miniPond 3P Multifunctional Process Weighing Controller

Approved automatic module for use in process automation

The **miniPond 3P** controller provides the necessary functions **for trade-approved weight measurement, dosing and totalization** for automatic weighing scales in industrial processes.

The integrated time-optimized dosing process enables a more precise and faster mode of operation compared to concepts which carry out the switch-off in the higher-level control system.

The versatile miniPond 3P is suitable for a wide range of applications and can be customized to the specific task at hand and different filling goods with parameter settings. Clear, application-oriented dialogues and messages 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 all parameters and data is available via the Modbus interface or the optional fieldbus.

Features

- Evaluation electronics for strain gauge load cells
- High internal measurement resolution and stability
- Fast and precise control of the dosing process powered by long-proven algorithms
- High operational reliability due to comprehensive monitoring functions
- Diagnostic tools and support for commissioning, optimization and troubleshooting
- User-friendly weight and status display
- Plain-text operator guidance in 5 languages
- Rugged, industry-oriented design

Configuration and operation

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

Functions

- Configurable operating modes:
  Automatic catchweighing,
  Automatic gravimetric filling and dosing,
  Automatic discontinuous totalizing
- Weight registration with stability criterion
- Two-stage dosing: coarse and fine
- Dosing in filling and dispensing mode
- Automatic zero setting or taring
- Automatic free-fall compensation: proportional control with quick adaptation
- Automatic checkweighing with tolerance evaluation
- Totalization
- 1 additional set point, freely configurable
- Fault monitoring with alarm and logging
- Totals memory and counter
- Actual-weight and filling-data logging
- Integrated alibi memory

Technical Data miniPond 3P Process Weighing Controller

Measurement & control technology

- 24-bit A/D converter, conversion rate: 110 Hz
- Input signal range: up to 2 / up to 4 mV/V (select.)
- Load cell excitation: 5 VDC
  for strain gauge load cells, max. 4 x 350Ω
- Displayed weight resolution: max. 200,000d
  (10,000d approved use)
- Configurable weighing range, also as multi-range
  or multi-interval scale, 2 ranges
- Signal sensitivity: 0.5 µV/e (approved)
- Switch-off accuracy better than 1 ms due to
  optimized signal processing
- Multi-stage, parameterizable digital filter for
  suppression of vibrations on the scale and in
  its vicinity
- Adjustment with test weights or mathemati-
  cally by entering the load cell parameters

Approved weighing modes

- Automatic catchweighing:
  Weight registration with stability criterion
- Automatic gravimetric filling and dosing:
  Filling in containers/packs/bags
- Automatic discontinuous totalizer:
  Totalizing Bulk Scale

Data collection / Statistics

- Actual-weight logging
- Approved totals memory
- Alibi memory for traceability
- Filling data recording for diagnosis
- Filling 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 or EtherNet/IP,
  further protocols on request

Digital I/Os

- 8 inputs / 8 outputs, 0.4 A short-circuit proof
- 24 VDC, galvanically connected

Display / Keypad / Operation

- 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 dialogue guidance in 5 languages (DE,
  EN, FR, IT, ES), plus 1 additional language freely
  definable via language file
- Clear process data and status display
- 3 operating levels with password protection

Mounting variants

- Main unit can be mounted inside a control
  cabinet on DIN rail (flat or upright) or on a
  mounting plate with separate display unit, or
- On the cabinet's door or front panel: directly
  behind the display unit (panel mount)
- Display unit can be mounted on the door/ front
  panel without a cut-out. Template provided for
  drilling only 7 holes.

Power supply

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

Environmental conditions

- -10 … +40 °C (approved use)
- -10 … +60 °C (non-approved use)
- 0 … 90 % rel. humidity (non-condensing)

Housing

- Control unit: metal; IP20
  168 x 140 x 52 mm; 0.7 kg
- Display unit: ABS; IP65 (when mounted)
  170 x 130 x 18 mm; 0.2 kg

Approvals

- 2014/31/EU (NAWI) to OIML R76:
  Class III/IIII 10,000 e
- 2014/32/EU (MID) to OIML R61, OIML R51,
                       OIML R107
- 2014/34/EU (ATEX) Zone 22

- ISO 9001 QM System and C€ Conformity

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