

# General Specifications

Model PH100  
EXA100 Series  
Panel Mount pH Analyzer

The EXA100 series is a simple, reliable panel-mountable pH Analyzer providing all the basic functionalities required for water treatment applications. It is ideal for cost-sensitive unattended applications where panel space is important.

One analog output and either two or four contact outputs are available along with simple self-diagnostics to help ensure measurement accuracy and equipment reliability.

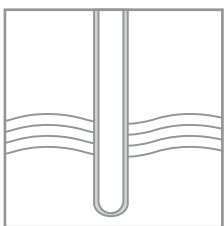
Yokogawa is a leader in process automation and pH measurement systems, and the Yokogawa brand delivers reliability that you can depend upon.

## Features

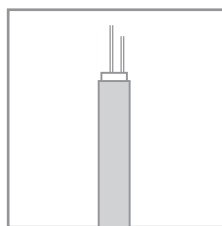
- 96 x 96 mm panel mount design for indoor use
- Easy access to routine maintenance mode
- Practical functions packed in a compact housing
- Large 4-digit display
- One analog output and two/four contact outputs as standard
- Simple one touch automatic calibration
- Self-diagnostics (e.g., calibration failure, measuring range failure, converter failure)



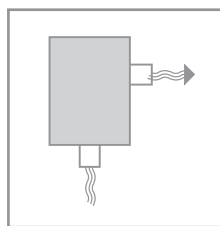
## System Configuration



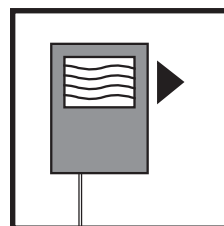
Sensors



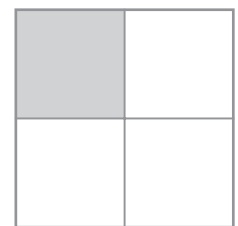
Cables



Fittings



Transmitters



Accessories

## General Specifications

### Panel mounted pH converter

**Model** : PH100

**Measurement** : Hydrogen ion concentration (pH) of a solution

**A. Measuring range** : 0.00 to 14.00 pH Indication  
 Display : Digital (LED)  
 Range : -2.00 to 16.00 pH  
 Resolution : 0.01 pH (pH reading), 1 °C (temperature reading)  
 Indication items : pH reading, setting, status, temperature <sup>†</sup>  
<sup>†</sup> Indication "enabled/disabled" selectable

### B. Input signal

pH input range : -2 to 16 pH  
 Temperature input : Pt1000/Pt100  
 Temperature input range : -10 to 110 °C

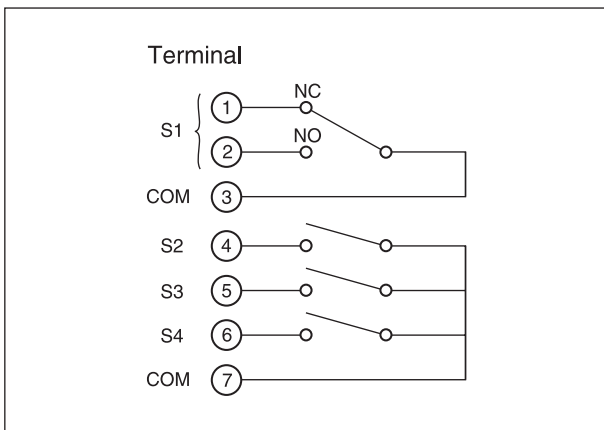
### C. Transmission signals

Output : 1 output, pH reading only  
 Output signal : 4-20 mA DC, isolated  
 Load resistance : 600Ω or less  
 Transmission signal range : Configurable within measuring range  
 Minimum span : 2 pH  
 Maintenance output signal : Output hold "enabled/disabled" selectable  
 Hold output value : Last measured value/preset value (2.0 to 20.8 mA) selectable  
 Fail output signal : Downscale burnout (2 mA) "enabled/disabled" selectable

### D. Contact output

Contact type : Relay contact output  
 Number of contacts : 2 or 4 outputs (must be specified when ordering)  
 Contact action : On/Off action  
 Contact functions : Selectable: High, low, high-high, low-low, high-high/low-low limit alarms, FAIL  
 Contact output hysteresis : 0.0 to 4.0 pH (configurable)  
 Contact output delay time : 0 to 200 seconds (configurable)  
 Contact rating :  
 When 2 contact outputs specified  
 S1 : 240 VAC 3A or 30 V DC 3A (resistance load), Form C (NC/NO/COM, 3 terminals)  
 S2 : 240 VAC 3A or 30 V DC 3A (resistance load), Form A  
 When 4 contact outputs specified  
 S1 : 240 VAC 3A or 30 V DC 3A (resistance load), Form C (NC/NO/COM, 3 terminals)  
 S2, S3, S4 : 240 V AC 3A or 30 V DC 3A (resistance load), Form A, shared common Maximum load current on common is 3A.

### Contact status:



Contact		Function selected					
		H, L, HH, LL, HH/LL limit alarms			FAIL		
		Power of	Power on		Power of	Power on	
No alarm	Alarm		No alarm	Alarm			
S1	NO-COM	Open	Open	Closed	Open	Closed	Open
	NC-COM	Closed	Closed	Open	Closed	Open	Closed
S2		Open	Open	Closed	Open	Closed	Open
S3 when specified		Open	Open	Closed	Open	Closed	Open
S4 when specified		Open	Open	Closed	Open	Closed	Open

**Note:** When a contact is activated, the LED on display panel turns on.

## Operation Specifications

**A. Ambient temperature:** -5 to 45°C

**B. Installation altitude :** 2000 m or less above sea level

**C. Storage temperature:** -25 to 70 °C

**D. Ambient humidity :** 10 to 90% RH, non-condensing

**E. Safety and Regulatory Compliance :**   **N200**

Grounding : Ground to earth  
(grounding resistance 100V or less)

Safety and EMC Compliance

Safety : EN61010-1:2001, CSA1010.1, UL61010C-1

Installation (overvoltage) category: CAT II <sup>1)</sup>

EMC: EN61326 Class A, C-tick AS/NZS CISPR 11

<sup>1)</sup> Installation (overvoltage) category specifies transient overvoltage conditions by category numbers and implies the level of impulse withstand voltage protection. CAT II refers to electrical equipment supplied from fixed installation, e.g., a distribution board.

### F. Construction

Front panel : Dust-proof and waterproof construction IP55  
IP65 (when "/65" option specified)

Materials : ABS resin and polycarbonate

**G. Power supply :** Rated voltage 100 to 240 V AC (±10%), 50/60 Hz

**H. Power consumption :** Max. 9 VA

### I. Shipping details

Weight : Approx. 600g

Dimensions : 96 (W) x 96 (H) x 120 (D) mm

### J. Panel cutout dimensions

: 92 (W) x 92 (H) mm

### K. Wiring

: M3.5 screw terminal

### L. Grounding

: grounding resistance 100 Ω or less

### M. Functional specifications

Asymmetry potential

adjustment range : 7±2 pH

Slope adjustment

range : 70 to 110% of theoretical value

Automatic temperature

compensation range : -10 to 110 °C, manual temperature

compensation available

(setting range : -10 to 110 °C)

Temperature correction function (cable length correction by one-point temperature calibration)

### N. Calibration function

One touch automatic calibration (one or two point calibration)

Standard solution table

: Selectable

: JIS•NIST Table (4, 7, 9 pH) DIN 19267 Table (4, 7, 9 pH)

US Technical Buffer Table (4, 7, 10 pH) Standard solution temperature range

: 0 to 95 °C for JIS•NIST Table

0 to 90 °C for DIN 19267 Table

0 to 60 °C for US Technical Buffer Table

Manual calibration (one or two point calibration at specified setpoint(s))

### O. Self-diagnostics function

FAIL output : pH measurement range failure, temperature measurement range failure, temperature detection element failure, and converter failure

Detection during calibration, error indication

: Standard solution temperature range failure, asymmetry potential failure, electromotive force slope failure, stability failure

Converter performance: under normal operating conditions

Linearity : ±0.03 pH

Repeatability : ±0.02 pH

Transmission output accuracy

: ±0.3% of span

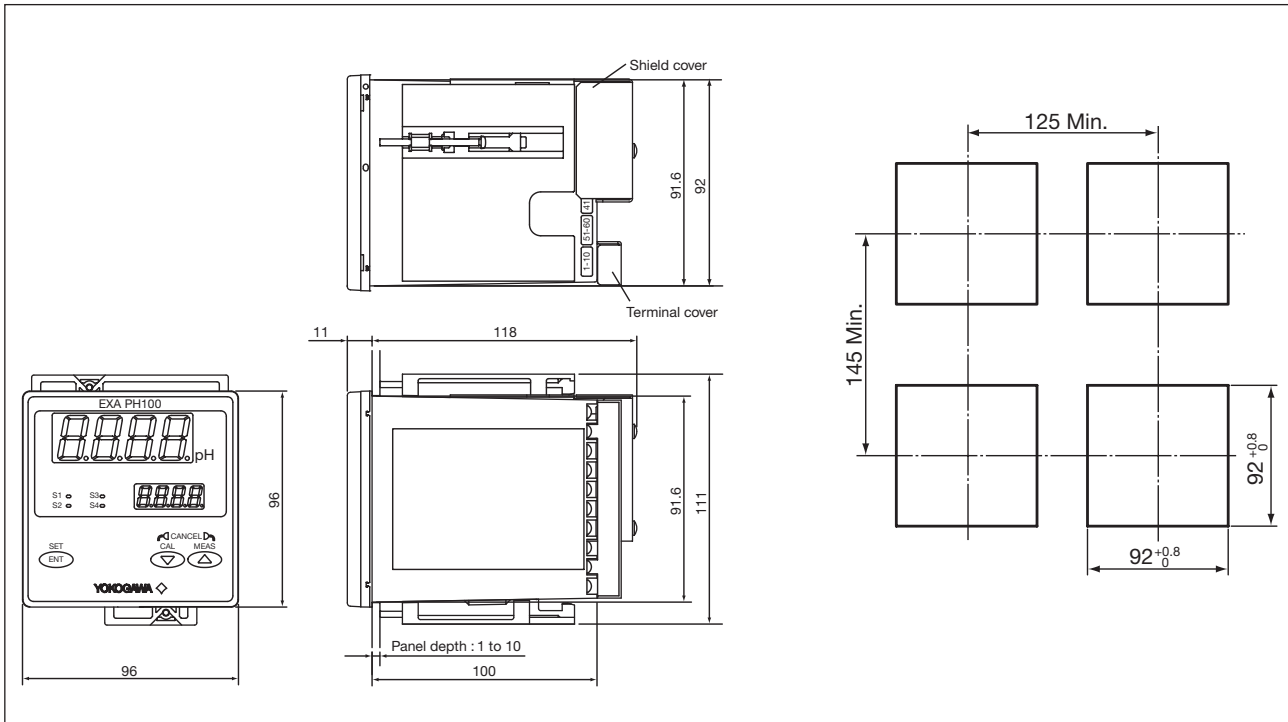
## Model and Suffix Codes

PH100 Panel Mounted pH Converter

Model	Suffix code	Option code	Description
PH100			Panel mounted pH converter
	-A		Always -A
Label language	-E		English
Contact output	-21		2 contact outputs
	-41		4 contact outputs
Temperature sensor	-T1		Pt1000/Pt100
	-NN		Always -NN
Option	Construction	/65	with sealing for IP65 (Front Only)

## Dimensions

PH100 Panel Mounted pH Converter  
Panel Cutout Dimensions



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