

# Specifications

See the DX100P/DX200P General Specifications documents (GS 04L05A01-00E, 04L06A01-00E) for complete product specifications.

## Standard Specifications

### General Specifications

Attachment: Embedded panel (vertical panel)  
The attachment angle may be slanted 30° to the rear. Left-right horizontal.

Attached panel thickness: 2–26 mm

Materials Case: Steel  
Bezel: Polycarbonate  
Front filter: Polycarbonate

Paint colors Bezel: Charcoal gray light (Munsell 10B 3.6/0.3 or equivalent)  
Case: Grayish blue-green (Munsell 2.0B 5.0/1.7 or equivalent)

Front panel dustproof/water resistance specifications:  
Compliant with IEC529-IP65  
Compliant with NEMA No. 250 TYPE4 (except icing test)

### ■ Input Unit

Number of inputs and measurement periods:

Model	Inputs	Measurement Period	Event file sampling period
DX102P	2	125ms	125,250,500ms, 1,2,5,10,30,60,120, 300,600s
DX104P	4		
DX106P	6	1 second (2 seconds for A/D integration time of 100 ms)	1,2,5,10,30,60,120, 300,600s
DX112P	12		
DX204P	4	125ms	125,250,500ms, 1,2,5,10,30,60,120, 300,600s
DX208P	8		
DX210P	10	1 second (2 seconds for A/D integration time of 100 ms)	1,2,5,10,30,60,120, 300,600s
DX220P	20		
DX230P	30		

Measuring range:

Input	Range	Measuring Range
DCV	20mV	-20.00 – 20.00mV
	60mV	-60.00 – 60.00mV
	200mV	-200.0 – 200.0mV
	2V	-2.000 – 2.000V
	6V	-6.000 – 6.000V
	20V	-20.00 – 20.00V
TC	50V	-50.00 – 50.00V
	R *1	0.0 – 1760.0°C
	S *1	0.0 – 1760.0°C
	B *1	0.0 – 1820.0°C
	K *1	-200.0 – 1370.0°C
	E *1	-200.0 – 800.0°C
	J *1	-200.0 – 1100.0°C
	T *1	-200.0 – 400.0°C
	N *1	0.0 – 1300.0°C
	W *2	0.0 – 2315.0°C
RTD *5	L *3	-200.0 – 900.0°C
	U *3	-200.0 – 400.0°C
	Pt100 *4	-200.0 – 600.0°C
DI	JPt100 *4	-200.0 – 550.0°C
	Voltage input	OFF: less than 2.4 V ON: more than 2.4 V
	Contact input	Contact ON/OFF

\*1 R, S, B, K, E, J, T, N: IEC584-1 (1995), DIN IEC584, JIS C 1602-1995

\*2 W: W-5% Rd/W-26% Rd (Hoskins Mfg. Co.), ASTM E988

\*3 L: Fe-CuNi, DIN43710, U: Cu-CuNi, DIN43710

\*4 Pt100: JIS C 1604-1997, IEC 751-1995, DIN IEC751-1996,

JPt100: JIS C 1604-1989, JIS C 1606-1989

\*5 Measuring current: i = 1mA

Thermocouple burnout: Detector ON/OFF switching (can be set for each channel)  
Burnout upscale/downscale switching

### Calculations :

Differential calculation : The difference between any two channels can be calculated.  
Calculable inputs : DCV, TC, RTD

Linear scaling : Scalable inputs : DCV, TC, RTD  
Scalable range: -30000–30000

Square root: Scalable inputs : DCV  
Scalable range: -30000–30000

### ■ Display

Display:

DX100P: 5.5-inch color TFT LCD (320 × 240 pixels)  
DX200P: 10.4-inch color TFT LCD (640 × 480 pixels)  
\*Some LCD display pixels may remain constantly on or off. Also, brightness variations may occur due to the properties of the liquid crystal. Please note that this does not mean the display is broken.

Trend/bar graph display colors: DX100P: Any of 12 colors  
DX200P: Any of 16 colors

Background: White or black

Status display: Display group name, login user name (when using login function), time (year/month/date, hour:minute:second), batch name, recording operation, memory status, media status, calculation status, email status, main alarm display

Display types: Measurement data display (trend display, digital display, bar graph display), overview display, information display (alarm summary, alarm ACK summary, message summary, memory summary), historical display

### Trend Display

Number of screens: 6 (6 groups)

Number of display channels: DX100P: Up to 6 channels per screen or all channels  
DX200P: Up to 10 channels per screen or all channels

Waveform update rates: DX102P, DX104P: 15/30 seconds; 1/2/5/10/15/20/30 minutes; 1/2/4/10 hours/div  
DX106P, DX112P: 1/2/5/10/15/20/30 minutes; 1/2/4/10 hours/div  
DX204P, DX208P: 15/30 seconds; 1/2/5/10/15/20/30 minutes; 1/2/4/10 hours/div  
DX210P, DX220P, DX230P: 1/2/5/10/15/20/30 minutes; 1/2/4/10 hours/div

Direction: Vertical or horizontal

Thickness: 1, 2, or 3 dots

Scale: DX100P: 6  
DX200P: 10

Message display: Display of messages input through key input

Other displayed information: Digital value display, tripline, grid, hour:minute, update rate

### Digital Display

Number of screens: 6 (6 groups)

Number of display channels: DX100P: Up to 6 channels per screen or all channels  
DX200P: Up to 10 channels per screen or all channels

Update rate: 1 second

Display contents: Measurements, channel/tag names, units, alarm statuses

### Bar Graph Display

Number of screens: 6 (6 groups)

Number of display channels: DX100P: Up to 6 channels per screen or all channels  
DX200P: Up to 10 channels per screen or all channels

Update rate: 1 second

Direction: Vertical or horizontal

Scale: 4 to 12

Reference position: Edge or center (only during horizontal display)

Display contents: Measurements, channel/tag names, scale upper/lower limits, units, alarm statuses, upper/lower limit alarm points

### Overview Display

Update rate: 1 second

Display contents: Measurements and alarm statuses on all channels

### Information Display

Display types: Alarm summary, alarm ACK summary, message summary, memory information, etc.

### 4 Part Split Screen Display (DX200P)

Display contents: The screen is divided into four windows.  
Any display type/display group may be displayed in the windows from measurement data display or information display.

Number of stored display types: 4 maximum

### Data Reference Functions

Functions: Redisplay of data from internal memory or removable storage media  
Display data: Display data files, event data files  
Display layout: Full screen  
Time-axis actions: Reducing, enlarging, scrolling

### ■ Storage Functions

Removable storage media: The following removable storage media options are available when ordering a system:

\*Zip drive (100MB)

\*Compact Flash memory card (up to 512 MB)

### File types

The following data are saved on removable storage media:

File types	Data contents	Format
Display data	Maximum and minimum values in the waveform update period, from data sampled in the measurement period	Binary
Event data	Instantaneous values sampled in specified sampling period	Binary
Manual sample data	Instantaneous values for each key input or contact input	ASCII
Statistical calculation (TLOG) data*	Data at TLOG time-out	Binary
Report data*	Data at report time-out	ASCII
Configuration file	Settings for operation/engineering mode, system administrator, general user, and login mode setting	Binary

\*When using the calculation option (IM1)

Data saving period: Display data: Linked to waveform update rate.

Event data: Specify the sampling period.

Measured data files: Select one of two file types, and create files of that type

- Display data file
- Event file

### Data size:

Display data: Measurement data: 4 bytes/record  
Calculation data: 8 bytes/record  
Measurement data: 2 bytes/record  
Calculation data: 4 bytes/record

## Option specifications

- **Easy Test Entry**  
Number of units under control : Up to 32 units by ID setting  
Max. communication distance : Up to 8m, depending on battery strength area of use  
Operational functions
  - User Name/User ID/Password input for logging in
  - Message input
  - Engineering mode setting
  - System mode setting
  - Trend/Digital/Bar Graph display change
- **Calibration Correction**  
Functions: Input value correction with linearization  
Points: Selectable from off, 2 to 16  
Target channel: Measurement channel  
Target range: All range mode
- **Alarm Relay Contact Output (/AR1, /AR2, /A3, /A4\*, /A5\*)**  
Functions: Relay output through back side when alarm occurs  
Outputs: 2, 4, 6, 12\* or 24\*  
Relay contact capacitance: 250 VDC/0.1 A (resistance load), 250 VAC (50/60 Hz)/3 A  
Output form: NO-C-NC (switching between excitation/non-excitation, AND/OR, holding/non-holding)  
\* /A4 and /A5 are for DX200P only.
- **Serial Communications (/C2, /C3)**  
Functions: Data output to host  
Media: EIA RS-232 (/C2) or RS-422-A/485 (4-wire) (/C3) compliant  
Protocol: Special protocol or Modbus  
Synchronization method: Start-stop synchronization  
Communication method (RS-422-A/485): 4-wire half-duplex multi-drop connection (1:N, where N is 1–32)  
Transfer rate: 1200, 2400, 4800, 9600, 19200, 38400 bps  
Data length: 7/8 bits  
Stop bit: 1 bit  
Parity: ODD, EVEN, NONE  
Maximum communication distance: 1.2 km (RS-422-A/485)  
Communication mode: Control and settings I/O are in ASCII mode. Measurement data are output in ASCII or binary mode.  
Modbus communication: Operation mode: RTU MASTER or RTU SLAVE  
RTU MASTER: Capable of data acquisition for 8 packet groups. Registers of a continuous data type in the same slave can be registered in a single packet group.  
RTU SLAVE: Outputs measurement/calculation data and alarm statuses.  
Evaluated Barcode Scanner: Metrologic Inc. MS 9540-RS (RS-232 interface) Symbol Technologies Inc. LS 1902-RS (RS-232 interface)
- **VGA Output (/D5, DX200P only)**  
Enables connection to external display device.
- **FAIL/Memory End Output (/F1)**  
Select FAIL output, memory output, or batch start/stop output on 2 relay outputs.  
FAIL Output: Relay output when system error occurs  
Memory mode output: Relay output a specified number of hours before internal memory overwriting starts (1, 2, 5, 10, 20, 50, or 100 hours), or when available space on the external memory medium falls below 10% or 6 MB.  
Batch start/stop: Batch start/stop status relay output  
Relay contact capacitance: 250 VDC/0.1 A (resistance load), 250 VAC (50/60 Hz)/3 A
- **Clamped Input Terminal (/H2)**  
A clamped input terminal is used as an input terminal.
- **Desktop Type (/H5[ ], /H5)**  
Includes carrying handle and power cord (model /H5 does not include power cord)
- **Mathematical Functions (/M1)**  
These functions enable the calculations listed below, as well as displaying and recording trends and digital values on calculation channels.  
Number of calculation channels: DX102P, DX104P: 8 channels  
DX106P, DX112P: 12 channels  
DX204P, DX208P: 8 channels  
DX210P, DX220P, DX230P: 30 channels  
Calculation types:  
General calculations: Arithmetic calculations (+, -, \*, /), square roots, absolute values, common logarithms, exponents, powers, relational calculations (<, >, =, ≠), logical calculations (AND, OR, NOT, XOR)  
Statistical calculations: Time-series data averages, maximum values, minimum values, totalized values  
Moving averages: Moving averages are determined for calculation results.  
Constants: DX100P: Up to 12 constants can be set.  
DX200P: Up to 30 constants can be set.  
Online digital communications input: Can be used for calculation formulas other than statistical calculations.  
DX100P: 12 channels  
DX200P: 30 channels  
Remote inputs: Up to 8 remote inputs can be used. Remote statuses (0/1) can be used in calculation formulas.  
Reporting functions:  
Report types: Hourly reports, daily reports, hourly + daily reports, daily + weekly reports, daily + monthly reports  
Calculation types: Average values, maximum values, minimum values, totalized values

- **Cu10/Cu25 RTD Input/3-Wire Isolated RTD Input (/N1)**  
This option enables Cu10 and Cu25 inputs in addition to the standard inputs.
- **3-Wire Isolated RTD Input (/N2)**  
With this option, all RTD input points are isolated (A, B, and b are all isolated).  
\*Only available with the DX106P, DX112P, DX210P, DX220P, and DX230P.

■ **24 VDC/AC Power Driven Model (/P1)**  
Rated supply voltage: 24 VDC or 24 VAC (50/60 Hz)  
Operating supply voltage range: 21.6 to 26.4 VDC/AC  
DX100P power consumption:

Power supply voltage	With LCD saver ON	Normal mode	Maximum
24 VAC	Approx. 17 VA	Approx. 19 VA	Approx. 30 VA
24 VAC(50/60 Hz)	Approx. 28 VA	Approx. 32 VA	Approx. 45 VA

DX200P power consumption:

Power supply voltage	With LCD saver ON	Normal mode	Maximum
24 VAC	Approx. 34 VA	Approx. 35 VA	Approx. 54 VA
24 VAC(50/60 Hz)	Approx. 50 VA	Approx. 53 VA	Approx. 76 VA

- **Remote Control (/R1)**  
The remote control can be used to control the following through contact input (as many as 8 points can be set)
  - Memory start/stop (level)
  - Time setting (time set to reference time through contact; trigger; 250 ms or greater)
  - Calculation start/stop (level)
  - Calculation data reset (trigger; 250 ms or greater)
  - Manual sampling (trigger; 250 ms or greater)
  - Message writing (as many as 8 types can be set; trigger; 250 ms or greater)
  - Alarm ACK (trigger; 250 ms or greater)
  - Snapshot (trigger; 250 ms or greater)
- **24 VDC Transmitter Power Supply Output (/TPS2\*, /TPS4, /TPS8\*)**  
Output voltage: 22.8–25.2 VDC (for rated load current)  
Rated output current: 4–20 mA DC  
Maximum output current: 25 mA DC (overcurrent assured operation current: approximately 68 mA DC)  
Permitted conductor resistance:  $RL \leq (17.8 - \text{transmitter minimum operating voltage})/0.02 \text{ A}$  (250Ω load shunt resistance; drop voltage not included)  
Maximum cable length: 2 km (using CEV cable)  
Insulation Resistance: Across output and main ground 20 MΩ or more (500 V DC)  
Withstanding Voltage: Across output and main ground 500 VAC (50/60 Hz; I = 10 mA), for one minute  
\* /TPS2 is for DX100P; /TPS8 is for DX200P only.

## Application software (DAQSIGNIN)

- **System Requirements**  
Operating system: Microsoft Windows 98 (IE3.02 or later installed)/Me/NT 4.0 (service pack 3 or later installed)/2000/XP  
Processor: Pentium II 233 MHz or higher  
RAM: 64 MB or more  
Disk drive: CD-ROM drive compatible with Windows 98/Me/NT4.0/2000/XP  
Free hard drive space: 20 MB or more  
Video card: A card compatible with Windows 98/Me/NT 4.0/2000/XP, and able to display 64,000 colors or more  
Printer: Printer and printer driver compatible with Windows 98/Me/NT 4.0/2000/XP  
Communication Interface: Ethernet board compatible with Windows (TCP/IP installation is needed by OS)
- **Main Functions (package)**
  - Data management function: Table display of data by batch unit, or by data type
  - Data viewer: Redisplay of batch data, display of signatures and operation history, printout of redisplayed data, file conversion (to ASCII, Lotus 1-2-3, or MS-Excel)
  - DX100P/DX200P settings

## Model Code

### DX100P

Model code	Suffix code	Optional code	Description
DX102P			DAQSTATION DX100P (2ch)
DX104P			DAQSTATION DX100P (4ch)
DX106P			DAQSTATION DX100P (6ch)
DX112P			DAQSTATION DX100P (12ch)
External Memory	-2		Zip (with medium)
	-3		CompactFlash memory card (CF+Adapter)
Display Language	-1		English, deg F & Summer/winter time (with English DAQSIGNIN)
Option Specifications	/AR1		Alarm output 2 points/Remote control *1*2
	/AR2		Alarm output 4 points/Remote control *1*2
	/A3		Alarm output 4 points *1*3
	/C2		RS-232 interface (including MODBUS) *4*5
	/C3		RS-422-A/485 interface (including MODBUS) *4*5
	/F1		FAIL/memory end output *3
	/H2		Clamped input terminal
	/H5		Desktop type (without power cord, screw type power terminal) *6
	/H5 [ ]		Desktop type (with power cord) *7
	/M1		Mathematical function (with report function)
	/N1		Cu10,Cu25 RTD input/3 legs isolated RTD
	/N2		3 legs isolated RTD *8
	/P1		24V DC/AC power supply
	/R1		Remote control
	/TPS2		24V DC Power Supply for Transmitter(2 loop) *9
/TPS4		24V DC Power Supply for Transmitter (4 loop) *10	
/KB1		Easy Text Entry (with input terminal) *11*12	
/KB2		Easy Text Entry (without input terminal) *11	
/CC1		Calibration Correction	

\*1 /AR1, /AR2 and /A3 cannot be specified together. \*2 If /AR1 or /AR2 is specified, /R1 cannot be specified. \*3 If /A3 is specified, /F1 cannot be specified. \*4 /C2 and /C3 cannot be specified together. \*5 In case that Modbus master function is utilized, /M1 must be specified. \*6 In case that 24 VDC/AC power supply(/P1) and desktop type are specified, /H5 must be specified. /P1 and /HS [ ] cannot be specified together. \*7 /HS [ ] (D-Power cord UL, CSA std, F-Power cord VDE std, R-Power cord SAA std, J-Power cord BS std, H-Power cord GB std) \*8 /N2 cannot be specified for DX102P and DX104P. \*9 In case that /TPS2 is specified, /TPS4, /AR2, /A3 or /F1 cannot be specified. \*10 In case that /TPS4 is specified, /TPS2, /AR1, /AR2, /A3 or /F1 cannot be specified. \*11 /KB1 and /KB2 cannot be specified together. \*12 In case that /KB1 is specified, input terminal(4382 27) is attached.

### DX200P

Model code	Suffix code	Optional code	Description
DX204P			DAQSTATION DX200P (4ch)
DX208P			DAQSTATION DX200P (8ch)
DX210P			DAQSTATION DX200P (10ch)
DX220P			DAQSTATION DX200P (20ch)
DX230P			DAQSTATION DX200P (30ch)
External Memory	-2		Zip(with medium)
	-3		CompactFlash memory card (CF+Adapter)
Display Language	-1		English, deg F & Summer/winter time (with English DAQSIGNIN)
Option Specifications	/AR1		Alarm output 2 points/Remote control *1*2
	/AR2		Alarm output 4 points/Remote control *1*2
	/A3		Alarm output 6 points *1
	/A4		Alarm output 12 points *1
	/A5		Alarm output 24 points *1*3
	/C2		RS-232 interface (including MODBUS) *4*5
	/C3		RS-422-A/485 interface (including MODBUS) *4*5
	/D5		VGA output
	/F1		FAIL/memory end output *3
	/H2		Clamped input terminal
	/H5		Desktop type (without power cord, screw type power terminal)*6
	/H5 [ ]		Desktop type (with power cord) *7
	/M1		Mathematical function (with report function)
	/N1		Cu10,Cu25 RTD input/3 legs isolated RTD
	/N2		3 legs isolated RTD *8
/P1		24 VDC/AC power supply	
/R1		Remote control	
/TPS4		24V DC Power Supply for Transmitter (4 loop) *9	
/TPS8		24V DC Power Supply for Transmitter (8 loop) *10	
/KB1		Easy Text Entry (with input terminal) *11*12	
/KB2		Easy Text Entry (without input terminal) *11	
/CC1		Calibration Correction	

\*1 /AR1, /AR2 and /A3 cannot be specified together. \*2 If /AR1 or /AR2 is specified, /R1 cannot be specified. \*3 If /A3 is specified, /F1 cannot be specified. \*4 /C2 and /C3 cannot be specified together. \*5 In case that Modbus master function is utilized, /M1 must be specified. \*6 In case that 24 VDC/AC power supply(/P1) and desktop type are specified, /H5 must be specified. /P1 and /HS [ ] cannot be specified together. \*7 /HS [ ] (D-Power cord UL, CSA std, F-Power cord VDE std, R-Power cord SAA std, J-Power cord BS std, H-Power cord GB std) \*8 /N2 cannot be specified for DX102P and DX104P. \*9 In case that /TPS2 is specified, /TPS4, /AR2, /A3 or /F1 cannot be specified. \*10 In case that /TPS4 is specified, /TPS2, /AR1, /AR2, /A3 or /F1 cannot be specified. \*11 /KB1 and /KB2 cannot be specified together. \*12 In case that /KB1 is specified, input terminal(4382 27) is attached.

### Software

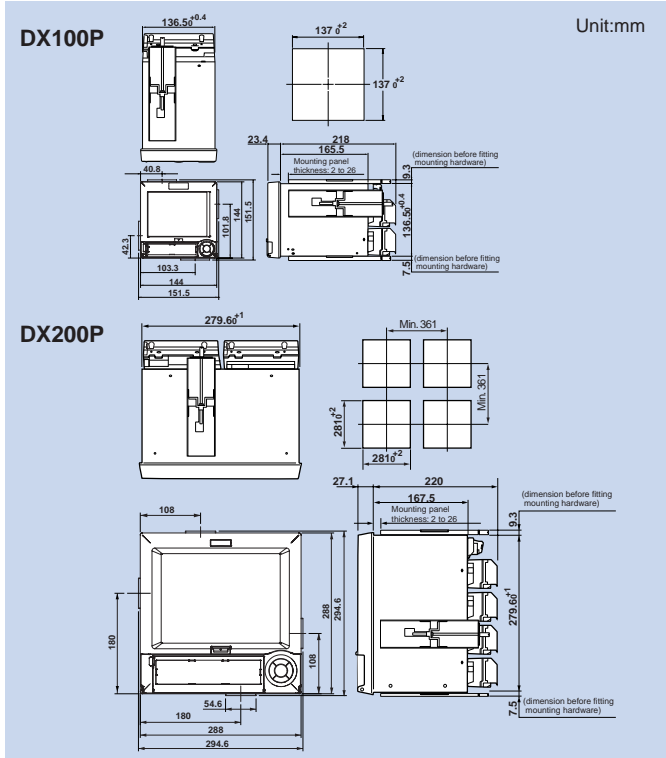
Model Code	Description	OS
DXA150-02	DAQSIGNIN	Windows 98/Me/NT 4.0/2000/XP

## Accessories

### Accessories (Sold separately)

Product	Model(Part number)	Specifications
Validation Document	438221	Electronic file for DX100P
	438222	A4 sized paper for DX100P
	438223	Letter sized paper for DX100P
	438224	Electronic file for DX200P
	438225	A4 sized paper for DX200P
	438226	Letter sized paper for DX200P
	415920	25Ω±0.1%
Shunt resistor for screw terminal	415921	100Ω±0.1%
	415922	10Ω±0.1%
	438920	250Ω±0.1%
Shunt resistor for clamped terminal	438921	100Ω±0.1%
	438922	10Ω±0.1%
Zip disk	A1053MP	100MB
CompactFlash memory card (CF+Adapter)	B9968NL	32MB or more
Fuse	A1347EF(DX100P)	250V, 1ATL
	A1352EF(DX100P/P1)	250V, 4ATL
	A1423EF(DX200P)	250V, 1.25ATL
	A1463EF(DX200P/P1)	250V, 6.3ATL
Mounting bracket	B9900BX	-
Module removal handle	790581	-
Input terminal	438227	For /KB1, /KB2 option

## Dimensions



When mounting the DX100P/DX200P in the panel, use 2 panel mounting brackets. They can be attached in a left/right or top/bottom configuration. For the top/bottom and left/right panel cut dimensions, refer to our General Specifications (GS04L05A01-00E/04L06A01-00E). If not specified, the tolerance is ±3%, however if less than 10 mm, the tolerance is ±0.3 mm.

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### NOTICE

- Before operating the product, read the instruction manual thoroughly for proper and safe operation.
- If this product is to be used with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.