YOKOGAWA

Co-innovating tomorrow™

OpreX™ Data Acquisition

FX1000

Paperless Recorder

SD Memory Card Support

Bulletin 04L21B01-01EN

Paperless recording technology and perform ance at an entry-level price FX1000™

At YOKOGAWA, we are committed to the “quality first, customer first” principle in all areas of our business, including product design, research and development, and sales and services. The FX1000 paperless recorder exceeds customer expectations for quality, high performance and capability- at a price that meets the needs of a cost-sensitive market.

Intuitive display, easy operation

- 5.7-inch, high-precision, wide-viewing-angle color TFT LCD
- Many types of displays such as trend, digital, bar graph, overview, alarm, and historical trend
- Remote viewing of the FX1000 screen through the Internet
- Multi-functional panel keys

Comprehensive selection of measurement types, and exceptional performance

- Input types:
  DCV, TC, RTD, DI
- Scan interval:
  1 s, 125 ms (fast sampling)
- Channels:
  2, 4, 6, 8, 10, 12
- Measurement accuracy:
  ±0.05% of reading (DCV),
  ±0.15% of reading (TC, RTD)

Reliable data storage

- Large (400 MB) internal memory
- SD cards up to 32 GB or CF cards up to 32 GB
- USB interface (option)
- Binary data storage
- Network enables data redundancy

Support for a variety of applications

- Power measurement recording (/PWR1, /PWR5 option)
- Vacuum pressure recording (Log scale, option)
- Flow rate summation (option)
- F value calculation (option)

See “Applications” on the next page.

Reliable design and construction

- Space-saving design
- Waterproof and dustproof (IP65 compliant)

Multi-Channel Measurement and Recording

Universal input signal measurement

Thermocouple RTD DC voltage/current Pulse (option) Power (option) DI input

SD memory card support
(External storage medium slot Suffix code: -7)

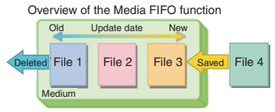
High capacity internal memory

Standard 400 MB non-volatile flash memory for secure, long term recording

Media FIFO function

This function ensures that the CF card or SD card always retains the latest data when files are saved to it automatically. When the CF card or SD card is full, the oldest files are deleted to make room for the newest files. The media FIFO function allows you to use the FX continuously for long periods of time without having to change the CF card or SD card.

Overview of the Media FIFO function



Compact dimensions for easy panel & enclosure installation

Shallow case depth behind the panel of **162 mm** (6.4”)

Water- and dustproof

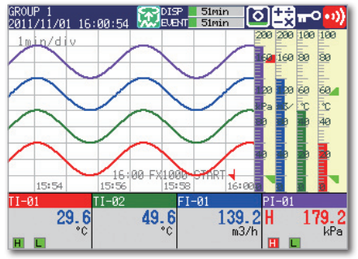
Complies with IEC529-IP65, except side-by-side mounting

Intuitive operator controls

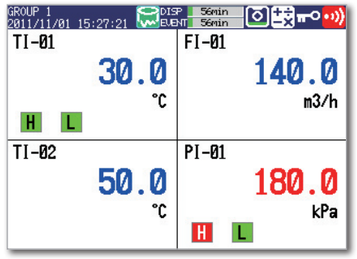
The DISP/ENTER and arrow keys provide display mode and setting menu navigation. Clearly labeled menu, function, and record start/stop keys handle all setting and control operations.

Monitor display

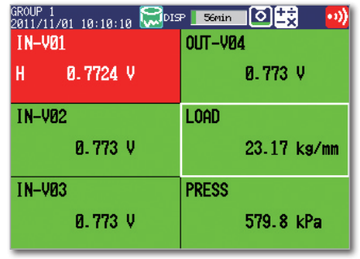
You can use the keys to switch to any of the operation screens.
The operating states of memory sampling, alarms, key lock, computation, and other conditions are graphically displayed.
Supports Chinese, English, German, French, Italian, Spanish, Portuguese, Russian, Korean, and Japanese.



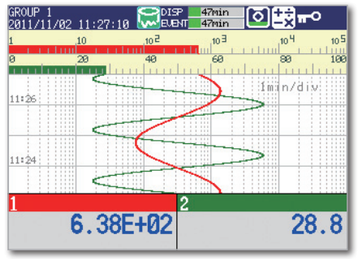
Trend display Displays measured data as waveforms. Displays each channel's scale value, industrial units, user messages, and other information.



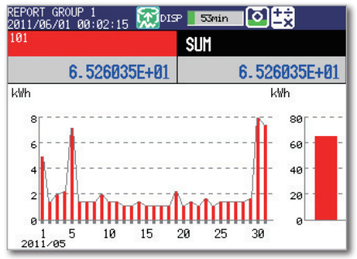
Digital display In addition to displaying measurements digitally, it displays channel/tag, industrial units, and alarm statuses.



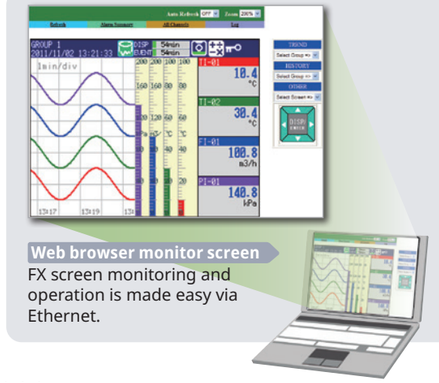
Overview display Displays measurements and alarm statuses on all channels.



Trend display (Log scale)
You can display log scales for degree of vacuum (pressure input), and record the data (option).



Stacked bar graph You can display and record power consumption of each piece of electronic equipment; useful for energy saving and equipment maintenance as part of environmental protection programs (option).



Web browser monitor screen
FX screen monitoring and operation is made easy via Ethernet.

Bar graph, historical trend, and information displays (alarm summaries, message summaries, and reports) are also included.

Applications

PAPERLESS RECORDER FX1000

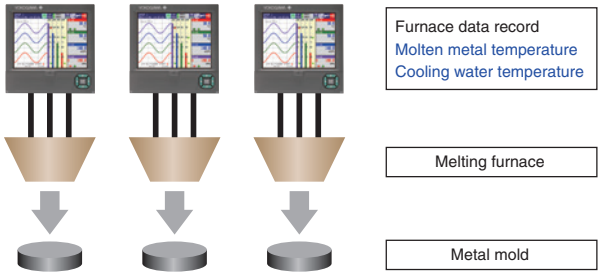
Secure Monitoring and Recording for a Wide Range of Applications

FX1000 combines a clear view of process data with highly reliable recording and efficient data access. Network file transfer and web browser viewing improves efficiency and saves time. Use the Power Monitor option to monitor and record energy consumption on equipment to learn true energy usage costs and for diagnostic and preventive maintenance purposes.

Temperature Recording/Monitoring for Aluminum Casting

Simplifies casting temperature quality management.

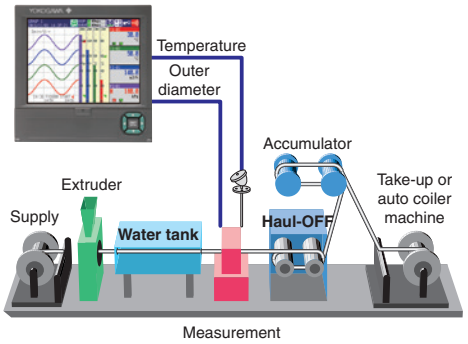
– Displays and records aluminum casting data
  Molten metal temperature
  Cooling water temperature
– Archives data upon alarm occurrence
  Analysis alarm data



Management of an Electrical Wire Coating Process (Acquisition of Data on Wire Temperature and Outer Diameter)

Displays outer diameter and temperature in a electrical wire coating process for monitoring insulation quality.

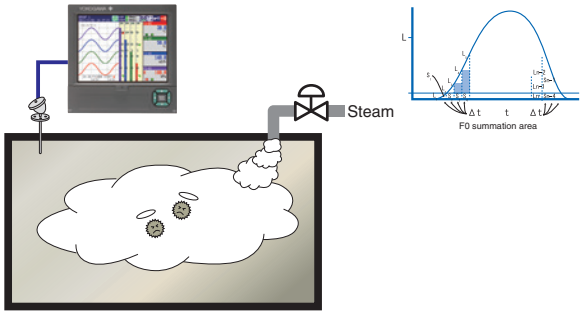
– Select from a variety of inputs (universal input)
– Displays temperature and wire diameter simultaneously for monitoring of correlations
– On-site monitoring and recording of diameter, temperature, and alarms upon occurrence of abnormalities



Managing Sterilization of Food Industry (Acquisition of Sterilization/Pasteurization Data)

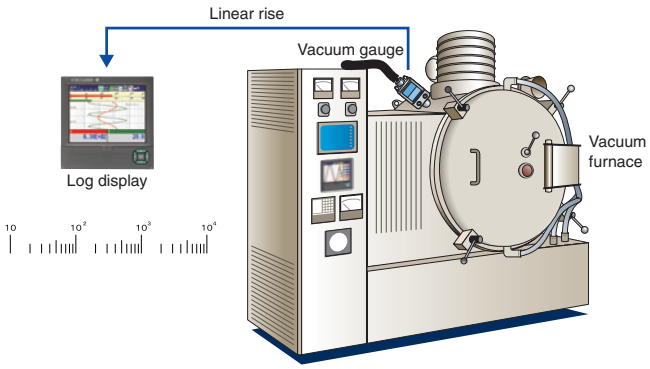
MATH function (/M1, /PM1, /PWR1 or /PWR5 options) enables recording (and F value calculation) of sterilization and pasteurization processes.

– Automatically computes F0 value according to temperature
– Computed results are recorded together with temperature and other parameters (Foodstuff temperature, pressure, etc.)
– Measurement ON/OFF through external contact input (/R1, /PM1 options)



Vacuum Gauge Recording

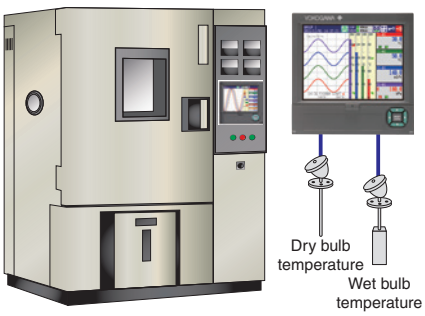
Physical quantities of voltage converted to logs are input to the FX, and those physical quantities are displayed and recorded on the FX log scale.



Display and Recording of Data from Environmental Testing Equipment (Acquisition of Test Data from a Thermostatic Chamber)

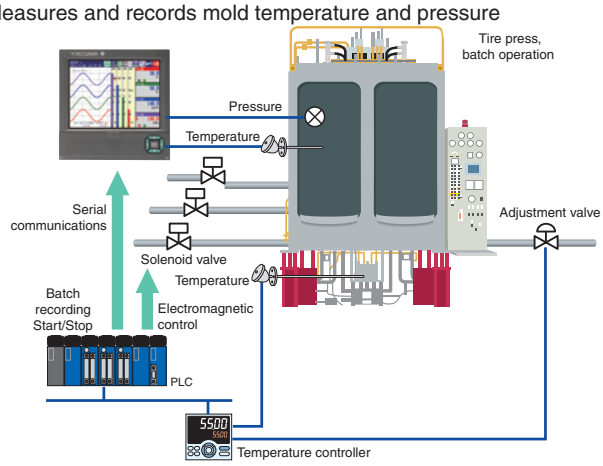
Measures environmental testing data, and displays and records a variety of data in an easy-to-understand format

– Select from a variety of inputs (universal input)
– Automatically computes relative humidity from dry bulb temperature and web bulb temperature (/M1, /PM1, /PWR1 or /PWR5 options)
– Computed results are recorded together with temperature and humidity (pressure and current)



Controlling Temperature and Pressure in Tire Manufacturing (Vulcanization)

Measures and records mold temperature and pressure



Specification • Performance

STANDARD SPECIFICATIONS

GENERAL SPECIFICATIONS

●Construction

Mounting: Flush panel mounting (on a vertical plane)
Mounting may be inclined downward up to 30 degrees from a horizontal plane.

Allowable panel thickness:
2 to 26 mm

Front panel: Water- and dustproof: Complies with IEC529-IP65 (excluding side-by-side mounting)

●Input

Number of inputs: FX1002: 2 channels, FX1004: 4 channels, FX1006: 6 channels, FX1008: 8 channels, FX1010: 10 channels, FX1012: 12 channels

Measurement intervals:
FX1002, FX1004: 125 ms, 250 ms
FX1006, FX1008, FX1010, FX1012: 1 s, 2 s, 5 s

Inputs: DCV (20, 60, 200 mV, 1, 2, 6, 20, 50 V, 1-5 V)
TC (R, S, B, K, E, J, T, N, W, L, U, WRe)
RTD (Pt100, JPt100)
DI (Contact input, TTL level)
DCA (with external shunt resistor attached)

Measurement/display accuracy:
Standard operating conditions: Temperature: 23 ± 2°C; Humidity: 55% ± 10%RH; Power supply voltage: 90 to 132 or 180 to 250 VAC; Power supply frequency: 50/60 Hz ± 1%; Warm-up time: At least 30 minutes. Other ambient conditions such as vibration should not adversely affect the operation.

Input	Range	Measurement Accuracy	Digital Display Max. Resolution
DCV	1-5 V	±(0.05% of rdg+3 digits)	1 mV
Thermocouple*	K	±(0.15% of rdg + 0.7°C) –200 to –100°C: ±(0.15% of rdg + 1°C)	0.1°C
RTD	Pt100	±(0.15% of rdg+0.3°C) 0.1°C	0.1°C

* Does not include the accuracy of reference junction compensation

●Display

Display: 5.7-inch TFT color LCD (240 × 320 dots)
* A section of the LCD monitor may contain pixels that are always on or off. The brightness of the LCD may also not be uniform due to the characteristics of the LCD. This is not a malfunction.

Display groups:
Number of groups: 10
Number of channels that can be assigned to each group: Up to six

Display color:
Channel: Select from 24 colors
Background: White or black (selectable)

Trend display: Layout: Vertical, horizontal, or wide
Bar graph display: Direction: Vertical or horizontal (selectable)
Digital display: Update rate: 1 s
Overview display: Measuring values and alarm status of all channels
Information display: Alarm summary, message summary, memory summary, report, stacked bar graph, status, Modbus status
Modbus log display: Displays the login log, error log, communication log (/C2, /C3, and /C7), FTP log (/C7), Web log (/C7), e-mail log (/C7), SNTP log (/C7), and DHCP log (/C7)

Tag display:
Number of displayable characters: Up to 16
Displayable characters: English, Japanese, and Chinese

Messages:
Number of displayable characters: Up to 32 alphanumeric
Displayable characters: English, Japanese, and Chinese

Historical display function:
Plays back data from internal memory or external memory media.

Back light saver function:
LCD back light dims or turns OFF (user selectable) if no keys have been pressed for a specified period (1, 2, 5, 10, 30, or 60 min).

●Data Saving Function

External storage medium:
Medium: CompactFlash memory card (CF card) (on FXs with a CF card slot)
SD memory card (on FXs with a SD card slot)

Internal memory:
Medium: Flash memory
Format: FAT32 or FAT16
Capacity: 400 MB
Maximum number of files that can be saved: 400 (total number of display data and event data files)
Operation: FIFO (First In, First Out)

●Alarm Function

Number of alarm levels: Up to four for each channel
Alarm types: High limit, low limit, differential high limit, difference low limit, high rate-of-change limit, low rate-of-change limit, alarm delay high limit, and alarm delay low limit

●Event Action Function

General: A particular action can be executed by particular event.
Number of event actions: 40 actions can be set

●Security Functions

General: Login function or key lock function can be set for each key operation or communication operation.
Key lock function: On/off and password can be set for each operation key and FUNC operation.
Login function: User name and password to login can be set.
System administrators: 5 (with access to all operations)
Users: 30 (with access to operations based on their user access rights)

●Clock

Clock: With calendar function (Western calendar)
Accuracy: ±50 ppm (0 to 50°C); does not include the delay (1 second or less) that occurs when the power is turned on.

●Batch Function

General: Data display and data management with batch name, text field function and batch comment function are available.

●Power Supply

Rated power supply: 100 to 240 VAC (automatic switching)
Allowable power supply voltage range:
90 to 132 or 180 to 264 VAC
Rated power supply frequency:
50/60 Hz (automatic switching)
Power consumption: Max. 45 VA (for 240 VAC power supply)

NORMAL OPERATING CONDITIONS

Supply voltage: 90 to 132, 180 to 250 VAC
Rated power supply frequency:
50 Hz ±2%, 60 Hz ±2%
Ambient temperature: 0 to 50°C
Ambient humidity: 20 to 80% RH (at 5 to 40°C), 10 to 50% (at 40 to 50°C)

OPTIONS

●Alarm Output Relay (/A1, /A2, /A3, and /A4A)

Action: Outputs relay contact signals from the terminals on the rear panel when alarms occur.
Number of outputs: 2 (/A1), 4 (/A2), 6 (/A3), and 12 (/A4A)
Relay contact rating: 250 VAC (50/60 Hz)/3 A, 250 VDC/0.1 A (for resistance load)
Output format: NO-C-NC: Except /A4 option,
NO-C: /A4A option
Relay operation: Energized/de-energized, AND/OR, hold/non-hold, and reflash settings are selectable.

●RS-232 Interface (/C2) and RS-422A/485 Interface (/C3)

Connection: EIA RS-232(/C2) or EIA RS-422/485(/C3)
Protocol: Dedicated protocol or Modbus protocol
Setting/measurement server function:
Operation, setting or output of measurement data are available by FX private protocol.
Modbus communication:
Reading or writing of measurement data on other instruments are available by Modbus protocol.*
* The /M1, /PM1 or /PWR1, /PWR5 option is required to read data from another instrument.

●Ethernet Communication Interface (/C7)

Electrical and mechanical specifications:
Conforms to IEEE 802.3 (Ethernet frames conform to the DIX specification).
Medium: Ethernet (10BASE-T)
Protocol: Dedicated protocol as well as the TCP, IP, UDP, ICMP, ARP, DHCP, HTTP, FTP, SMTP, SNTP, and Modbus protocols
E-mail client: Automatically send e-mail at specified times.
FTP client, FTP Server, Web server, SNTP client, SNTP server, DHCP client, Modbus client, Modbus server

●FAIL/Status Output Relay (/F1)

The relay contact output on the rear panel indicates the occurrence of CPU failure or selected status.

●Computation Function (Including the Report Function) (/M1)

Used for calculating data, displaying trends and digital values, and recording calculated data assigned to channels.
Number of computation channels:
FX1002 and FX1004: 12 channels
FX1006, FX1008, FX1010, and FX1012: 24 channels
Max. characters in formulas: 120
Operation: General arithmetic operations, relational operations, logic operations, statistical operations, special operations, conditional operations
Constants: Up to 60 (K01 to K60)
Report functions:
Report type: Hourly, daily, hourly + daily, daily + weekly and daily + monthly
Operation: Average, maximum, minimum, instantaneous and summation

●3-Wire Isolated RTD Input (/N2)

All the RTD input terminals (A, B, and b) are isolated on each channel.
Applies to the FX1006, FX1008, FX1010, and FX1012
Note: On the FX1002 and FX1004 standard models, the A, B, and b terminals are already isolated on each channel.

●Extended Input (/N3F)

This option allows the extra input types below to be added to the standard input types.
TC: Kp vs Au7Fe, PLATINEL, PR40-20, NiNiMo, W/Wre26, TypeN (AWG14), XK GOST
RTD: Ni100 (SAMA), Ni100 (DIN), Ni120, Pt100 GOST, Cu100 GOST, Cu50 GOST, Pt200(WEED)

●DC/AC 24 V Power Supply (/P1)

Rated supply voltage: 24 VDC and 24 VAC (50/60Hz)
Allowable power supply voltage range:
21.6V to 26.4 VDC/AC
Max. power consumption:
18 VA (24 VDC), 30 VA (24 VAC (50/60 Hz))

●Remote Control (/R1)

This option allows eight functions to be controlled remotely by a contact input.

●24 VDC Transmitter Power Supply (/TPS2 and /TPS4)

Output voltage: 22.8 to 25.2 VDC (under rated load current)
Rated output current: 4 to 20 mADC
Max. output current: 25 mADC (overcurrent protection operation current: approx. 68 mADC)

●USB Interface (/USB1)

USB port: Complies with rev. 1.1 and host function
Number of ports: 1 (front panel)
Connectable devices: Keyboard complies with HID Class Ver. 1.1
104 keyboard/89 keyboard (US) and 109 keyboard/89 keyboard (Japanese)
External medium: USB flash memory
Does not guarantee the operation of all USB flash memories.

●Pulse Input (/PM1)

Accepts pulses via contact input or open collector signals to dedicated input terminals (remote input).
Pulse input option includes mathematical functions option (/M1) and remote control option (/R1).
Number of inputs: 3 (8 are available if using remote inputs)
Input format: Photocoupler isolation (shared common)
Isolated power supply for input terminal (approx. 5 V)
Input type: Voltage-free contact, open collector

●Calibration Correction (/CC1)

Corrects the measured values of each channel using segment linearizer approximation.
Number of segment points: 2 to 16

●Power Monitor (/PWR1, /PWR5)

By including power measurement elements in an expression, you can measure a variety of power values.
Active power, regenerative electric power, reactive power, apparent power, voltage, current, frequency, power factor (LEAD:–, LAG: +), and electric energy (active energy, regenerative energy, reactive energy –LAG: +, reactive energy –LEAD: –, and apparent energy)
The MATH option (/M1) is included with the power monitoring option.
Phase and wiring system:
Single-phase two-wire system, single-phase three-wire system, and three-phase three-wire system
Frequency: 45 to 65 Hz
Rated input voltage:

Rated Voltage	Voltage Range (Variable)	Allowable Input Voltage
120 V	120 V	150 V
240 V	240 V	300 V

Rated input current

Optional code	Rated Current	Current Range (Fixed)	Allowable Input Current
/PWR1	1 A	1 A	1.2 A
/PWR5	5 A	5 A	6 A

Rated input power and measuring range: The VT and CT's secondary side when using VT and CT.

Single-phase two-wire system

Optional code	Input (AC)	Rated Power	Input Measuring Range[1]
/PWR1	120 V / 1 A	100 W	-120 to 120 W
	240 V / 1 A	200 W	-240 to 240 W
/PWR5	120 V / 5 A	500 W	-600 to 600 W
	240 V / 5 A	1000 W	-1200 to 1200 W

Single-phase three-wire system

Optional code	Input (AC)	Rated Power	Input Measuring Range
/PWR1	200 V / 1 A	200 W	-240 to 240 W
/PWR5	200 V / 5 A	1000 W	-1200 to 1200 W

Three-phase three-wire system

Optional code	Input (AC)	Rated Power	Input Measuring Range
/PWR1	120 V / 1 A	200 W	-240 to 240 W
	240 V / 1 A	400 W	-480 to 480 W
/PWR5	120 V / 5 A	1000 W	-1200 to 1200 W
	240 V / 5 A	2000 W	-2400 to 2400 W

The input measuring range when you are using a VT and CT is calculated using the following equation. The measuring range must be within the input measuring ranges listed above, and the primary side input power[2] must be less than 10 GW.
1: Input measuring range (W) = Primary side input power in W*2/(VT ratio × CT ratio).
2: Primary side input power = Secondary side rated power in W × 1.2 × VT ratio × CT ratio.

VT ratio/CT ratio: By setting the VT and CT ratios, input to the FX is converted to the primary side input value before the VT/CT and displayed.
Low cut power function: A power measurement element is included in which power below a specified value is treated as 0.
This is used when calculating power as watt hours.
Setting range: 0.05 to 20.00% of the rated power
Update interval: 1 sec.
Power computation:
With TLOG, SUM, or the report function, you can measure watt hours (active watt hours, regenerated energy, var-hours (LAG: +), var-hours (LEAD: –), volt-ampere-hours).
Measurement accuracy

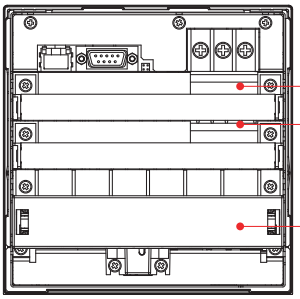
Item	Measurement Accuracy (Instantaneous Values)
Active power (W)	/PWR1:±1.0% of Range, /PWR5:±0.5% of Range
Voltage (V), current (A)	/PWR1:±1.0% of Range, /PWR5:±0.5% of Range
Apparent power, reactive power, power factor	Value calculated from the measured value ±1 digit
Frequency	±1.0 Hz

●Log Scale (/LG1)

Function: A logarithmic voltage that has been converted from a physical value is applied to the FX, and then the FX's Log scale (logarithmic scale) is used to display and record the physical value.
Input type: Log input: Logarithmic input (LogType1)
Log linear input: Input that is linear on a logarithmic scale (LogType2)
Range: 20 mV, 60 mV, 200 mV, 2 V, 6 V, 20 V, 50 V, and 1 V
Unit symbol: Any character string up to 6 characters in length
Scalable range:
Log input (LogType1)
1.00E–15 to 1.00E+15 (15 decades maximum)
Lower limit mantissa range: 1.00 to 9.99.
Upper limit mantissa range: 1.00 to 9.99.
Scale_L < Scale_U
If the lower limit mantissa is 1.00, the difference between the exponents must be 1 or more.
If the lower limit mantissa is a value other than 1.00, the difference between the exponents must be 2 or more.
Log linear input (LogType2)
Lower limit mantissa range: 1.00 to 9.99. Upper limit mantissa range: N/A (the value is the same as the lower limit mantissa).
If the lower limit mantissa is 1.00, the value must be between 1.00E–15 and 1.00E+15, the difference between the exponents must be 1 or more, and the maximum decades is 15.
If the lower limit mantissa is a value other than 1.00, the value must be between 1.01E–15 and 9.99E+14, the difference between the exponents must be 1 or more and the maximum decades is 14.
Alarm:
Kind: High limit, low limit, delay high limit, and delay low limit
Range 1.00E–16 to 1.00E+16, mantissa: 1.00 to 9.99
Hysteresis: 0% (fixed)
Color scale band range: 1.00E–16 to 1.00E+16, mantissa: 1.00 to 9.99
The display position lower limit must be less than the display position upper limit.
Number of mantissa display digits: 2 or 3

Terminal Arrangement

This is the arrangement of the terminals for models and options. For combinations of models and options, see the chart of models and option codes.



NC Symbols such as "NC" indicate the terminal functions.

Alarm output, FAIL, Status
NC : Normally closed
C : Common
NO : Normally opened

Remote control input
1 to 8 : Remote control terminal number
C : Common

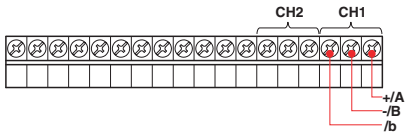
Pulse input
H and L

Transmitter power supply output
+ and –

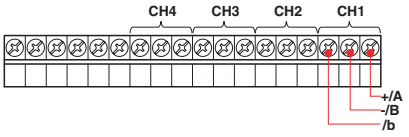
A terminal that is not used.

Arrangement of the Input Terminals

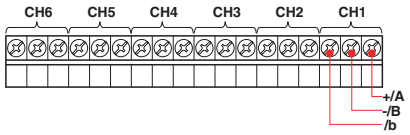
Input terminal block of the FX1002



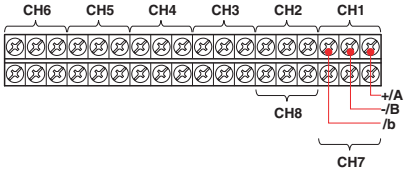
Input terminal block of the FX1004



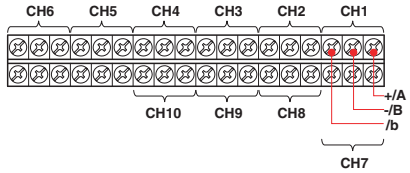
Input terminal block of the FX1006



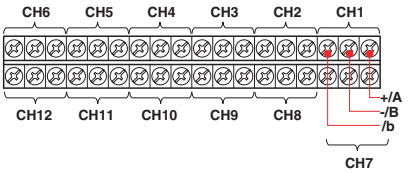
Input terminal block of the FX1008



Input terminal block of the FX1010

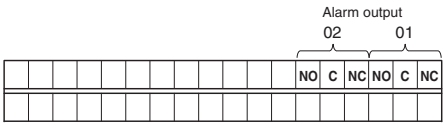


Input terminal block of the FX1012

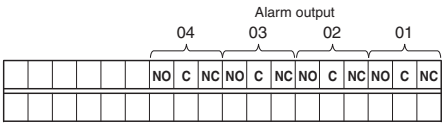


Arrangement of the Optional Terminals

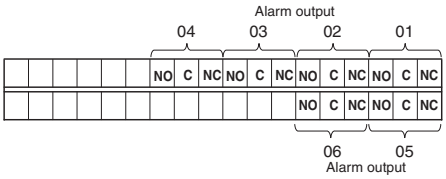
/A1



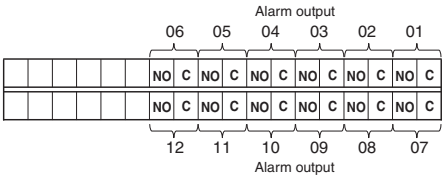
/A2



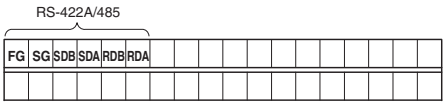
/A3



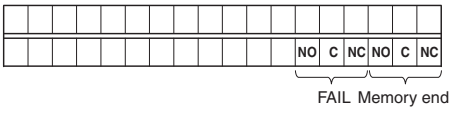
/A4A



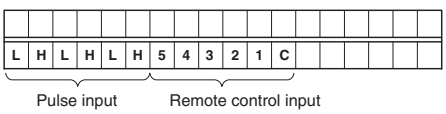
/C3



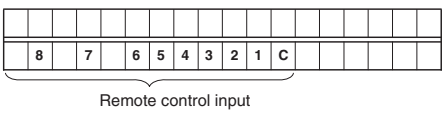
/F1



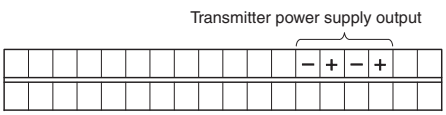
/PM1



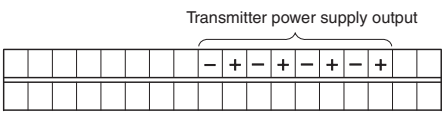
/R1



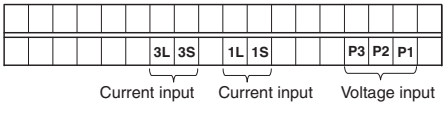
/TPS2



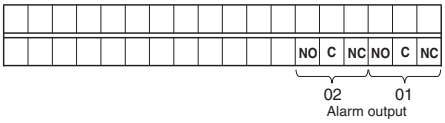
/TPS4



/PWR1, /PWR5



/A1 when installed in the FX with a /TPS2



Model and Suffix Codes

Model code	Suffix code			Optional code	Description
FX1002					2 ch, Shortest measurement interval: 125 ms
FX1004					4 ch, Shortest measurement interval: 125 ms
FX1006					6 ch, Shortest measurement interval: 1 s
FX1008					8 ch, Shortest measurement interval: 1 s
FX1010					10 ch, Shortest measurement interval: 1 s
FX1012					12 ch, Shortest measurement interval: 1 s
External storage medium slot	-0				Without CF/SD card slot and medium (Note)
	-4				With CF card slot and medium (512 MB)
	-7				With SD card slot and medium (1 GB)
Language		-2			English/German/French, deg F and DST
Withstanding voltage between measuring input terminals			-H		1000 VAC (50/60 Hz), 1 min
			-L		400 VAC (50/60 Hz), 1 min
Options				/A1	Alarm output 2 points (C-contact)*10
				/A2	Alarm output 4 points (C-contact)*1
				/A3	Alarm output 6 points (C-contact)*1*3
				/A4A	Alarm output 12 points (A-contact)*1*3
				/C2	RS-232 interface*2
				/C3	RS-422A/485 interface*2
				/C7	Ethernet interface
				/F1	FAIL/Status output*3
				/M1	Mathematical functions (including Report functions)
				/N2	3 leg isolated RTD*4
				/N3F	Extended input type (without Pt1000)
				/P1	24 VDC/AC power supply
				/R1	Remote control 8 points*5
				/TPS2	24 VDC transmitter power supply (2 loops)*10
				/TPS4	24 VDC transmitter power suply (4 loops)*7
				/USB1	USB interface (1 port)
				/PM1	Pulse input 3 points, Remote control 5 points (including Mathematical functions)*8
				/CC1	Calibration correction function
				/LG1	Log scale
				/PWR1	Power monitor (1A range, including Mathmatical functions)*9*10*11
				/PWR5	Power monitor (5A range, including Mathmatical functions)*9*10*11

*1 Any combination of /A1, /A2, /A3, and /A4A cannot be specified together.
*2 /C2 and /C3 cannot be specified together.
*3 If /A3 or /A4A is specified, /F1 cannot be specified.
*4 /N2 cannot be specified for FX1002 and FX1004.
*5 If /R1 is specified, /A4A, /TPS2, /TPS4, /PM1, /PWR1 or /PWR5 cannot be specified.
*6 If /TPS2 is specified, /TPS4, /A2, /A3, /A4A, /F1, /R1, or /PM1 cannot be specified.
*7 If /TPS4 is specified, /TPS2, /A1, /A2, /A3, /A4A, /F1, /R1, or /PM1 cannot be specified.
*8 If /PM1 is specified, /A4A, /M1, /R1, /TPS2, /TPS4, /PWR1 or /PWR5 cannot be specified.
*9 If /PWR1 or /PWR5 is specified, /A3, /A4A, /F1, /R1, /PM1, or /M1 cannot be specified.
*10 The three options /TPS2, /PWR1 or /PWR5, and /A1 cannot be specified together.
*11 /PWR1 and /PWR5 cannot be specified together.
Note: To load data, the FX must be equipped with a communication interface (/C2, /C3, or /C7 option) or the USB interface (/USB1 option).

Standard Accessories
Mounting brackets (2), FX1000 Safety Precautions and Installation Guide Installing the FXA120 DAQSTANDARD FX1000 Mode Transition Diagram Setting Mode / Basic Setting Mode Maps (1), CF card (512MB; On FXs that have a CF card slot (suffix code -4.), SD card (1GB; On FXs that have a SD card slot (suffix code -7.), CF/SD card capacity is subject to change.

Precaution on purchasing the Log scale (Optional code, /LG1)
To support the nonlinear output of vacuum gauges, the FX must be required with the Log scale (/LG1) and the calibration correction function (/CC1).

Accessories (Sold Separately)

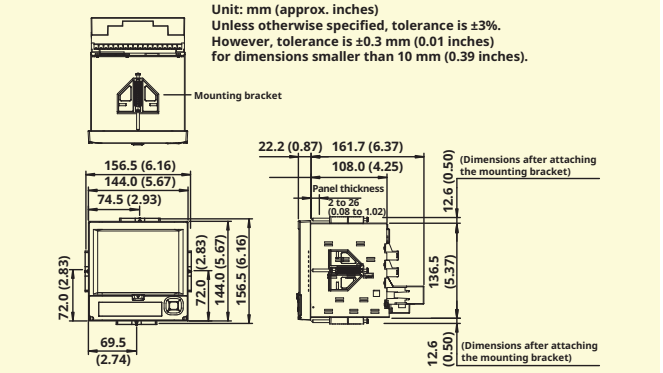
Name	Model	Notes
Shunt resistor	X010-250-3	250 Ω ± 0.1%
	X010-100-3	100 Ω ± 0.1%
	X010-010-3	10 Ω ± 0.1%
CF card	772093	512 MB
	772094	1 GB
	772095	2 GB
SD card	773001	1 GB
Mounting brackets	B8730BU	–
Terminal screws	B8730CZ	M3 (spares for I/O terminals)
	B8730CY	M4 (spares for power terminals)

Application Software

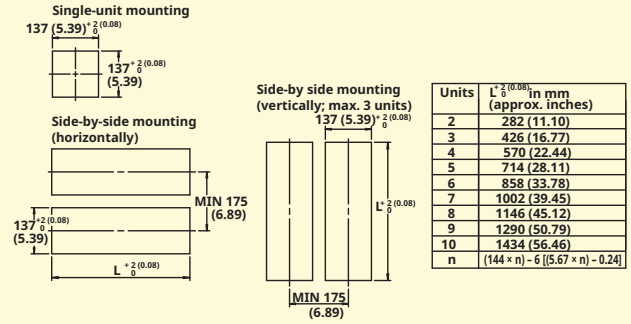
Model code	Description
FXA120	DAQSTANDARD for FX1000

External Dimensions/Panel Cut Dimensions

External dimensions



Panel cut dimensions



Units	L +2 0 (0.08) in mm (approx. inches)
2	282 (11.10)
3	426 (16.77)
4	570 (22.44)
5	714 (28.11)
6	858 (33.78)
7	1002 (39.45)
8	1146 (45.12)
9	1290 (50.79)
10	1434 (56.46)
n	(144 × n) – 6 [(5.67 × n) – 0.24]

NOTICE
Before operating the product, read the instruction manual thoroughly for proper and safe operation.

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