FWT®
fluid and water technology
Technical Data Sheet   rev.01_0712

MW05
CONTROLLER SERIES
www.fwtsystems.it

FWT di Tommaso Commonara
Via Trilussa 94, Albano Laziale 00041, ITALY
Tel +39 06 9311940 / 06 93895003
Fax +39 06 93160328
commonar@fwtfluidcontrol.it

MAIN FEATURES

- Universal power supply 90÷240 Vac or 9÷24Vdc
- Large custom Backlit LCD custom dispaly
- 2 Set-points ON-OFF with 2 voltage free outputs
- 2 of 4÷20mA programmable proportional outputs
- Galvanic isolation for mA outputs
- 1 of TTL programmable proportional output
- Proportional time / pause output (PWM) to drive On-Off units
- Alarm output relay for HI/LO set-point value or over Dosing Time
- Timer output for sensor cleaning (mainly amperometric Cl_2cells)
- Programmable High/low Hysteresis and delay
- Data logging storage programming
- Extended Menu programming and clock settings
- Level control for dosing tank or remote relay functions
- Proximity switch function (flow control for sensor holder)
- Selection of Chlorine sensors ion selective types
- RS232 port or USB input for PC control (few model exceptions)
- RS485 converter long distance control (few model exceptions)
- GSM connection for alarm signaling via sms messages (few model exceptions)

Measuring parameters

Free (residual) or total chlorine; pH, RX (ORP); Dissolved Oxygen; Hydrogen Peroxide; Conductivity; Turbidity; Chlorine Dioxide; Peracetic acid.

TECHNICAL CHARACTERISTICS

Parameters	PH	Cl$_2$*	RX (ORP)
Range:	0÷14.00 pH	0÷10/20.00* ppm	0÷2000 mV
Resolution[1]:	0,01 pH	0,01 ppm	1 mV
Hysteresis**:	± 0,05 pH	± 0,05 ppm	± 5 mV
Zero[2]:	± 10%	± 20%	± 20%
Gain[3]:	± 25%	-----	-----
Connections:	BNC	wiring terminal	BNC
Input probes:	10^{12}Ohm electrode	Chlorine sensor or amperometric cell	10^{12}Ohm electrode

* Free or Total chlorine: MW05 can either work with membrane sensors CLS (20 or 2 ppm) or open cells CLC series (10 ppm)
** Hysteresis programmable for each set-point

Parameters	CONDUCTIVITY				TURBIDITY	OXY
Range:	0÷200.0mS	0÷20.00mS	0÷2000 µS	0÷200.0 µS	0÷20 or 40 NTU	0÷20.00 mgO$_2$
Resolution[1]:	100 uS	10 uS	1 uS	0,1 uS	± 0,1 NTU	0,01 mgO$_2$
Hysteresis**:	0,5 mS	0.05 mS	5 uS	0,5 uS	± 0,5 NTU	0,05 mgO$_2$
Zero[2]:	± 10%	± 10%	± 10%	± 10%	± 10%	100% O$_2$
Gain[3]:	± 25%	± 25%	± 25%	± 25%	± 20%	-----
Connections:	wiring terminal				wiring terminal	wiring terminal
Input probes:	constant K1	constant K1	constant K5	constant K5	Turbidity cell FWT	Oxygen sensor FWT

1- Display resolution;   2- Zero: potentiometer range from calibration point;   3- Gain calibration: electrode adjustment gain

![FWT logo] **FWT** ®
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PROGRAMMING FUNCTIONS

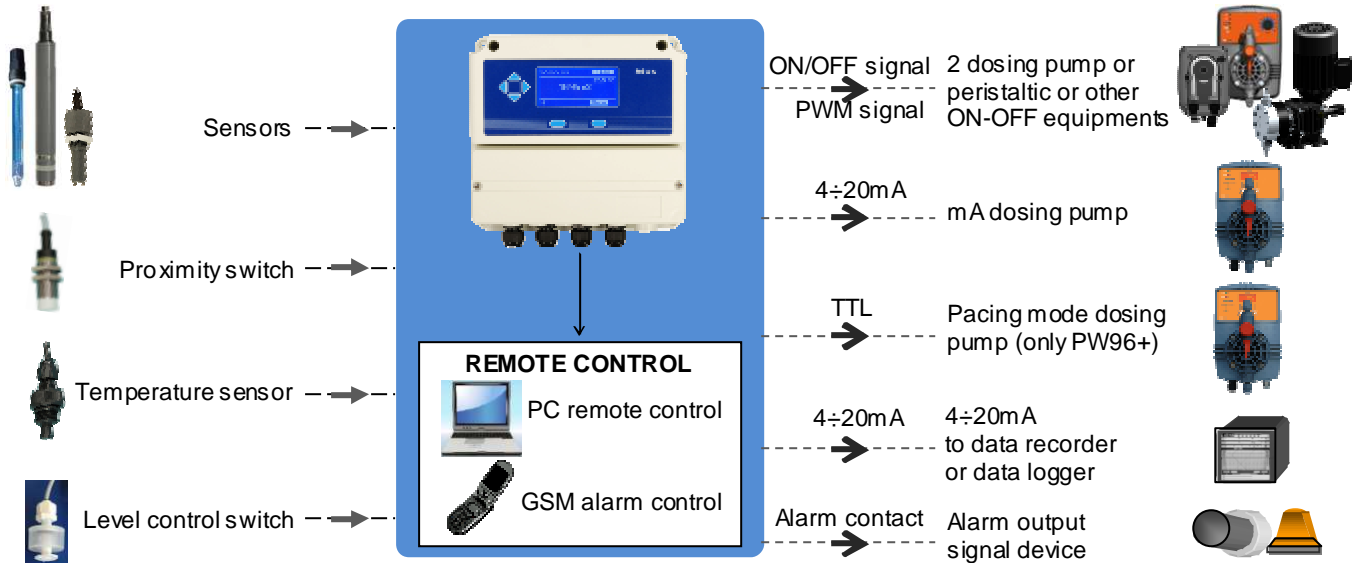|			
Set-Points ON-OFF mode	**Output Relay 1 Output Relay 2 Ouput Alarm**	2 set-points ON-OFF	*Independent setting to activate Constant/ON-OFF mode dosing pumps or other On-Off equipment.*
		Set-point	*adjusts set-point level (ON-OFF mode)*
		Hysteresis	*It selects a measuring range close to set-point level, blocking output relays once reached selected level (ON-OFF mode)*
		Delay	*It selects a delay time (255 seconds adjustable) before activating relay outputs.*
		Alarm High	*It selects maximum Alarm range value (out of this range display Alarm Icon blinks) activating output.*
		Alarm Low	*It selects minimum Alarm range value (out of this range display Alarm Icon blinks) activating output.*
		Reverse	*It selects output relay working direction (adjustable):pH-Alkaline / direct=On-reverse=Off*
mA output signal	**mA1 output**		*It selects measurement value corresponding to minimum and maximum mA output analogical signal. It activates a dosing pump suitable to process a remote mA signal. Programmable on any mA point.*
	mA2 output		*Fixed current signal 4÷20mA. It activates a chart recorder or a Data logger.*
TTL pulses	**Pulse frequency output**		*It selects pH value corresponding to min and max frequency pulse rate, see "system settings" menu. It activates a dosing pumps suitable to give out 1:1 pacing: 1 pulse=1 injection. Pulse output frequency is adjustable.*
PWM mode	**Modular pulses** (time/pause)		*Proportional modular pulses output (time/pause) activating a Constant / ON-OFF mode dosing pumps or other equipment. PWM value according to programmed hysteresis level.*
System Settings	**Fluximeter**		*It activates (ON) or deactivates (OFF) flow switch (proximity switch) input.*
	Auto-temperature		*It activates (ON) or It activates (OFF) automatic temperature probe compensation (only by using FWT temperature sensor probe STEMP2N.*
	Manual temperature		*It selects manual temperature compensation. 0÷100℃ (AutoTemp=OFF)*
	Timeout (over dosing time)		*Allows to select a maximum time in which the system must reach required set-point and blocks relay outputs operations.*
	Level Control		*It sets Level Control signal Normally Open (N.O.) or Normally Closed (N.C. remote control for other external equipment)*
	Time out dosing		*Over dosing time: to reach required set-point within a selected time period adjustable 999min*
	Password		*Password to lock instrument menu*
	TTL frequency		*It selects min and max frequency output signal. Free contact type.*
	Start-up Delay		*Delay time after the start-up; during this period (minutes) the instrument blocks relay outputs.*
	Data logger		*Internal memory allows to record unlimited measurements events, thus saving and export by means of a removable memory card SD. Other data logging option is via RS232 pc remote control records allowing to record and save 3800 measurements events (clear memory function included).*
	RS232 / 485 (except few models)		*Connecting via RS232 port and specific software (on request) enables operator to visualise on pc. RS 485 for long distance connection.*
	GSM connection (except few models)		*Connecting to GSM modem (on request) enables operator to visualise measurements and alarm levels via SMS messages.*

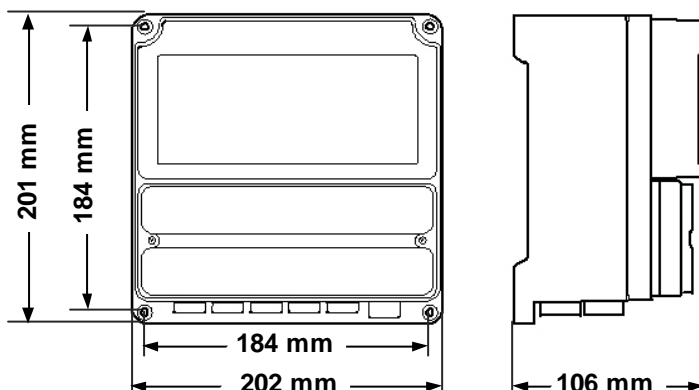**FWT** offers a wide range of electrodes, sensors and accessories to guarantee a complete service.

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MW05 INPUTS / OUTPUTS FUNCTIONS

INPUTS TO CONTROLLER		OUTPUTS TO....

Sensors →

Proximity switch →

Temperature sensor →

Level control switch →

ON/OFF signal → 2 dosing pump or peristaltic or other ON-OFF equipments
PWM signal

4÷20mA → mA dosing pump

REMOTE CONTROL
PC remote control
GSM alarm control

TTL → Pacing mode dosing pump (only PW96+)

4÷20mA → 4÷20mA to data recorder or data logger

Alarm contact → Alarm output signal device

OTHER TECHNICAL CHARACTERISTICS

Microprocessor technology:		SMD components mounting, digital controls keypad 6 key
Linearity, Stability Reproducibility:		± 1% under standard conditions
Display:		back-lit custom display (126x64) resolution ±0,01 mS
Delay:		max 255 sec., delay programmable for each set-point
Input impedance mA output:		Max 400 Ohm / mA outputs with galvanic isolation
Power supply:		Universal power supply 100÷240Vac or 9÷24Vdc
Power consumption - *Nominal current:*		230V=6W - *100mA* / 24Vac-dc=7W - *300mA* / 12Vdc=7W - *500mA*
Fuse		1 fuse 1,6A slow blowing
Temperature setting (Automatic/manual):		Automatic with probe STEMP2-N or manual 0÷100℃
GSM connection		Connection to mobile phone via external modem (on request)
Outputs:	Output RELAY 1	Contact voltage free or Proportional pulses (PWM) 5Amax 230Vac
	Output RELAY 2	Contact voltage free or Proportional pulses (PWM) 5Amax 230Vac
	Alarm Output	Alarm output for external equipment (sound or light signal)
	PWM mode	Time/pause proportioning mode for each set point
	TTL output	Pulse output frequency adjustment, Free contact (voltage free)
	FLUX sensor (proximity)	it blocks output operations in case of no flow into the sensor cell
	Level / Remote relay control	Chemical additive level or Remote control to block relays outputs
	Resistive load / *Inductive load*	Max 5A - 240 V AC / *Max 2A - 240 V AC*
	mA1 output	for mA dosing pump or equipment able to process mA signal
	mA2 output	for recorder or external data logger
Enclosure:	Material – Protection PW96+	Plastic ABS-V0 fire-proof – IP65, with wired connections IP56
	Front controls	Polycarbonate adhesive
	Working temperature	0÷50 ℃

201 mm
184 mm
184 mm
202 mm
106 mm

MW05
DIMENSIONS

Net weight: **1,15 kg**
Gross weight: **1,55 kg**