



Product Catalog

Sensors Fittings Accessories

Knick 



Unical® 9000

Unical® 9000 (X) is a fully automatic pH/ORP measuring system. It allows highly accurate measurements to be taken even under difficult process conditions such as high pressure, high temperatures, and high levels of impurities.

The Unical® can be installed directly in the process within the hazardous location. It is controlled by the Protos® 3400 (X) measuring system or directly via SPC.

Maintenance work reduced to a minimum.

Fully automatic electrode calibration in user-defined intervals without interrupting the process. Two buffer solutions are automatically pumped into the calibration chamber. You just have to refill the buffer bottles.

Long electrode life even in critical processes.

When measuring in aggressive process media or at high process temperatures, the electrode rests in the calibration chamber and is only briefly moved into the process for measurement. This method decisively increases the electrode life.

Safe and easy measurement even in strongly polluted media.

Electrode cleaning and rinsing is performed in user-defined intervals.

Cleaning solution and water are automatically pumped into the calibration chamber. Dismounting and manual cleaning of the electrode are not necessary.

Calibration without disrupting the process, even when measuring directly in the pressure tank.

Since the electrode is not dismounted for calibration, the process can continue uninterrupted.

This allows problem-free measurements in a pressure tank or in the main pipe. Costly by-passes are omitted, measurement accuracy is increased.

Check of electrode data in the running process.

The electrode data can be determined and recorded while the process is running by using the tolerance band recorder in the Protos® 3400 measuring system. Calibration is only carried out when pre-set deviations are detected. Constant displacement of the measured values due to small calibration scatters is omitted.

PROFIBUS PA.

Thanks to the PROFIBUS PA interface the Unical® system can be directly integrated into PROFIBUS networks.

Universal adaptation to retractable probes.

The modular structure of the Unical® allows any retractable probes to be used. An optimum of functionality can be achieved by the use of Ceramat® WA 150 remote calibration probe.



Warranty

Defects occurring within 1 year from delivery date shall be remedied free of charge at our works (carriage and insurance paid by sender).

The facts

- Consistent enclosure design
- Modular system, can be adapted to almost every measurement task
- Easy assembly and retrofitting
- Hygienic design (polished stainless steel)
- High security by means of signaling actual probe position (Service)
- No mixing of process media thanks to separate guiding of the liquids
- Low maintenance effort due to innovative pump technology and extremely low consumption of process medium
- Automatic 2-point calibration
- Time-controlled cleaning and checking
- Cleaning with water and additional cleaning solution
- Hardly any maintenance work due to automatic calibration
- No interruptions in production for calibration
- Operation in hazardous area, Zone 1 (all system components)
- Measurement directly in the pressure tank, bypass line not required
- Increased control accuracy due to measurement in main flow
- Longer electrode life due to short-time measurement and regular cleaning
- Remote control using SPC or PCS
- Small dimensions permit operation in areas which are difficult to access
- Immediate readiness for measurement after production stop due to safe storage of electrode in liquid
- Safety ensured by monitoring of the compressed air and water supply, the probe position and the buffer solution level



Specifications

Compressed air	Free of oil and condensate
Adm. pressure range	4 ... 7 bars
Pressure monitoring	Automatic monitoring, signaling
Connection	1/4" internal thread
Rinsing water	Filtered 100 µm
Adm. pressure range	2 ... 6 bars
Temperature range	5 ... 65 °C
Pressure monitoring	Automatic monitoring, signaling
Connection	1/4" internal thread and 3/4 " external thread (for coupling)
Pump (optional)	For buffer solution / cleaning liquid
Number of bottles	Max. 3
Bottle volume	4 L
Max. lifting height	10 m
Displaced volume	25 cm ³ /stroke
Level monitoring	Continual, signaling
Material	PP, PE, EPDM, nonreturn valves: glass, FPM, HC4
Dimensions	150 mm x 150 mm x 340 mm with 4 L bottle
Weight	Approx. 1.5 kg (pump with 4 L bottle)
Supply	Supply by means of Protos® PHU module
(EEx ia IIC)	$V_i = 8.5 \text{ V}$ $I_i = 200 \text{ mA}$ $P_i = 400 \text{ mW}$ 6.8 V (± 10 %) / 15 mA
Connection	Terminals, wire cross section max 2.5 mm ² (preassembled connecting cable to Protos® 3400)
RS 485	Communication with Protos® PHU module or external host computer (e.g. PCS/SPC)
(EEx ia)	$V_i/V_o = 5 \text{ V}$ $I_i/I_o = 250 \text{ mA}$ $R_i = 20 \text{ Ohms}$
Transmission	1200 Bauds / 8 data bits / 1 stop bit / No parity
Securing	CRC16
Connection	Terminals, wire cross section max 2.5 mm ² (preassembled connecting cable to Protos® 3400) length max. 10 m
Adapter to process medium	Approx. 2 kg
Service switch	Wall or pipe/post mounting (Ø 30 ... 65 mm) cable length → Unical® 9000: 5 m (optional 10 m)

Specifications

PCS input M/S (EEx ia IIC)	Measurement/Service $V_i = 30$ V, floating, galvanic isolation up to 60 V
Switching voltage	0 ... 2 V AC/DC inactive (measurement) 10 ... 30 V AC/DC active (Service)
Connection	Terminals, wire cross section max 2.5 mm ²
PCS input A/M (EEx ia IIC)	Automatic locked $V_i = 30$ V, floating, galvanic isolation up to 60 V
Switching voltage	0 ... 2 V AC/DC inactive (automatic intervals enabled) 10 ... 30 V AC/DC active (automatic intervals locked)
Connection	Terminals, wire cross section max 2.5 mm ²
PCS inputs PRG1 ... 3 (EEx ia IIC)	Program selection 1 ... 8 $V_i = 30$ V, floating, interconnected galvanic isolation up to 60 V
Switching voltage	0 ... 2 V AC/DC inactive 10 ... 30 V AC/DC active
Connection	Terminals, wire cross section max 2.5 mm ²
PCS outputs ML1 ... 3 (EEx ia IIC)	Checkback: Service, measurement, program electronic switching contacts, floating, interconnected $V_i = 30$ V $I_i = 100$ mA $P_i = 800$ mW, galvanic isolation up to 60 V
Voltage drop	< 1.2 V
Connection	Terminals, wire cross section max 2.5 mm ²
Explosion protection	II 2(1) G EEx ia IIC T4
EMC	EN 61326 EN 61326/A1
Lightning protection	EN 61000-4-5, Installation class 2
Protection against electrical shock	To EN 61010
Ambient conditions Ambient temperature	+2 ... +55 °C (Ex: +2 ... +50 °C) (other temperature range on request)
Transport/Storage temp	-20 ... +70 °C
Relative humidity	10 ... 95 %, not condensing
Enclosure	Unical® 9000 (X) S stainless steel A2, polished Unical® 9000 (X) C stainless steel A2, coated, color: pidgeon blue
Assembly	Wall mounting Pipe/post mounting Δ 30 ... 65 mm, 30 ... 50 mm Weld-on bracket for hygienic wall/pipe mounting
Dimensions	W x H x D approx. 320 mm x 400 mm x 120 mm
Ingress protection	IP 65/NEMA 4X
Cable glands	6 M 20x1.5 cable glands breakthroughs for NPT 1/2" or Rigid Metallic Conduit
Weight	Approx. 9 kg

