

NEW

YOKOGAWA 

Datum-Y™

Portable Data Station XL100 Series

Compact data logger offering best-in-class noise resistance and communication function

A world's first in measuring instruments!

To obtain IPv6 Ready Logo Phase-1 certification



ID:01-000273



CE

Size: 155 (W)×155 (H)×55 (D) mm
Weight: Approx. 800 g
(Without battery and rubber boot)

Robust design that achieves high performance and simple operation

Offering wide-ranging functions to support data measurement and acquisition

Comes standard with a set of communication functions that facilitate data acquisition

Yokogawa Meters & Instruments Corporation

Bulletin XL100-E

Suitable for Various Measurement / Acquisition Applications

Datum-Y is a portable data logger that directly measures and acquires temperature (thermocouple/resistance temperature detector) and DC voltage. It provides two configurations of input terminals offering eight and 16 channels, respectively. Individual channels can be set independently through universal insulated inputs. The compact unit is designed to achieve high performance and easy operation on site. Datum-Y provides wide-ranging functions and various communication capabilities to support diverse data acquisition applications.

Main Applications

- Variety of simple temperature tests and evaluations (thermostatic chambers, electric furnaces, inverter control units, etc.)
- Acquisition of facility maintenance data (data on the same time scale such as temperature, voltage, pulse, etc.)
- Remote monitoring of analog data utilizing intranet LAN
- Acquisition of electric power and temperature data on the same time scale during energy-saving operation

Compact & High Performance!

All Channels Adopt Universal Insulated Inputs

The channels in the analog input part adopt insulated inputs, which means that temperature (thermocouple/resistance temperature detector) and voltage can be set differently for each channel. The digital inputs are equipped with one pulse channel and two logic channels.



Analog and digital channels can be used in combination.

Best-in-Class Noise Resistance

Datum-Y achieves excellent noise resistance rated among the best in the class of handy measuring products. With Datum-Y, stable measurement is possible in various noise environments, such as when measuring inverter-driven machines or thyristor-controlled units that are commonly used for energy-saving purposes.



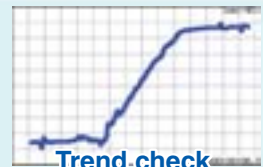
Reliable measurement

Data Saving at 100 ms

Datum-Y saves data at the maximum speed of 100 ms (when the 8-channel terminal block is used).

You can save data in either binary format or ASCII format (for display in Excel*). Binary data can be checked on site in the review mode or shown in waveforms using the supplied "D-TOOL" software.

* Excel is a registered trademark of Microsoft Corporation.



Trend check

Acquisition of Large Amounts of Data Using External Storage Media

Acquisition of Large Amounts of Data Using External Storage Media

Datum-Y lets you save data not only in its internal memory (16 MB), but also in external storage media such as compact flash memory cards* and SD cards* (up to 512 MB).

Data saved in these media can be copied to a USB memory* for easy transfer to a PC.

* Use compact flash memory cards, SD cards and/or USB memory whose compatibility with Datum-Y has been verified.

Recording time (approximate): When a 64 MB external storage medium is used (One year is counted as 365 days.)

Measurement interval	Number of measurement channels				
	1ch	8ch	16ch	16ch + Calculation 32ch	16ch + Calculation 32ch + Communication 32ch
100ms	36.7 days	4.6 days	-	-	-
200ms	73.5 days	9.2 days	4.6 days	22 hrs	12 hrs
500ms	184 days	23 days	9.2 days	2.3 days	30.6 hrs
1 sec	1 year	46 days	23 days	4.6 days	2.6 days
2 sec	2 years	92 days	46 days	9.2 days	5.1 days
5 sec	5 years	230 days	114 days	23 days	13 days
10 sec	10 years	1.3 years	230 days	46 days	26 days
1 min	Omitted	7.6 years	3.8 years	276 days	153 days
5 min	Omitted	Omitted	Omitted	3.8 years	2 years

Robust, User-friendly Design

Compact Size

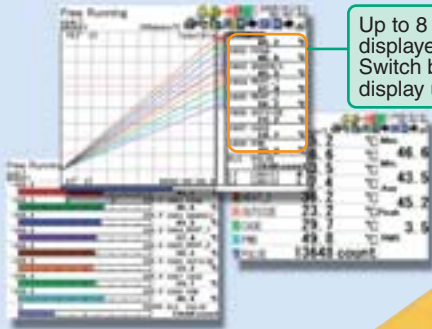
External dimensions:
155 mm x 155 mm x 55 mm
Weight: Approx. 800 g
Easy to carry

Space Saving

The analog inputs are wired from the left, while the power and communication lines are wired from the right. This design makes Datum-Y a suitable option in a narrow space.

Wide-view TFT LCD Screen

Datum-Y adopts a color TFT LCD screen offering a wide angle of view, so displayed data can be read clearly even from angled directions. You can select a desired display mode from among Waveform, Digital, Bar Graph and Waveform + Digital.



Up to 8 channels can be displayed in one screen. Switch between 4 groups to display up to 32 channels in total.

Protection on LCD

Improved Impact Resistance

The supplied rubber boot provide improved impact resistance. The rubber boot are removable.

Datum-Y fitted with rubber boot



Connector cover to protect against entry of powder dust

Operating Temperature: 0 to 50°C

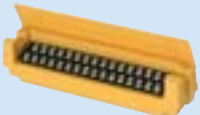
Datum-Y can be used in work areas subject to high temperatures. The unit is designed to withstand humidity in a range of 5 to 85%RH.

Detachable Terminal Block

Wiring is easy, since the terminal block can be removed with a single action.



Terminal block (for 16 channels)



M3 screws terminal block (for 16 channels)

Simple Operation

Direct operation keys are provided for measurement (free running, logging), review (checking of measured data), file management, and various setups. Each item can be set with a single hand. **Onscreen navigation of setting items eliminates the need to check the manual during setting.**

External inputs/outputs
External media port
RS-232
RS-485
LAN
USB memory port
USB port (for communication)

Built-in terminal screwdriver

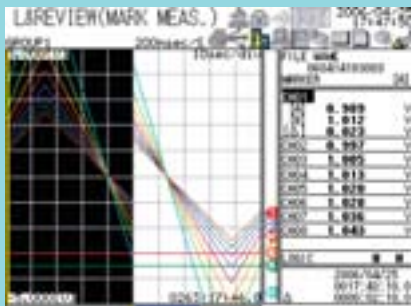


Built-in rechargeable battery

Useful Functions

Spot Check of Acquired Data

- You can check measured data (binary) on Datum-Y right away. Overall trend and alarm output can be checked on the spot immediately after acquisition.
- While Datum-Y is logging data, you can display past data and current data in the logging review mode for comparison and identification of trend. (This function is available only when binary data is acquired.)



Screen in Logging Review Mode

Calculation Function

Datum-Y is capable of inter-channel calculations (among channels, between channels and constants, etc.), statistical operations (minimum, maximum, average, root-mean-square and peak values from start to end of logging), and scaling.

Trigger Function

Datum-Y acquires data before and after a trigger (pre-trigger/trigger delay) to help you detect and analyze the cause of an error. You can select the single mode (a trigger is issued only once) or continuous mode (a trigger is issued every time the condition is satisfied).

Alarm Function

Datum-Y can be fitted with up to four alarm output channels. One alarm can be set for each input channel, and multiple channels can be combined freely with AND/OR gates. You can also use the e-mail delivery function to notify specified e-mail addresses upon occurrence or reset of an alarm.

Auto Set & Run Function (Automatic Measurement Function)

Simply connect an external storage medium (CF card, SD card or USB memory) containing a predefined file (AUTORUN.SET), and Datum-Y will change the necessary settings and take measurements automatically. (You need to enable the automatic measurement function of Datum-Y beforehand.)

Full Set of Communication Functions to Support Data Acquisition

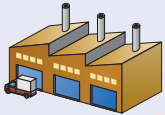
LAN

Datum-Y adopts standard protocols all network administrators familiar to with.

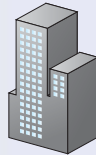
Datum-Y supports standard protocols such as HTTP, FTP, SMTP and SNTP based on Ethernet connection (10BASE-T, 100BASE-TX), so no dedicated software is necessary.

You can also use the user authentication function to permit access only to pre-registered users, in order to prevent illegal access to Datum-Y from networks. Up to seven users (one administrator and six users) can be pre-registered.

Field



Office



Web monitoring



The screen image is tentative. The actual screen may vary.

Ethernet (10BASE-T, 100BASE-TX)

● Web Server Function



You can monitor and operate Datum-Y's screens and functions via a web browser. The monitor screen can be updated automatically (every 5, 10 or 30 seconds) or manually. Select the monitor page where Datum-Y screens can be monitored, or the operator page where both monitoring and operation are possible. User authentication can be set for each page to prevent illegal access.

● FTP Server Function



You can output a list of files stored in Datum-Y's internal memory or connected external storage media, and transfer, delete or otherwise manipulate desired files.

● FTP Client Function



You can transfer the measurement data files/alarm data files created in Datum-Y's internal memory or connected external storage media, to a FTP server. Two file transfer destinations can be set (primary and secondary). If the primary FTP server goes down, files will be transferred to the secondary FTP server.

● E-mail Delivery Function



You can send e-mail to notify occurrence/reset of alarms, power recovery after outage, errors in external storage media, FTP client errors, and scheduled times. Up to two groups can be set, each containing a different set of recipients.

RS-485, RS-232

● Built-in Modbus Protocol Capability

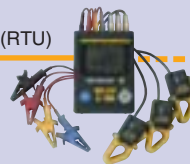
Serial communication (RS-232, RS-485) can be performed using a dedicated protocol as well as Modbus RTU and Modbus ASCII protocols that are supported by Datum-Y's standard capability. Datum-Y can be connected to other equipment to acquire data simultaneously with temperature/voltage. **32 dedicated communication channels are provided.**

Example of RS-232/RS-485 Connection

Temperature
Voltage



Modbus communication (RTU)



Clamp-on Power Meter
CW120 Series

Up to 31
units can be
connected.

Accurate measurement is possible even when loads fluctuate significantly.

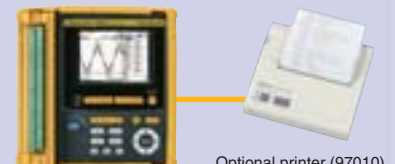
USB

Datum-Y connects one-on-one with a PC. You can acquire data, change Datum-Y settings or perform various other operations on Datum-Y from a PC.



RS-232 (Printer)

RS-232 (Printer)
You can connect a printer via RS-232 connection to print paper reports on site.

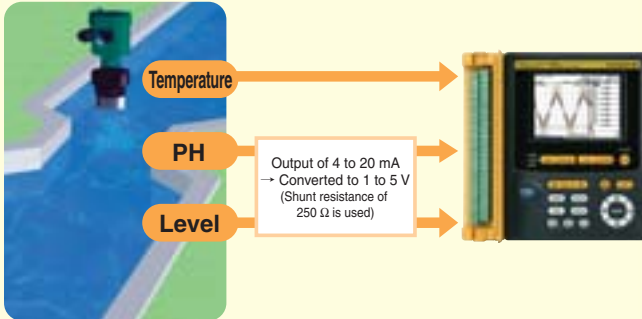


Optional printer (97010)

Application Examples

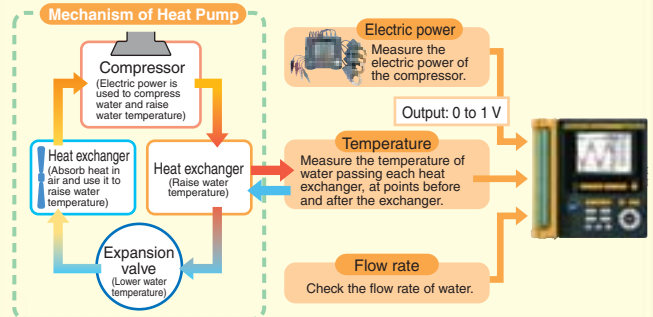
Evaluation Test of Wastewater Treatment System

Temperature, PH, and level data is acquired to check the efficiency of a wastewater treatment system. Only one Datum-Y is needed to acquire data of temperature, PH and level on the same time scale, so the processing man-hours of acquired data can be reduced. Being a portable device, Datum-Y also makes it easy to change measuring locations.



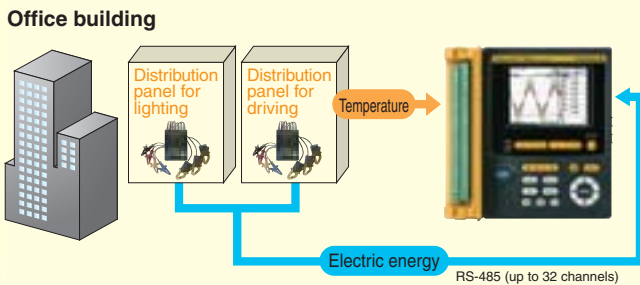
Thermal Efficiency Check of Heat Pump

Datum-Y provides an efficient way to check the thermal efficiency of a heat pump, as it can measure compressor power consumption as well as temperature and flow rate of supplied water to evaluate energy performance. Only one Datum-Y is needed to acquire data of temperature, electric power and flow rate on the same time scale, which reduces the man-hours needed to process acquired data. You can also use YOKOGAWA's clamp-on power meter to further reduce the time and effort needed to install a separate power meter.



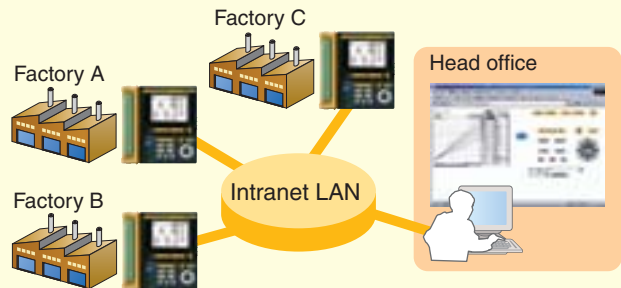
Power Measurement of Central Distribution Panel

Electric energy for each circuit can be measured simultaneously on multiple points on distribution panels for lighting/driving. All you need is one Datum-Y, since its RS-485 communication function lets you acquire data measured by power meters installed in multiple locations for lighting/driving. This reduces the time and effort needed to process acquired data.



Remote Temperature Monitoring of Each Factory

Datum-Y can be used to remotely monitor temperature data in each factory via an intranet LAN. Low-cost remote monitoring is possible, since Datum-Y supports HTTP, FTP and SMTP protocols and no dedicated software is needed. The portable device also lets you change settings easily if the line configuration has been changed. Data and alarm output can be notified periodically via e-mail.



Quick Conversion to Waveform View Using Standard Software "D-TOOL"

Main Functions

- Waveform display of measured binary data
- Enlarged view of waveforms along X/Y-axes
- Display of respective data taken at two points (measured value, measurement time) and the result of inter-channel calculation (B - A)
- Conversion to CSV for storage (skipping, saving of data between cursors)
- File division
- Settings and creation of setting files
- Copy function (clipboard copy)

Copy Function (Clipboard Copy)

A waveform graph or combination of graph and list can be copied and pasted into a different file. This is a useful function when creating a report.



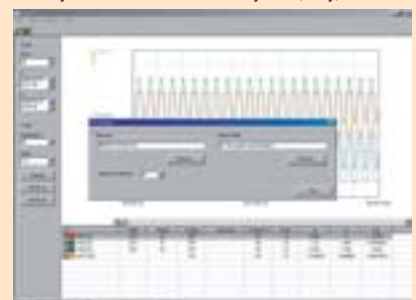
Conversion to CSV for Storage

Binary files can be converted to and saved in the CSV format. You can also skip data or save the data between cursors (A - B).



File Division

A large data file can be divided into smaller sub files. Use this function if a target file contains a large amount of data and reading it takes time, or when you want to divide a file by time, day, etc.



● Supported environment: Windows 2000*, Windows XP* * Windows 2000 and Windows XP are registered trademarks of Microsoft Corporation.