

EasyClean 350 e

Technical Data

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Control unit



Valve unit

METTLER TOLEDO

EasyClean 350 e – fully automated cleaning and calibration system



EasyClean 350 e installed with the new METTLER TOLEDO transmitter pH 2100 e results in totally automated maintenance for the entire loop. EasyClean 350 e and the transmitter 2100 e have been developed in parallel in order to achieve maximum performance without any compromises. Intelligent communication between the cleaning system and the transmitter provide safe operation. Separate alarm relays indicate malfunctions in the transmitter or in the EasyClean itself.

Two different timers (adjustable on the transmitter) allow the cleaning interval to be set independently from the calibration interval. The EasyClean 350 e can also be easily integrated into a distributed control system (DCS). Additional parameter offers a high flexibility and allows individual adaption for many processes. See list below and for more details refer the working instruction.

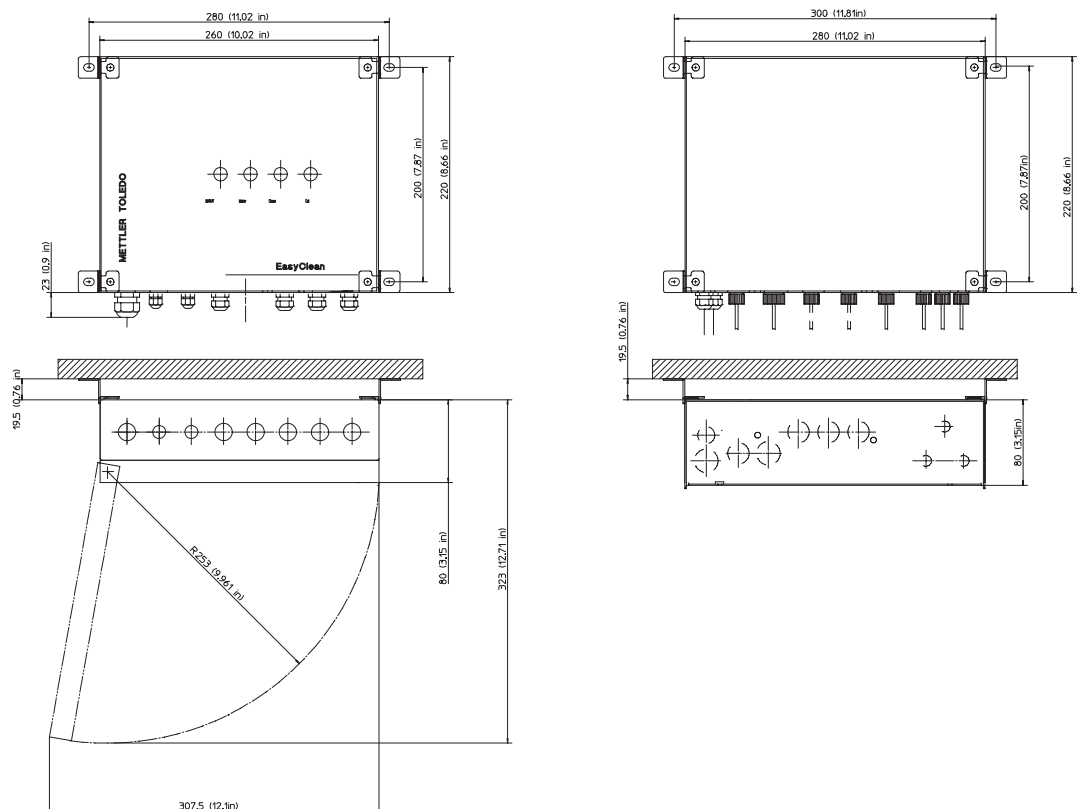
Parameters

| Description | Variable | Limits | Default * |
|--|----------|----------------|-----------|
| Hold extension | T1 | 0 ... 2 min. | 20 sec. |
| Rinse time | T2 | 0 ... 2 min. | 1 min. |
| Residence time for cleaning | T3 | 0 ... 5 min. | 1 min. |
| Calibration delay | T4 | 0 ... 3 min. | 2 min. |
| Transport time cleaning agent | C3 | 10 ... 60 sec. | 30 sec. |
| Transport time buffer | C4 | 10 ... 60 sec. | 30 sec. |
| Transport time intermediate cycle (time) | C5 | 4 ... 8 sec. | 4 sec. |

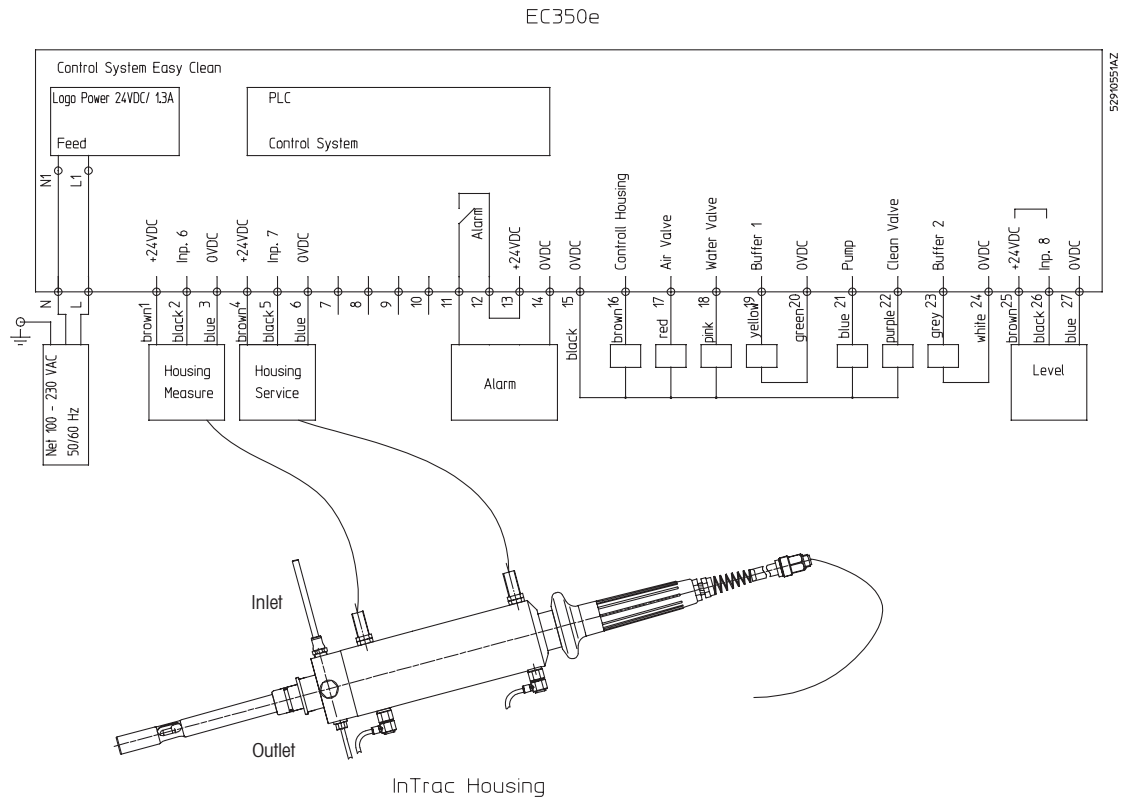
* Default values are factory settings for typical installation (hose length valve unit – housing, 5 m).

Dimensions of the EasyClean 350 e

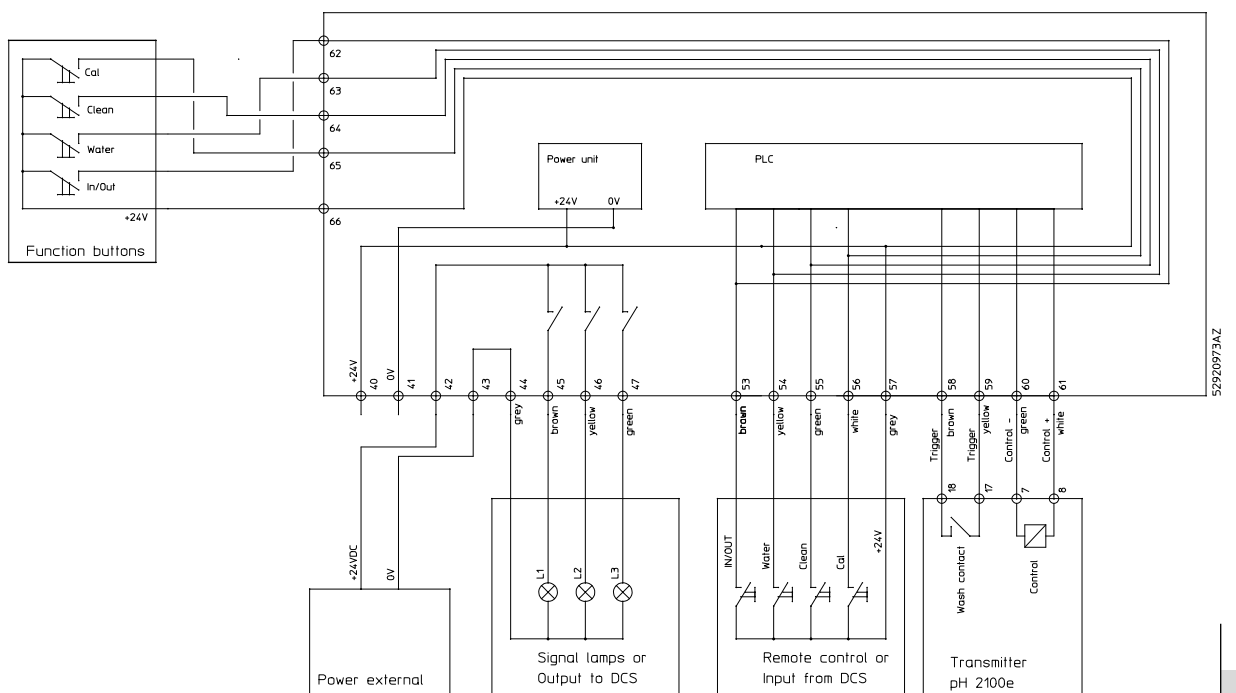
For the exact dimensions relative to pipe/post or wall mounting, please refer to the specifications section at the end of this documentation.



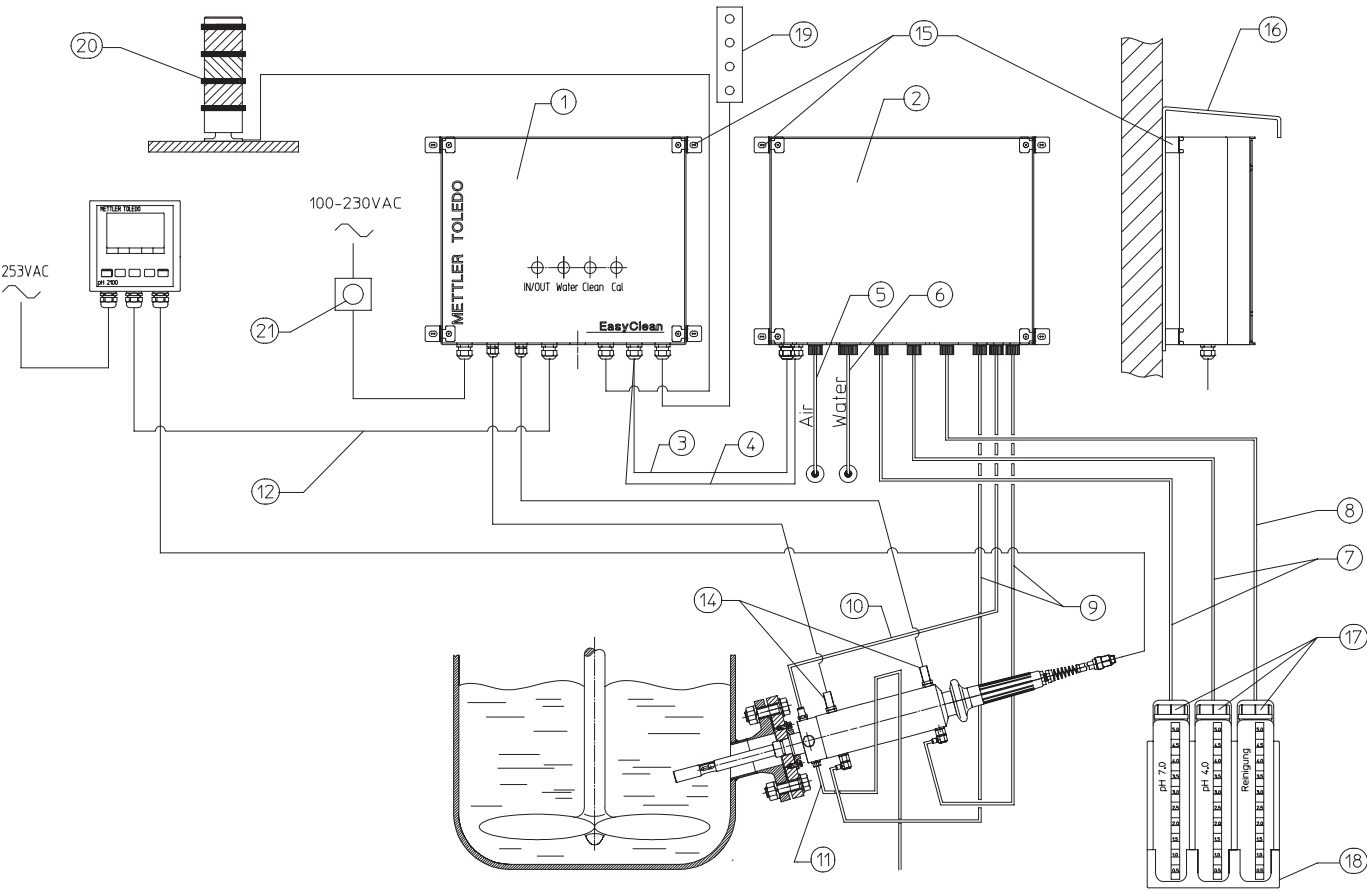
Electrical connections with valve unit and housing



EasyClean 350 e automatic print with transmitter pH 2100 e



System configuration and ordering information for EasyClean 350 e

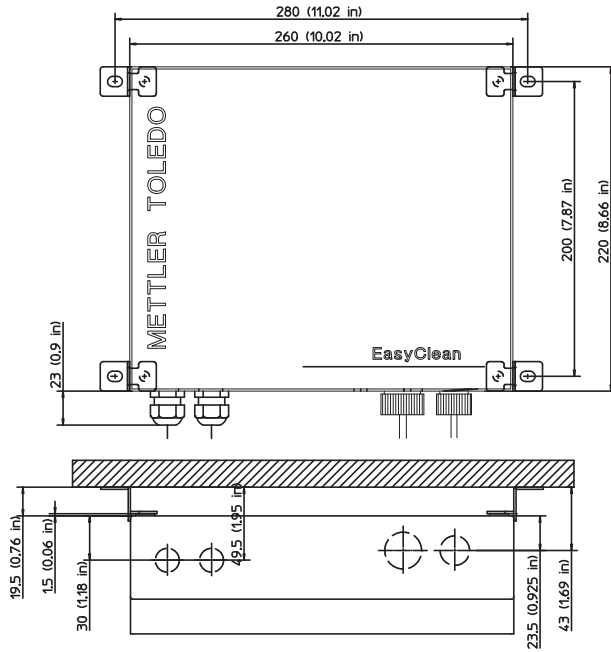


Deliverables EasyClean 350 e

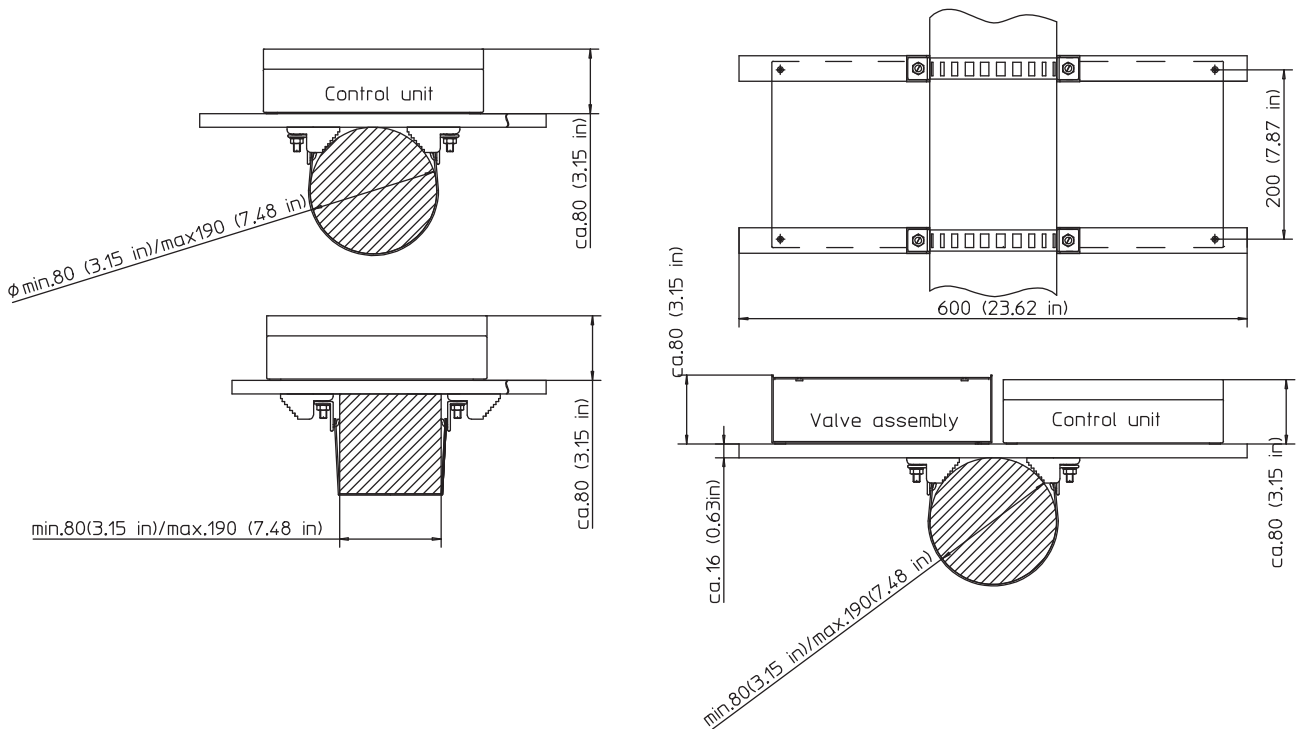
The EasyClean 350 e delivery consists of the following:

| N° | Designation | Order N° |
|---|---|-----------------|
| | EasyClean 350 e | 52 403 527 |
| 1 | Control unit with integrated PLC (programmable logic controller) | |
| 2 | Valve unit with valves for hydraulics and control air | |
| 3 | Connecting cable: control unit → valve unit, length 1.5 m (4.9 ft) | |
| 5/9 | Pressured air connection: ∅ 6/4 mm, hose for compressed air connection LDPE (20 m/65.6 ft) | |
| 6 | Water connection: G 1/4" female or 1/4" NPT male | |
| 7 | 2× connecting hose: ∅ 6/4 mm, length 2 m (6.6 ft), material LDPE → control unit → buffer reservoir(s) | |
| 8 | 1× connecting hose: ∅ 6/4 mm, length 2 m (6.6 ft), material PTFE → valve unit → cleaning medium | |
| Accessories and spare parts (to be ordered separately) | | |
| 9/5 | Hose for compressed air connection LDPE (20 m/65.6 ft) | 52 402 314 |
| 8/10 | Tubing PTFE 6/4 mm, length 10 m (32.8 ft) | 52 402 283 |
| 11 | Drainwater hose: ∅ 6/4 mm or ∅ 8 mm, material LDPE → hose: InTrac → drain | |
| 12 | Connection cable: control unit → transmitter (5 m/16.4 ft) | 52 300 265 |
| 12 | Connection cable: control unit → transmitter (10 m/32.8 ft) | 52 300 266 |
| 14 | Inductive check-back | 52 403 024 |
| 15 | Wall mounting kit, complete | 52 402 306 |
| 16 | Weatherproof hood | 52 402 316 |
| 17 | Compact canister, 5 000 ml/empty | 52 118 063 |
| 18 | Canister rack for 3 compact canisters | 52 402 348 |
| 19 | Remote control | 52 402 355 |
| 20 | Warning light | 52 402 351 |
| 21 | Panic button (emergency shutdown) | 52 402 317 |
| — | Flow sensor EasyClean 350 e (into valve unit to check fluid level) | 52 403 535 |
| — | Pipe/post mounting kit, complete | 52 402 308 |
| — | Instruction manual EasyClean 350 e (g/e/f) | 52 500 194 |
| — | Diaphragm pump | 52 403 536 |
| — | Spare part kit pump | 52 403 592 |
| — | Water/air/buffer valve | 52 403 531 |
| — | Cleaning agent valve | 52 403 530 |
| — | Fitting set EasyClean 350 e | 52 403 593 |

Wall mounting of EasyClean 350 e



Pipe/post mounting of EasyClean 350 e



| EasyClean 350 e | |
|----------------------------------|--|
| Housing | Steel housing, powder-coated with polyester resin Material: mild steel DIN 1.1203 Ck55 → Attention: housing may not be cleaned with solvents containing acetone! |
| Weight | Control unit: approx. 3.0 kg (6.6 lbs) Valve unit: approx. 2.5 kg (5.5 lbs) |
| Protection rating | IP 65 |
| Ambient conditions | Temp. in operation: 0 ... +45 °C (+32 ... +131 °F) Temp. transportation/storage: -10 ... +70 °C (+14 ... +158 °F) Degree of pollution: 2 Overvoltage category: III |
| Power supply | 100–230 V AC, 50/60 Hz, 0.18–0.3 A (± 15 %) |
| System control | Program call: – via two intervals (Clean and Cal) of the transmitter – manually via control buttons – via distributed control system (DCS) |
| Control inputs | Transmitter: 1 control input for wash contact (trigger) of the transmitter, 24 V. Via DCS: 4 control inputs (for remote control) can be used. Signal duration: 1 second. Potential free contacts on the DCS required. |
| Control outputs | Transmitter: 1 HOLD output (control) for external hold relays in the transmitter, 24 V. To DCS: 3 control outputs (for signal lamps) can be used. Powered internal (24 VDC) or external (< 230 VAC). |
| Transmitter | METTLER TOLEDO transmitter pH 2100 e, 4-wire |
| Electrical connections | Terminal strip 0.08 ... 1.5 mm ² |
| Connection to valve unit | 10-wire control cable, 10 × 0.5 mm ² Cable length: 1.5 m/4.9 ft (standard) 20 m/65.6 ft (optional) |
| Connection to transmitter | 4-wire control cable, 4 × 0.5 mm ² Cable length: 5 m/16.4 ft (optional 10 m/32.8 ft) |
| Cable ducts | ∅ 3.5–10 mm → M 16 ∅ 2.5–6.5 mm → M 12 |
| Compressed air supply | 4–8 bar (400–800 kPa, 58–116 psi) Air quality according to ISO 8573-1 Moisture class 4 (water dew point +3 °C/+37.4 °F) Particles class 5 (filter 40 µm) Max. oil content class 2 (0.1 mg/m ³) Connection: thread G ¹ / ₈ " |

| EasyClean 350 e | | |
|--|------------------------------------|---|
| Connection to retractable housing | Pneumatic: | LDPE hose Ø 6/4 mm (1/4"/1/8") (control air) |
| | Medium: | PTFE hose Ø 6/4 mm (1/4"/1/8") Hose length typ. 5 m (16.4 ft) Hose length max. 10 m (32.8 ft) |
| Flushing water supply | Pressure : | 2 ... 8 bar (200 ... 800 kPa), 29 ... 116 psi |
| | Particle filter : | 50 µm |
| | Volume : | ≥ 4 l/min |
| | Connection : | Thread G 1/4" female |
| | Adapter: | 1/4" NPT male (PP) |
| Pump | Pump height: | max. 5 m (16.4 ft) |
| | Suction height: | max. 3 m (9.8 ft) |
| | Feed rate: | 3–5 ml/s (depending on hose length and viscosity) |
| | Materials: | – PPS (pump body) – EPDM (membrane and sealings) |
| | Connection: | Thread G 1/8" female, polymer (PP) |
| Viscosity | All liquids 25 mPa s/25 °C (77 °F) | |
| Wetted materials | Materials in contact with: | |
| | – Rinsing water: | PP, EPDM, PTFE, PPS, Ni |
| | – Compressed air: | PP, EPDM, PTFE, PPS, LDPU, Ni |
| | – Buffers: | PP, EPDM, PTFE, PPS, LDPU |
| | – Cleaning agents: | PP, FFKM, PPS, PTFE, EPDM, PEEK |
| Liquid temperatures | Water: | 0 ... 80 °C, 95 °C max. 10 min/h (32 ... 176 °F, 203 °F max. 10 min/h) |
| | Buffers: | 0 ... 50 °C (32 ... 122 °F) |
| | Cleaning agents: | 0 ... 50 °C (32 ... 122 °F) |
| Conformity | Low voltage guidelines | |
| | • EC guidelines | 73/23/EG |
| | • Swiss guideline | SR734.26 NEV |
| | • Safety guidelines | EN61010-1 |
| | • IP protection rating | EN60529 IP65 |
| | EMC Guidelines | |
| | • Emission | EN61326-1, class B |
| | • Harmonics | EN61000-3-2 |
| | • Voltage deviations | EN61000-3-3 |
| | • Immunity | EN61326-1 |
| Certificates | | |
| • CE, CSA c us, GS | | |

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