

TensioController

A sensor-guided irrigation controller for any combination of sensors and valves, with pump activation/control, irrigation start according to sensor and timing, irrigation duration according to time and flow rate, alarms issued at limit values, operate via touch screen and/or remote maintenance via PC or smartphone.

Designs:

Base unit (CPU) + sensor or extension modules in compact housing (small unit) or in corresponding electrical cabinet (various versions) in rail/terminal mounting for cable connections; 24 VDC operations, mains supply.

Configurations:

Multiple combinations, practical small unit: Base unit (CPU) with 8 outputs + 1 module with 6 sensor inputs (partial assignment is also possible). Largest unit: Base unit +14 modules with 120 valve outputs and 48 analogue sensors + additional connections (pump controllers, etc.).

Usage:

Device can be operated using a touch screen, standard size 4.3" (11 cm) or recommended size 7" (18 cm), which is in the housing cover. The easiest remote control method is using a VNC viewer (PC or smartphone) for internet access (VPN) to the router to which the Tensio-Controller is connected (Ethernet). The screen contains the display and operating software. The screen server enables it to be shared remotely.

TECHNICAL SPECIFICATIONS:

Screen:	resistive LCD display TFT
Power supply for modules:	Switched-mode power supply 24 VDC
Power supply for sensors:	separate switched-mode power supply 24 or 12 VDC
Output solenoid valves:	potential-free – DC or AC / power supply unit or transformer 24 V max. 24 per module + 16 with extension module
Supply for solenoid valves:	Power supply unit or 24-V transformer
Sensor inputs:	max. 6 per module
Sensor signals:	5 V, 10 V, 4 – 20 mA
Flow measurement:	1 counter input with reed contact
Pump control:	max. 16 pumps via switching output, optionally + relay
Frost monitoring:	1 thermostat input



Control variables:

Irrigation can be controlled according to the time, soil moisture and irradiation, either individually or in combination, depending on the particular sensor configuration. Analogue tensiometers with E-sensors or volume sensors can be used as the sensors for soil moisture.

Software:

Groups of sensors and valves in 16 sectors, with from 1 to 3 sensors each + max. 8 valves + pump controller, arranged in any configuration. When there are several sensors per sector, the measured value is averaged. Valves and sectors can be operated in serially or in parallel. The irrigation runs according to sensor set-point + time and pause settings. Display with irrigation history, active valve and current measured values. Special task: thermostat-controlled blow-out for pipes during winter irrigation; also suitable for preventing blockages during drip irrigation.

Monitoring:

Limit values for the humidity and pressure for controlling pumps, and for local alarms (individual signal transmitters) or via remote e-mail alarms. Monitoring the irrigation results using measured value monitoring with hysteresis and time settings.

Logging of measured values, irrigation or alarm dates enables extended monitoring functionality; log file can be saved to USB flash drive at the rear of the screen.

Planning specifications for TensioController:

- Number of solenoid valves?
- Power connection?
- IT connection (router)?
- Type of irrigation / water distribution?
- Pump controller for irrigation?
- How should the pumps be switched?
- Type of crop cultivation method?
- Size of the cultivated area, outside or in greenhouse?
- Number of sensors required?

