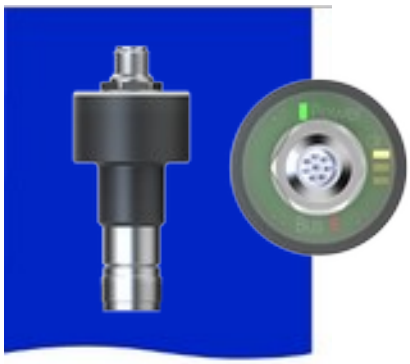
Digital pH/ORP Converter PHIX



- **For pH and Redox single-rod measurement chains with VarioPin or S7/S8 connection head**
- **Guided 1- or 2-point calibration procedure**
- **Glass impedance measurement for sensor condition detection**
- **Elimination of expensive special cables and high signal quality through sensor digitization**
- **Provides process values, identification data, diagnostic data**
- **Configurable calibration timer**
- **Stores up to 5 calibration results with timestamps**
- **Records operating hours as well as temperature and pH-related usage times (sensor stress)**

Characteristics

The digital converter PHIX is used for the potentiometric measurement of the pH or ORP value of a single-rod measuring chain.
For this purpose, the transmitter is screwed onto a VarioPin or S7/S8 standard connection head, eliminating the need for complex special cables.
The Modbus RTU protocol on RS485 is used for communication. This enables integration into existing networks as well as use with the multi-channel controller MULTICON.
The logging function can be used to evaluate the timing, slope and zero point of the last 5 calibrations. The integrated operating hours counter records the operating time as well as temperature and pH-related operating times. These are indicators of sensor stress and allow conclusions to be drawn about the intended use of the measurement chain.
Calibration can be carried out via a guided 1- or 2-point calibration as well as by manual input of zero point and steepness.
In addition to the main measured value, PHIX records the process temperature (measuring chains with integrated Pt1000), the glass impedance, as well as internal temperature and system power.
The glass impedance is an indicator of contamination, short circuit, breakage or the presence of the sensor chain itself. Internal temperature and supply voltage allow additional conclusions to be drawn about the intended use of the measuring point.
Parameterization and calibration can be carried out via the configuration tool GHMware as well as via the multi-channel controller MULTICON.
GHMware enables the calibration of PHIX and a single-rod measurement chain in the laboratory. In combination with automatic addressing, maintenance can be carried out "Plug & Measure".

Technical Data

Power supply

Supply voltage	: 4,7..28 V DC, max. 60 mA
Conformity	: CE

Input

pH/ORP

Measuring range	: -1...+15 pH / -1500...+1500mV
Accuracy	: 0,2% of measure
Temperature coefficient	: < 100 ppm/°C
Zero point	: pH = 7,00 (ΔpH = +/- 3,0)
Slope	: 30 ... 80 mV/pH
ORP adjustment	: +/- 200 mV

Temperature

Measuring range	: -50..+200°C
Accuracy	: 0,2K
Linearization error	: 0,1%

Glass impedance

Measuring range	: 0...1GΩ (temperature compensated)
Covered range	: 0,001 ... 2 GΩ (uncompensated)
Standard error	: +/- 20 %

Ambient temperature	: -10..60 °C
Storage temperature	: -20..60°C
Condensation	: not permitted

Electrode connector	: S8 or VarioPin

Materials

Housing	: PVC-U
Window	: Acryl glas (PMMA)

Electrical connection

Type	: 8-pole round plug IP67
Material	: brass nickel-plated.
Interface	: RS485, Half-Duplex
Protocol	: MODBUS RTU
Baud rate	: 1200, 2400, 4800, 9600, 19200
Weight	: 160 g
Protection class	: IP67

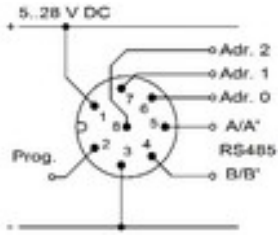
Dimensions

VP-Type

S8-Type

Connection diagram

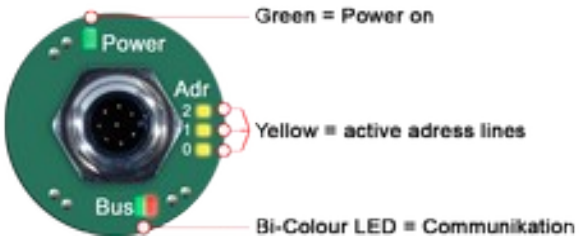
MB-Tpye with RS485,
Modbus RTU



PIN	Signal	Wire color ACI113
1	+ Supply voltage	White
2	Programming PIN (normally not connected)	Brown
3	- Supply voltage, Ground (C / C')	Green
4	B / B' Bus	Yellow
5	A / A' Bus	Grey
6	Adr. 0	Pink
7	Adr. 1	Blue
8	Adr. 2	Red (shield)

The addressing of the PHIX can be realized with a field attachable female connector (see accessories) or in a junction box.

Optical signaling



Top view PHIX: Optical signaling for supply voltage, bus communication and addressing.

Ordering code

PHIX 1. 2. 3. - -

1.	**Model / Electrode Connector**	
	S8	S7/S8, Electrode without temperature sensor
	VP	VarioPin, Electrode with temperature sensor
2.	**Interface**	
	MB	RS 485, MODBUS RTU
3.	**Options**	
	00	Without options

Accessories

Art. no.	Type	Description
-	GHM*ware*	Download: www.ghm-group.de/en/info-desk/
475291	EYY220	Programming adapter
Sensor plug, for customization, 8-pole		
476332	ACI113-00	Belden RKC8/9, brass nickel-plated
476331	ACI113-VA	Binder 713, stainless steel
Sensor cable shielded, 8 pole, plug/pig tail		
476533	ACI113-002-1-00	2 m
476116	ACI113-005-1-00	5 m
476117	ACI113-010-1-00	10 m
476118	ACI113-025-1-00	25 m

Single-rod measurement chains

Art. no.	Type	Description
S8 Plug		
103699	AL70pH (pH)	For standard purpose
480881	pH141 (pH)	For aggressive media, 240mm
434356	L9080 (pH)	For ion-deficient media
434334	AL79pt (Redox)	For standard purpose
104195	Pt8281HD (Redox)	For highly poluted media
VP Variopin Plug		
100790	EGA142 (pH)	For standard purpose
483169	pH211(pH)	For highly poluted media
100770	SL81(pH)	For media with high temperatures (CIP/SIP)

Process adapters

Art. no.	Type	Description
diverse	EA2200	For installation with PVC-U standard fitting DFA32
diverse	EA2430	Clamp process adapter
diverse	EA2630	BSP adapter for 1“, ¾“, PVDF
diverse	EA2650	BSP adapter for 1“, ¾“, ½“, sst
diverse	EA2090	Immersion assembly for open systems