Tender specification
Electrode steam humidifier **FlexLine E - TPRO**

Ready-to-connect compact steam humidifier for fully automatic and intrinsically safe generation of mineral-free, odourless and sterile steam for air-conditioning and production technology applications. Steam output 15-65 kg/h as individual device. Installation and maintenance friendly design, for wall mounting. Easy to mount with all commercially available mounting rail systems, manufacturer-specific systems are not required. Completely stainless steel cabinet for optimum handling additionally powder-coated with lockable stainless steel cover and separate areas for steam generation and electrics.
With VDE and GS certification; CE- and EAC-compliant. Developed and produced in Germany.
For direct connection to all standard tap water mains. No water treatment necessary.

Powerful control electronics for fastest possible steam delivery with optimal energy utilisation and low maintenance operating mode. Comprehensive operational reliability through continuous self-monitoring of all device functions. The control processes all common signals and is modularly extendible.

Standard equipment:

- Graphic capacitive 3.5 " touchscreen with simple menu structure for intuitive operation and clearly laid out display of all operating and service messages in plain text mode and as icons
- Separable plastic cylinder, cleanable without using chemicals, re-usable and with especially long service life: the PP/GF composite material with exceptional wall thickness provides increased heat insulation and especially high wear resistance to mechanical loads during cleaning. For ecological and economic reasons neither disposable steam cylinders nor cylinders without fibre reinforcement are used
- For especially long service lives, only large solid electrodes are used; standard solid stainless steel material, quickly replaceable without the need for tools. Dependent on conductivity of feed water, optimised solid material geometries are possible (no perforated plates or grids)
- Integrated stand-alone electro-mechanical circuit breaker for the highest standards of safety: The units are equipped with certified, discrete and software-independent components and as verification of the highest standard of intrinsic safety are tested and certified by an independent body in compliance with the current product safety legislation of 17/03/2016 based on the low voltage directive (2014/35/EU)
- TPRO expansion board and second ring transducer for separate control of both power circuits
- Powerful blow-down pump to extend service lives through pumping out scale deposits and hardeners
- Good component accessibility from three sides facilitated by unit's removable cover
- Roomy electric compartment
- Assembly materials
- Freely programmable overload protected digital input; amongst others load dumps or limited power decreases for reduction of power surges are consequently easily achieved

Performance characteristics:

- Automatic system test incl. power-up diagnosis to check all functions and device components
- Load-dependent and/or time-based service interval display
- Support of preventative maintenance by maintenance-required messaging in good time BEFORE the occurrence of a possible malfunction by means of selective component monitoring with three service messages
- Integrated PI controller for top control quality
- Variable maximum humidity limitation for improved control in case of input air humidity
- Continuous or single-stage control selectable
- 2 analogue inputs for processing up to 2 identical control signals
- Analogue output 0-10 V for simultaneous use of several devices
- The selectable operating modes "energy optimised", "load optimised" and "quick control" allow easy adaptation to differing supply networks
- Blow-down performance individually adjustable via touchscreen

- Individual adjustment to the respective water quality
- Wide-range control (alternating algorithm) of the electrodes for proportional controllability in the range of 2.5-100% of the rated power (0-100% possible)
- Guarantee of even wear
- Additional ring transducer for monitoring both power circuits
- Stand-by blow-down to prevent stationary cylinder water according to VDI 6022
- DVGW compliant flushing of dead-end line to prevent tap water stagnation
- Standby heating for quick steam production
- Integrated galvanically isolated serial interface RS-485 (EIA-485)
- Integrated communication protocol Modbus RTU and BACnet MS/TP
- 2 potential-free relay signal functions; one of them freely parametrisable from 53 functions (factory preset: operating message and collective fault)

Optional:

- Cylinder flushing system for significant extension of the service lives of cylinders by means of increased discharging of screenable scale deposits or hardeners
- Preventive device type AB in accordance with DIN EN 1717 for potable water protection, allows a local backflow preventer to be dispensed with
- Galvanised electrodes for optimised service lives of electrodes where the chloride content of the feed water is high
- Integrated waste water cooling to limit waste water temperature to max. 60 °C, when using PVC waste water pipes or pumping equipment
- Up to 8 additional relay signal functions freely parametrisable from 53 functions, for optimum integration in superordinate building technology
- Operation with demineralised water for significantly longer cylinder service life thanks to a patented process
- Water level sensor to prevent power drops and additional wear caused by cylinder full signals triggered by salt bridges or foaming water
- External 3.5" touch display as a surface-mounted version in its own housing