miniPond 3C Checkweighing Controller

approved for automatic weight check

The **miniPond 3C** weighing controller provides the necessary functions **for trade-approved weight determination in automatic checkweighers**. The high internal resolution, speed and signal filtering ensure fast and accurate measurements. With the registration of the product weight, it is assigned to one of five tolerance zones.

The versatile miniPond 3C controller can be used stand-alone or networked and can be customized to the specific task at hand through parameter settings. Clear, application-oriented menus and dialogs allow intuitive operation. The integrated web server and effective diagnostic tools facilitate commissioning, parameterization, remote access and remote maintenance via a network. In addition, full access to functions, parameters and data is available via the Modbus interface or the optional fieldbus.

Features

- Evaluation electronics for strain gauge load cells
- Fast, precise signal processing and weight measurement with digital stabilization filters
- High internal measurement resolution and stability
- High operational reliability due to comprehensive monitoring functions
- Diagnostic tools and support for commissioning, optimization and troubleshooting
- User-friendly display of weight and status data with tolerance class
- Plain-text operator guidance in 5 languages
- Durable design for industrial use

Configuration and operation

- Local operator terminal
- Fieldbus and other interfaces
- Web server for parameter input and backup, data exchange, firmware download, remote terminal and weighing curve analysis

Functions

- Automatic weight registration with stability detection and tolerance evaluation in 5 zones
- Memory for 100 articles / parameter sets
- Weighing start via position sensor / control signal or via weight threshold
- Tare by means of weighing or parameter entry
- Process control functions can be assigned to the configurable digital I/Os (e.g. tolerance signaling or product rejection in case of under/overweight)
- Fault monitoring with alarm and logging
- Totalizer and counter
- Logging of the actual weights
- Statistics function

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Measurement technology
- 24-bit A/D converter, conversion rate: 110 Hz
- Input signal range: up to 2 or up to 4 mV/V (selectable)
- Load cell excitation: 5 VDC for strain gauge load cells, max. 4 x 350Ω
- Displayed weight resolution: max. 200,000d (6,000d approved for verification)
- Configurable weighing range, also as multi-range or multi-interval scale, 2 ranges
- Signal sensitivity: 0.5 µV/e (approved for verific.)
- Multi-stage, parameterizable digital filters for suppression of vibrations on the weighing system, coupled with efficient evaluation algorithms
- Automatic stability detection of the weight values
- Adjustment with test weights or mathematically by entering the load cell parameters

Approved weighing modes
- Automatic catchweighing / Automatic checkweighing: Weight registration with stability criterion

Data collection / Statistics
- Actual-weight logging
- Totals memory
- Product statistics
- Weighing curve in real time
- Error logbook
- Data is retained in the event of power loss

Connectivity / Networking
- Ethernet TCP/IP
- Serial COM port (RS-422/485 or RS-232)
- Modbus (TCP and RTU)
- Web interface
- WebSocket (RFC6455)
- Optional fieldbus: Profibus DP or Profinet, further protocols on request

Digital I/Os
- 8 inputs / 8 outputs, 0.4 A short-circuit proof
- 24 VDC, galvanically connected
- Configurable function or assignment

Power supply
- 24 VDC 3.5 W (with display unit and 4 load cells)

Display / Keypad
- Graphic LCD display, LED-backlit
- Weight display with 20 mm digit height
- 9 keys, 4 of which are context-related multiple-function soft keys
- Plain-text dialog guidance in 5 languages (DE, EN, FR, IT, ES), plus 1 additional language freely definable via language file
- Clear display of weight and status data with the corresponding tolerance class
- Copy function for parameter sets simplifies data entry
- 3 operating levels with password protection

Mounting variants
- Main unit can be mounted inside a control cabinet on DIN rail (flat or upright) or mounting plate, display unit separately e.g. on operator station, or
- On the cabinet's door or front panel: main unit inside behind the display unit (panel mount kit)
- No cut-out necessary on the door/front panel. Template provided for drilling only 7 holes.

Environmental conditions
- -10 … +40 °C (for legal-for-trade applications)
- -10 … +60 °C (for non-legal-for-trade use)
- -20 … +70 °C (storage and transport)
- 0 … 90 % rel. humidity (non-condensing)

Housing
- Control unit: zinc-plated steel; IP20 168 x 140 x 52 mm; 0.7 kg
- Operator terminal: ABS; IP65 (when mounted) 170 x 130 x 18 mm; 0.2 kg

Approvals
The instruments are tested and certified by the National Metrology Institute of Germany (PTB) and approved for official verification in all EU countries.
- 2014/31/EU (NAWID) to OIML R76: Accuracy Class III 10,000e and Class IIII 1,000e
- 2014/32/EU (MID) to OIML R51: Accuracy Class XIII(1) 6,000e
- 2014/34/EU (ATEX) Zone 22 (operator terminal)

- ISO 9001:2015 QM System and CE conformity

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