.x.x.x.x.x.x.1
	with TTY-interface	U ≥ 15 V, current delivery see above + 20 mA
	with 2. NAMUR- input	U ≥ 15 V, current delivery see above + 6 mA
Ergonomy	Display	Graphical LC-Display
	Entering configuration	Menu guided, languages: German, English, French, Dutch
	TTY-interface	Protocol print remote control via ESC- sequence
	Modbus	Control, operate, Indicate with Bus- Interface

Please see electrical ex-limits at EC-TYPE EXAMINATION CERTIFICATE PTB 98 ATEX 2071

## Type code

		DC155	.x	.x	.x	.x	.x	.x	.x
Analogous input	no Analogous input.....	.0							
	one 4...20mA analogous input .....	.1							
	Scale signal amplifier WV157 .....	.4							
Analog. output:	no analogous output.....	.0							
	one 0/4...20mA analogous output .....	.1							
	PID controlled analogous output .....	.2							
NAMUR input:	one NAMUR- input .....	.0							
	two NAMUR- inputs .....	.1							
Pt100 input:	no Pt100- input.....	.0							
	one Pt100- input.....	.1							
TTY- interface:	no interface .....	.0							
	TTY- transceiver .....	.1							
	TTY- receiver.....	.2							
	TTY- transceiver and receiver.....	.3							
Modbus	no interface.....	.0							
	Modbus interface present.....	.2							
Separate power supply:	no separate power supply .....	.0							
	Analogous output separate power supply .....	.1							

Accessories: Ex- i power supply mounting in hazardous area: SG160  
Supply and interface module mounting in hazardous area: VI156

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