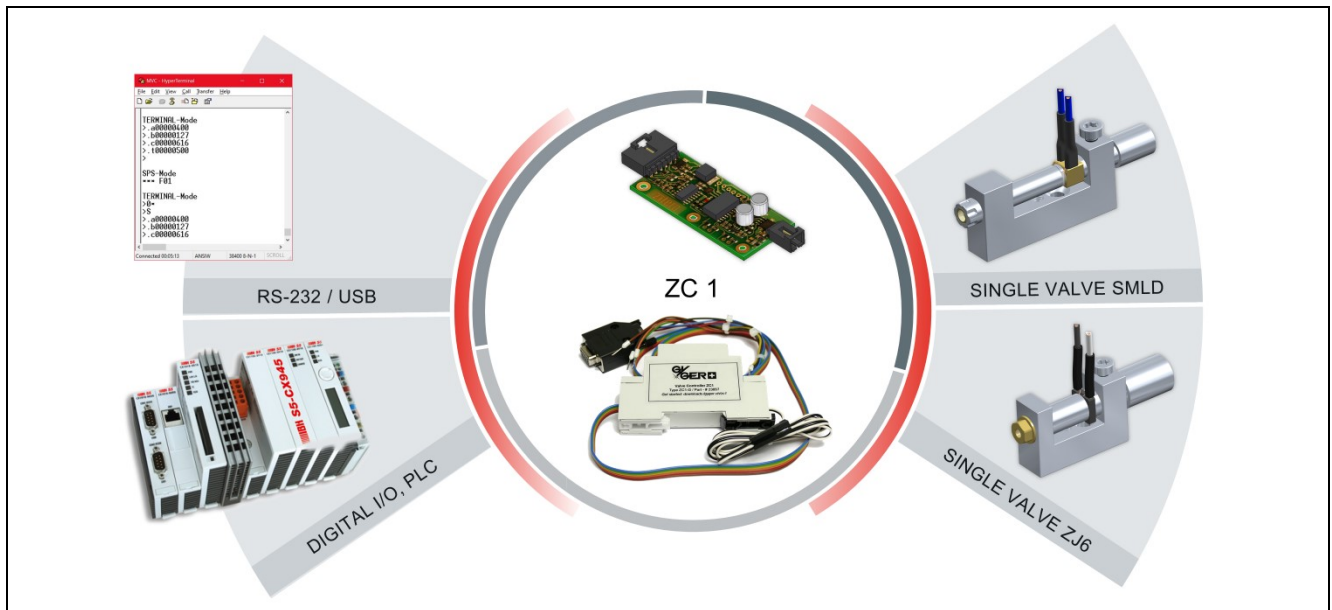# VALVE CONTROLLER ZC 1

Complete Integrated Solution

The Gyger valve controller ZC1 is a configurable 1-channel valve driver, usable for the Gyger SMLD and Zitera microvalve families.
Optimal dispensing accuracy is given by µs precise control with the "peak and hold" principle.
The interfaces allow a straightforward integration into existing systems if required.
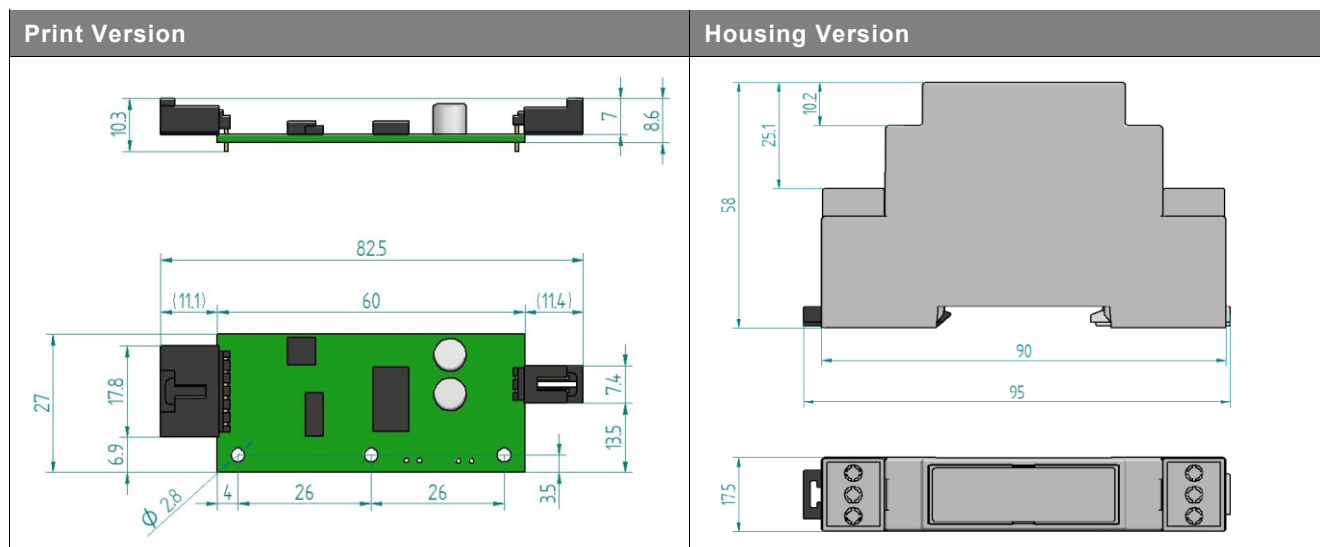
PLC operating modes and behavior

In PLC mode, triggering a shot can be controlled via hardware signals, depending on the parameters that were previously set in the terminal mode and the selected operating mode (F 0 – 5).

Communication via the serial interface

The ZC1 can be configured through a serial interface (RS232/USB). A rich command set allows detailed configuration of the parameters and operating modes. Further the interface allows direct operating of the valve (shot releasing for single shots and shot sequences).

F	Operating mode	Description
0	Single shot with external pulse (level controlled)	As long as the corresponding signal is high at the input terminal, the valve stays open. Input rising edge: valve open, Input falling edge: valve close
1	Single shot with external trigger (edge-controlled)	With a positive edge at the signal input 1, a single shot of the valve is generated.
2	Shot series with external trigger (edge-controlled)	With a positive edge at the signal input 1, a shot series of the valve is generated.
3	Infinite shot series with external pulse (level-controlled)	As long as the signal input 1 is "high", the valve dispenses with the set frequency and opening time.
4+5	Single shot with external trigger (adjusting the opening time via analog input)	With a positive edge at the digital signal input 1, a single shot of the valve is generated. Before the shot is fired, the current level at the analog input 2 (0-5 V) is processed and the opening time is set accordingly. This allows PLC systems that normally operate in the ms range to have accurate shot control in the µs range.

SYSTEM OVERVIEW

Print Version	Housing Version

General Specifications	Print Version Part-# 23886	Housing Version Part-# 23857
Weight	10 g	95 g
Dimensions	10 x 27 x 82.5 mm	18 x 59 x 95 mm
Mounting	3 x screw M 2.5	Housing prepared for mounting on a 35 mm DIN rail
Connectors	Use Molex type 70066 or Gyger cable sets	0.8 m cable with 9-Pole D-Sub (female) for RS232 and braids with end sleeves for power supply and signals. Valve connector molex 70066
Ambient temperature	0 to 50°C	
Interface	Serial point to point connection (UART) via RS232 (or USB with adapter)	
Approvals	CE	

Specifications for power supply, signal inputs and serial interface (6 pin connector)		
1	Power Supply	+24 V DC ±10%, 0.5 A
2	TXD / RS-232	5 V
3	Input 1 (Digital input)	5 – 24 V DC, Rin 11 kOhm
4	Input 2 (Analog input)	0 – 5 V DC
5	Power Supply 0V / GND	0 V
6	RXD / RS-232	5 V

Specifications of the valve power output (2 pin connector)	
Possible Function	1 Microvalve SMLD or Zitera ZJ6
Power Output	24 V DC, respective clocked for "peak and hold" drive
Current Capacity	1.3 A short time, 0.85 A long term

ℹ **Get started:** downloads.fgyger.ch/zc1

ZC 1 COMPONENTS

Valve controller ZC 1	

The housing and print version of the valve control ZC 1

The connection and extension cables are integrated in the "housing version"; these are only required for the print version.

Both versions require a 24 VDC, 0.5 A power supply!

Product type	Part-#
Print version	**23886**
Housing Version	**23857**

Connection and extension cables	

The connection and extension cables for the print version

The Gyger valve coils with Molex connector can be plugged directly into the print version, if the relatively short coil cable is not sufficient, the extension cable can be used.

Product type	Usage	Length	Part-#
Connection cable	**Connection for the Programming (D-Sub)**	**1m**	**23887**
Extension cable	**Extension cable for connecting 1 micro valve**	**1m**	**24697**

Adapter RS232 to USB	Part-# 18518

Converter RS232 to USB
Includes USB extension cable 0.8m

ⓘ **Other converters can lead to functional problems.**