RTU MODULE SPECIFICATIONS

Refer to our website for information on the I/O modules.

GENERAL SPECIFICATIONS

Max. number of I/O modules: 16
(Max. consumption current of I/O modules: 1.6 A)
Isolation: Ethernet to internal bus or internal power or power supply (exc. supply) to RUN contact output to FE
Calendar clock: Year (4 digits), month, date, day, hour, minute, second
Status indicator LED: POWER, LOGGING, SD CARD, SEND, COM, ERROR
RUN contact output*1: Photo MOSFET relay (no polarity); (OFF in error detected)
*1. Run contact output is applicable for Type C with the DL8 firmware version 1.4.x or later.

ETHERNET COMMUNICATION

Communication Standard: IEEE 802.3u
Transmission: 10BASE-T, 100BASE-TX
Baud rate: 10/100 Mbps (Auto Negotiation function)
Protocol: TCP/IP, Modbus/TCP, SLMP, HTTP, HTTPS, FTP, FTPS, SMTP, SNTP
Transmission media: 10BASE-T (STP, Category 5), 100BASE-TX (STP, Category 5e)
Max. length of fieldbus segment: 100 meters
Ethernet indicator LED: DPLX, LNK
IP address: 192.168.0.1 (factory setting)

INSTALLATION

Power input: 24 V DC
Power consumption: Approx. 12 W 24 V DC @internal power max. current 1.6 A
Internal power supply (power supply for I/O module): 5 V DC, 1.6 A
Excitation supply output (excitation for I/O module): 24 V DC ±10 %, operational current 7 A
(From power supply (excitation supply) connector, via connector for internal bus, supplied to each I/O module. Power output current consumption must be under operational current.)
Operating temperature: -10 to +55°C (14 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Atmosphere: No corrosive gas or heavy dust
Mounting: DIN rail
Weight: 190 g (0.42 lb)

PERFORMANCE

Battery: Vanadium-lithium secondary battery (undetachable)
Calendar clock accuracy:
Monthly deviation 2 minutes at 25°C
Battery backup: Approx. 2 months
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1500 V AC @ 1 minute (Ethernet to internal bus or internal power or power supply (exc. supply) to RUN contact output to FE)

COMPATIBLE BROWSING DEVICE

■**Software requirement**
Functional checked environment
●**PC**
- **OS**: Windows 8.1 (32-bit/64-bit), Windows 10 (32-bit/64-bit)
- **Browser**: Internet Explorer 11, Microsoft Edge 96.0, Chrome 97.0, Firefox 95.0

●**Tablet**
- **OS**: iPad (iPadOS 15.2); Android terminal (Android 10.0)
- **Browser**: iOS: Safari; Android: Chrome

●**Smart phone**
- **OS**: iPhone (iOS 15.2); Android terminal (Android 10.0)
- **Browser**: (iOS) Safari; (Android) Chrome

COMMUNICATION

IP: DHCP client is supported. Manual setting of IP address, subnet mask, default gateway and DNS server available too.
Modbus/TCP slave:
Remote observation system via SCADA etc.
Number of connections 4
Modbus/TCP master: I/O expansion with remote I/O, e.g. R3 or R7 series, is available. Measuring points in multiple locations can be handled collectively.
SLMP Client: DL8 allows I/O expansion by connecting with the SLMP-compatible CPU unit of Mitsubishi programmable-controller MELSEC; and collectively handles data from measuring points in multiple locations.
Web server function (Direct):
This unit can be a Web server, and 'Data,' 'Trend' and 'Event Log' views are available from remote location.
Web server function (Cloud):
This unit can be an FTP client, and upload the Web files to a cloud server.
Users can browse the cloud server.
Multiple users can access it at once without extra load at the unit. (only browsing, operation not available.)
Analog input: 32 points
Discrete input: 64 points
Pulse input: 32 points
Discrete output: 64 points
Analog output: 32 points
(firmware version of the unit: 1.4.x or later)
(For pulse input, only 32 bit data is available. It is not available for the products using 16 bit data (model: R3-PA16 etc.).

ALARM OUTPUT

Type B, C, D, E

Event can trigger an alarm contact at a discrete output module.
- Transition of analog input zone
- Transition of pulse input zone
- Status change of discrete input
- Count up of discrete input

EVENT REPORTING

Type B, C, D, E

Reporting email function available at event or designated time.
Encrypted communication is supported. (SMTP over SSL).
The DL8 turns a designated Do ON after transmitting the report.
- Number of email attention: 32
- Number of event report text: 32
- Number of regular report text: 1
- Channel status: AI, DI, PI, DO, AO status attachable to email (DO and AO are available with firmware version of the unit 1.4.x or later)
- Output at transmitting failure: 1 point

LOGGING

Type C, D, E

Log files in text format are stored into an SD card.
The number of logs depends on the free space of the SD card.
- Log file: System log, event log, email report log, channel log

FTP CLIENT

Type B, C, D, E

The recorded data is uploaded to an FTP server and FTPS server (Type E) in CSV format in specified interval time.
User can define the CSV file.
- Number of channel: Max. 32 (Selectable within AI, DI, DI (counter), PI, DO, AO)
(AO is selectable with firmware version of the unit 1.4.x or later)
- Sampling rate (Firmware version 1.6.x or later)
1 or 2 sec (Interval time: 1 or 10 min. or 1 hr.)
5, 10 or 30 sec. (Interval time: 10 min. or 1 hr.)
1, 2, 5, 10, 15, 20 or 30 min. (Interval time: 1 day)
- Sampling rate (Firmware version 1.2.x or later)
1 or 2 sec (Interval time: 1 or 10 min. or 1 hr.)
5, 10 or 30 sec. (Interval time: 10 min. or 1 hr.)
1, 2, 5, 10 or 30 min. (Interval time: 1 day)
- Sampling rate (Firmware version 1.1.x or earlier)
1, 2, 5, 10 or 30 sec. (Interval time: 1 hr.)
1, 2, 5, 10 or 30 min. (Interval time: 1 day)

To confirm the firmware version, use the configurator software, model: DLCFG. Event can trigger an alarm contact at a discrete output module.

TREND DATA STORING

Type C, D, E

The logged data is written into the SD card in CSV format.
User can define the CSV file.
- Number of channels: Max. 32 (Selectable within AI, DI, DI (counter), PI, DO, AO)
(DO and AO are selectable with firmware version of the unit 1.4.x or later)
- AI sampling:
Momentary, average, peak (max.), peak (min.)
- Logging rate:
Second: 1, 2, 5, 10, 20, 30 sec.
Minute: 1, 2, 5, 10, 15, 20, 30 min. (15 min. is selectable with firmware version 1.5.x or later)
On the hour: 0 to 23 o'clock (1 or more times available; specify time delay for each set time)
Day start time and days to log are available.
- Recordable up to the SD card size.
Automatically deleted. (Auto delete is available with firmware version of the unit 1.4.x or later)
- Recording period (as a guide):
Approx. 180 days
(logging rate: 1 sec, 32 channels, only trend storing)

FTP SERVER

Type C, D, E

Reading and deleting files in the SD card by an FTP client and an FTPS client (Type E) are available.
Compatible FTP client
- Explorer
- FFFTP 4.4

Compatible FTPS client
- FFFTP 5.6

I/O MAPPING

Type D, E

Multiplex Data Transmission for remote I/O and IP telemeter is available by registering DI-to-DO or AI-to-AO mapping information.

USER DEFINED BROWSER VIEW

Type D, E

The browser view is user-definable.
Development tools for HTML file are not available by us. Provide by customer.

Website

Request Info

MG CO., LTD.
(formerly M-System Co., Ltd.)
www.mgco.jp

Your local representative:

2024-01
EC-7691 Rev.4

WEB DATA LOGGER DL8 Series

Web-Enabled Remote Terminal Unit for
Monitoring, Event Reporting and Data Logging

Web-Enabled Remote Terminal Unit for
Monitoring, Event Reporting and Data Logging

DL8 Series
Web Data Logger

CE

MG CO., LTD.
(formerly M-System Co., Ltd.)
www.mgco.jp

Make Greener automation

WEB DATA LOGGER DL8 SERIES

Web-Enabled Remote Terminal Unit for Monitoring, Event Reporting and Data Logging

Web Data Logger DL8 Series

Remote Monitoring System With High Cost Performance Accessible from Your Smartphone Anywhere through Internet

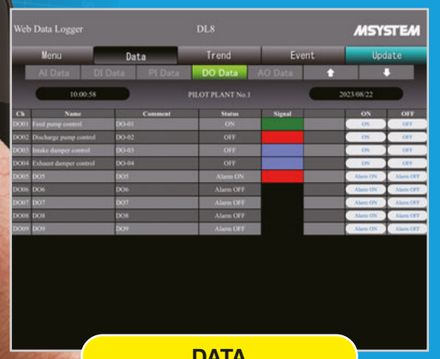
DL8 DEMO SITE

Browse trend and data monitor windows of the DL8 on our web site.

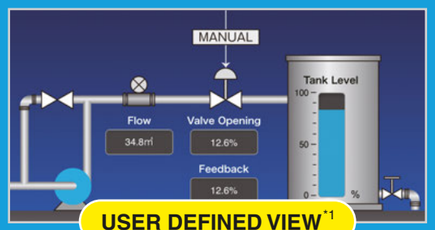
URL www.mgco.jp/english/products/weblogger/dl8_7.html

TREND

EVENT LOG



DATA



USER DEFINED VIEW[*1]

DATA LOGGING

EMAIL

*1. User Defined View is an optional feature available with the DL8-D and -E.

Pre-installed user-friendly browser views for smartphones

'**Data**,' '**Trend**' and '**Event Log**' views are ready for monitoring purpose. Each one is basic but useful, designed for ease of browsing on smartphones and tablets. No additional application program is needed, just have your mobile terminal with internet browser.

Browse, Report and Log

Five types of DL8 are available: Type A for '**Browsing**' function with an internet browser; Type B added with '**Reporting**' function by emails; Type C added with '**Logging**' function with an SD card memory, Type D added with '**I/O Mapping**' over Modbus/TCP network, and Type E added with '**Advanced Communication**' function supporting SLMP client and secure communications.

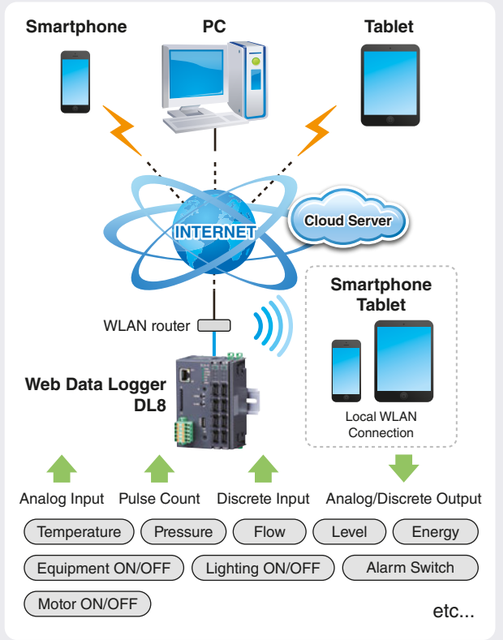
Flexible I/O signal types and scalable points

The DL8 is composed of an RTU module plus dedicated I/O modules for **analog I/O, status (discrete) I/O and pulse I/O** which can be used in free combinations to meet exact users' needs of I/O types and number of points.

The minimum configuration consists of two analog inputs or four discrete inputs, while the maximum consists of 32 analog inputs 32 analog outputs, plus 64 discrete inputs, 64 discrete outputs and 32 pulse count inputs.

Enjoy modern communication infrastructure

Various network protocols are usable: **TCP/IP**, **SLMP client**, **SMTP client**, **SNTP client**, **HTTP/HTTPS server**, **FTP/FTPS client and server**, **Modbus/TCP master and slave**. The latest communication infrastructure such as optical, ADSL, CATV broadbands, high-speed mobile communications and WLAN networks.



The DL8 may be used in monitoring applications which you thought were unable to meet your cost requirements.

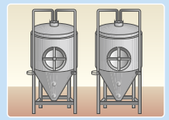
- ☑ Construction machine
- ☑ Large equipment
- ☑ Convenience store
- ☑ Greenhouse
- ☑ Elevated water tank
- ☑ Electric furnace
- ☑ Reservoir pond
- ☑ Winery/Brewery
- ☑ Building

Construction Machine

Convenience Store

Greenhouse

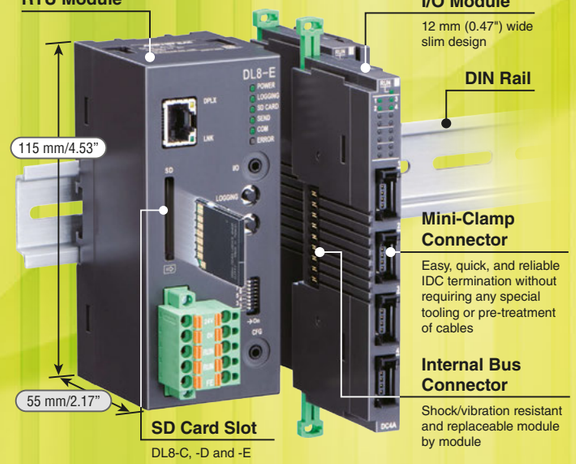
Large Equipment


Winery/Brewery

Building

- Screen images for illustration purposes only. The actual web browser views are subject to change without notice.
- Smartphones and/or telecommunication services are not our products.
- "Cloud server" mentioned in this document includes both paid and free services.

Selectable Features at Minimum Cost



RTU MODULE

'Browsing,' 'Reporting,' 'Logging,' 'I/O Marshalling and Advanced View' and 'Advanced Communication' functions can be combined to suit your applications at the minimum cost.

I/O MODULE (12-/24-mm wide)

Economical slim I/O modules are selectable by signal types and number of points up to 16 modules.
External Modbus/TCP slave modules can be also added.

■ RTU MODULE

Type	Featured Functions (See P.6)					Model
A	Browse	——	——	——	——	DL8-A
B	Browse	Report	——	——	——	DL8-B
C	Browse	Report	Log	——	——	DL8-C
D	Browse	Report	Log	I/O Marshalling Advanced View	——	DL8-D
E	Browse	Report	Log	I/O Marshalling Advanced View	Advanced Communication	DL8-E

■ I/O MODULE

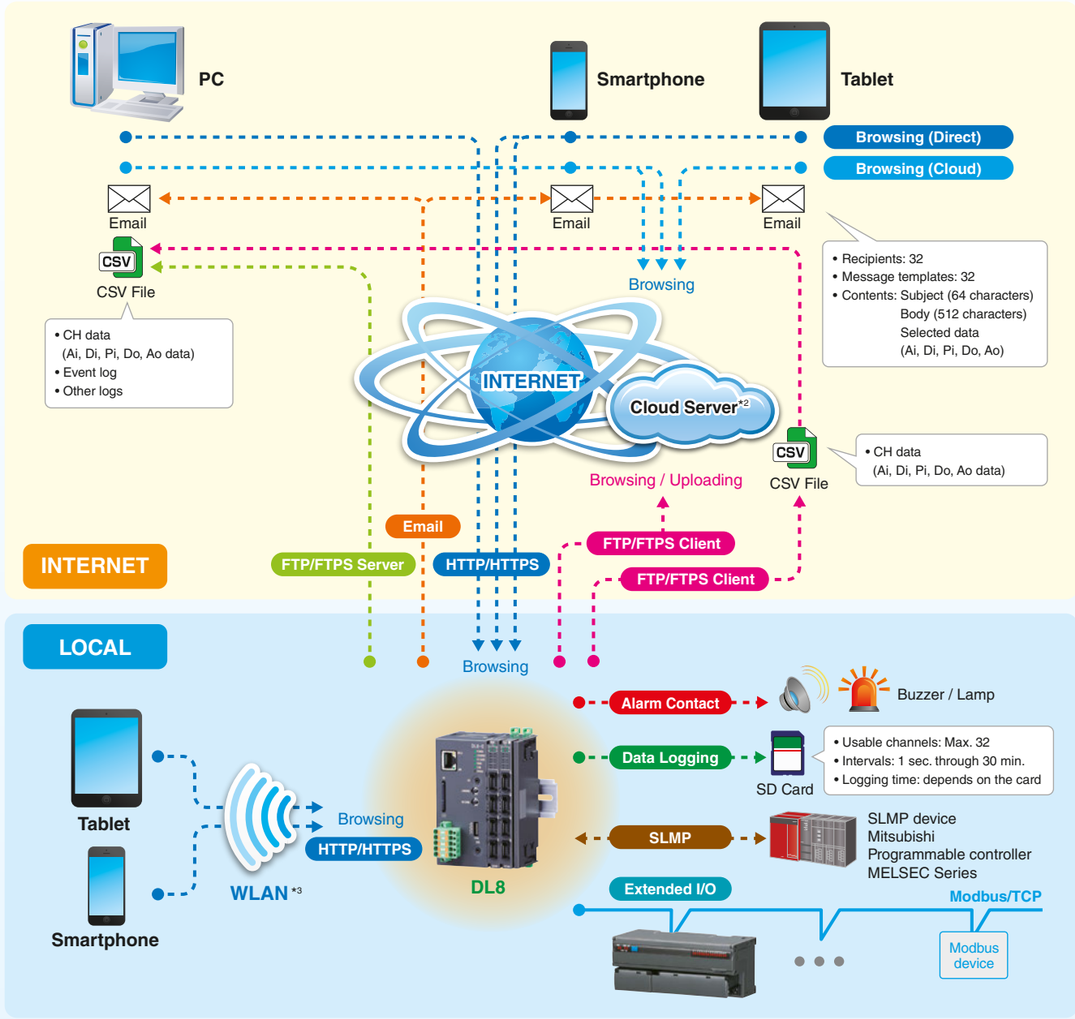
Signal Type	Max. Capacity*1 per module	Function	Model
Analog input	32 points	DC current input (2 points, isolated)	R8-SS2
		DC current input (4 points, non-isolated)	R8-SS4N
		DC current input (4 points, non-isolated, sensor exc.)	R8-SS4NJ
		DC current input (8 points, isolated, tension-clamp terminal block)	R8-SST8
		DC voltage input (2 points, isolated)	R8-SV2
		DC voltage input (4 points, non-isolated)	R8-SV4N
		Thermocouple input (2 points, isolated)	R8-TS2
		RTD input (4 points, non-isolated)	R8-RS4N
		DC voltage/current input (4 points, non-isolated, sensor exc., tension-clamp terminal block)	R8-FST4N
		DC voltage/current input (16 points, non-isolated, sensor exc.)	R8-FS16N
Discrete input	64 points	Contact input (4 points, NPN)	R8-DA4A
		Contact input (16 points, NPN)	R8-DAM16A
		Contact input (8 points, NPN, tension-clamp terminal block)	R8-DAT8A2
		Contact input (16 points, NPN, tension-clamp terminal block)	R8-DAT16A2
		Contact input (8 points, PNP, tension-clamp terminal block)	R8-DAT8B2
Pulse input	32 points	Totalized pulse input (4 points, NPN/PNP/voltage pulse)	R8-PA4
		High-speed totalized pulse input (4 points, NPN)	R8-PA4F
AC power input	32 points	AC current input (4 points, non-isolated, clamp-on current sensor)	R8-CT4E
Analog output	32 points	DC voltage output (4 points, non-isolated)	R8-YV4N
		DC current output (4 points, non-isolated, tension-clamp terminal block)	R8-YST4N
		DC current output (2 points, non-isolated, sensor exc.)	R8-YS2NJ
		DC current output (2 points, isolated)	R8-YS2
Discrete output	64 points	Transistor output (4 points, NPN, shortcircuit protection)	R8-DC4A
		Transistor output (4 points, NPN, voltage contact, shortcircuit protection)	R8-DC4A2
		Photo MOSFET relay output (4 points)	R8-DC4C
		Relay output (4 points, tension-clamp terminal block)	R8-DCT4D
		Transistor output (16 points, NPN, shortcircuit protection)	R8-DCM16A
		Transistor output (16 points, NPN, shortcircuit protection, full interlock)	R8-DCM16ALZ
		Transistor output (16 points, NPN, shortcircuit protection, full and individual interlock)	R8-DCM16ALK
		Transistor output (16 points, NPN, shortcircuit protection, full and partial interlock)	R8-DCM16ALH
		Transistor output (32 points, PNP, shortcircuit protection)	R8-DCM32B2
		Transistor output (8 points, NPN, shortcircuit protection, tension-clamp terminal block)	R8-DCT8A2
		Transistor output (16 points, NPN, shortcircuit protection, tension-clamp terminal block)	R8-DCT16A2
		Transistor output (8 points, PNP shortcircuit protection, tension-clamp terminal block)	R8-DCT8B2
Pulse output	32 points	Pulse output (4 points, open collector)	R8-PC4A

■ POWER SUPPLY

Function	Model
Power supply module for extension	R8-PS1

*1. Including extended remote I/Os

FUNCTIONS



*2. Cloud server services are not our products. *3. A WLAN access point is required to use wireless LAN network.

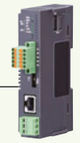
ETHERNET/RS-485 ADAPTOR FOR MODBUS

Bidirectional protocol converter for Modbus/TCP (Ethernet) and Modbus RTU (RS-485)

Communication Adaptor GR8 Series

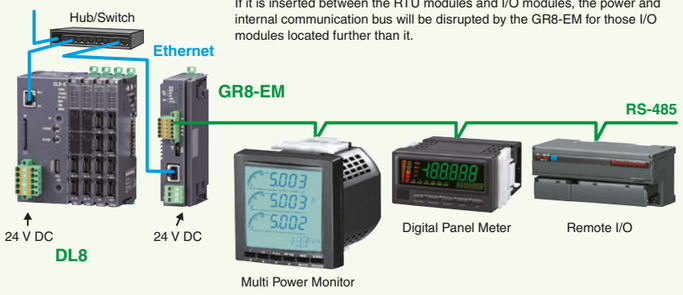
Ethernet/RS-485 Adaptor (Modbus use)

Model: GR8-EM



- Can be coupled with the DL8 or the R8 Series Remote I/O modules, or installed independently.
- I/O signals of RS-485 devices are connected to the DL8 via a hub/switch.

System Configuration



The GR8-EM must be connected at the end of DL8 with all I/O modules. If it is inserted between the RTU modules and I/O modules, the power and internal communication bus will be disrupted by the GR8-EM for those I/O modules located further than it.

FUNCTIONS

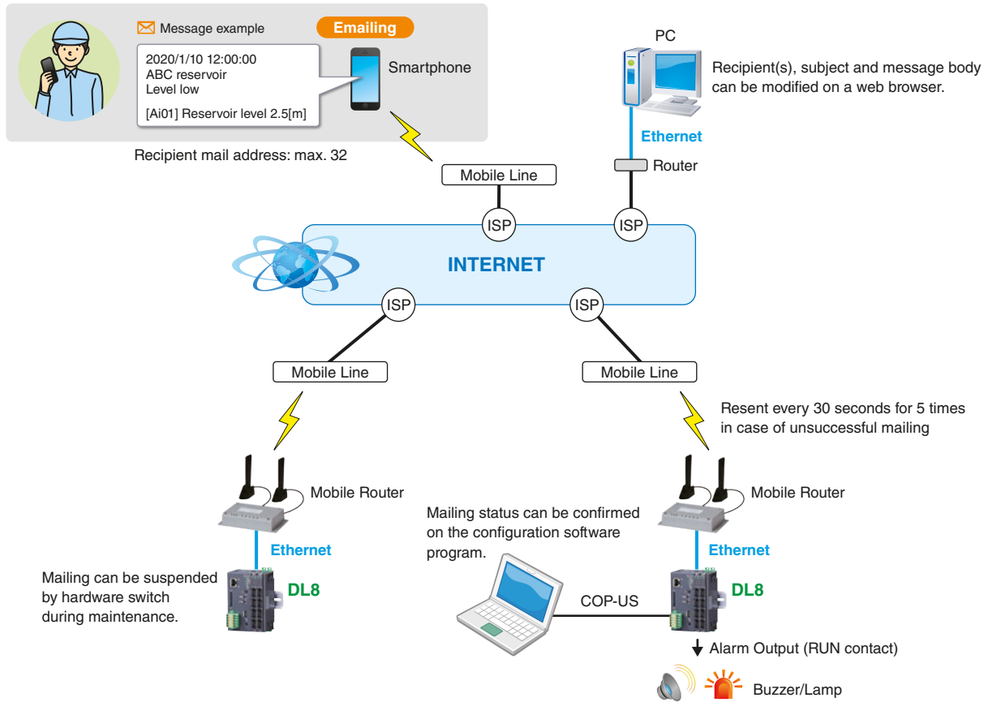
Type A	Type B	Type C	Type D	Type E	Function		Descriptions
Y	Y	Y	Y	Y	Browse	Browsing (Direct)	I/O signal status in the DL8 web server can be directly monitored with an internet browser.
						Browsing (Cloud)	The DL8, operating as FTP client, uploads web use files to a cloud server. Multiple users can access it at once without extra load at the DL8.
						Extended I/O	I/Os located within 500-meter distance can be collected and accessed via single DL8 module.
N	Y	Y	Y	Y	Report	Email	Events can be reported by emails. Regular reporting and test mailing are also possible.
						Alarm Contact	Event can trigger an alarm contact at a discrete output module.
						FTP Client	Specific data can be converted into user defined CSV files and uploaded to an FTP server.
N	N	Y	Y	Y	Log	Data Logging	Data is sampled and stored in CSV format in an SD card.
						FTP Server	The host supervising system (client PC) can upload CSV data files from the DL8 operating as FTP server.
N	N	N	Y	Y	I/O Marshalling Advanced View	I/O Mapping	Input at one I/O module can be output at another connected over Modbus/TCP network, by simply specifying combination of Di/Do and Ai/Ao.
						User Defined View	User's own browser views can be added using JavaScript and the DL8 original HTML tags.
N	N	N	N	Y	Advanced Communication	Encrypted Communication	Communications are encrypted by using HTTPS and FTPS protocols. Data can be handled securely.
						SLMP Communication	The DL8 collects data from a PLC using SLMP client function.

Y = Function available. N = Not available.

Email

Type B, C, D, E

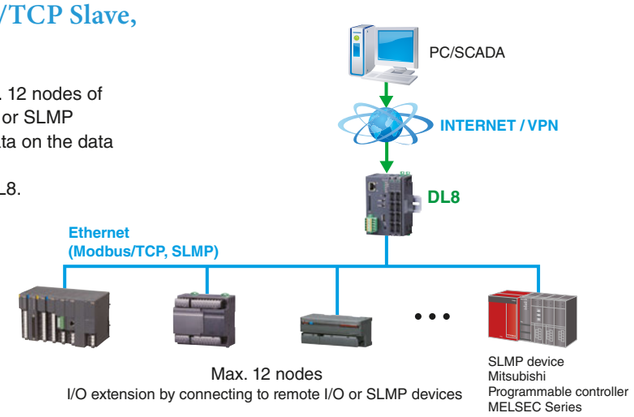
Up to 32 mail recipients can be registered in the address list. Each of the regular and event reports can be sent to different recipients. The DL8 retries every 30 seconds up to 5 times if a mail is undelivered. It outputs an error contact to notify the failure if it is still undelivered after 5 retries.



Modbus/TCP Master, Modbus/TCP Slave, SLMP Client

I/O signal sources can be extended to the max. 12 nodes of remote I/O and other devices via Modbus/TCP or SLMP communications. Users can monitor the I/O data on the data displays or trend graphs of the DL8.
A SCADA can be used to supervise multiple DL8.

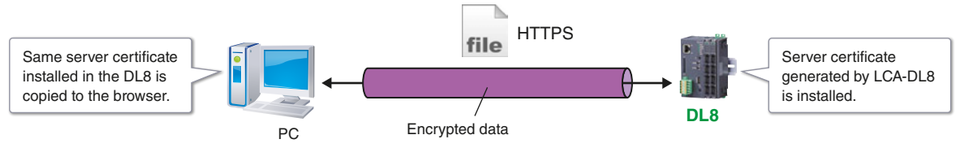
Modbus/TCP master and slave — All types
SLMP client — Type E



HTTPS Communication

Type E

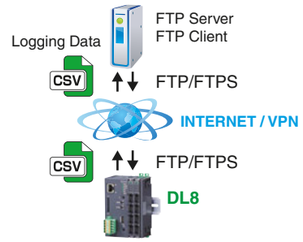
The DL8, type E, supports HTTPS protocol, encrypted version of HTTP. Encrypted data are securely exchanged via the internet, reducing risks of eavesdropping or falsification by cyber attacks.
For HTTPS communication, a browser imports a server certificate generated by the software tool Local Certification Authority Creater (Model: LCA-DL8) and downloaded both to the DL8 and to the PC. The LCA-DL8 is downloadable for free at our web site.



FTP Client and Server, FTPS Client and Server

CSV files recorded and stored in the DL8 can be transferred to a FTP server, while a FTP client can also upload the files stored in an SD card.
To use the FTPS server function, the DL8 installs a server certificate generated by the software tool Local Certification Authority Creater (Model: LCA-DL8).

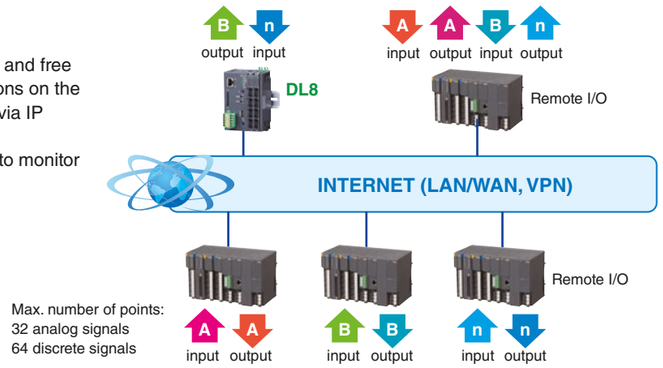
FTP client — Type B, C, D, E
FTP server — Type C, D, E
FTPS client — Type E
FTPS server — Type E



I/O Mapping

Type D, E

The I/O mapping function realizes a simple and free marshalling of I/O signals at multiple locations on the LAN/WAN or VPN (Virtual Privte Network) via IP (Internet Protocol) networks.
Users can build an IP telemetering system to monitor remote field signals via the DL8.



PRE-INSTALLED VIEWS

Smartphone / Tablet / Laptop PC

Web Browsed Views Designed for Mobiles

Display Examples with iPhone or Android™

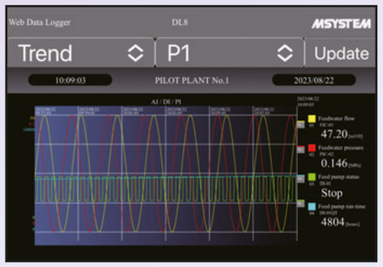
Trend view optimized for the aspect ratio of a smartphone screen

Display Examples with iPad

Event log view designed for ease of reading on the vertical screen of a tablet

PC SCREEN

SMARTPHONE SCREEN

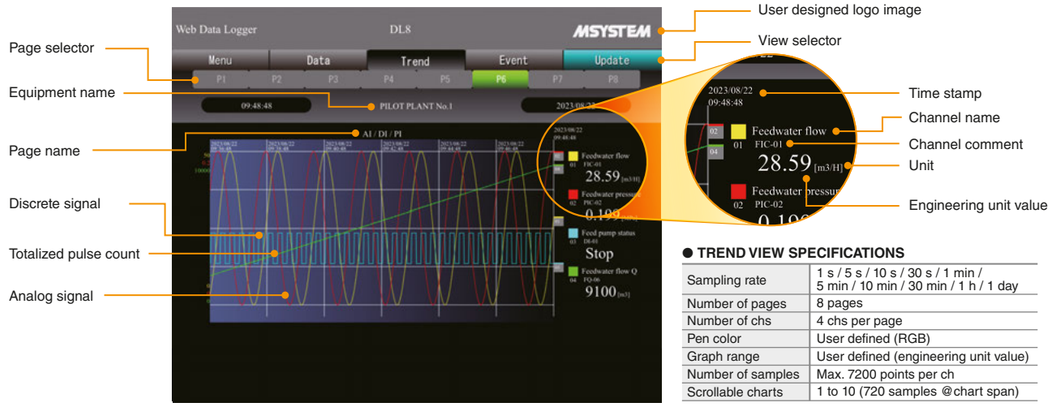


Large sized buttons are placed for ease of operating on the small sized screen of a smartphone.

● iPhone and iPad are registered trademarks of Apple Inc. ● Android and Android logo are (registered) trademarks of Google LLC.
● Screen images for illustration purposes only. The actual web browser views are subject to change without notice. ● Smartphones and/or telecommunication services are not our products.

Short trend and digital data displays are available to monitor analog, discrete and totalized pulse signals.
Event log is also available to review alarm events. All the views can be quickly ready for use by simple setting.

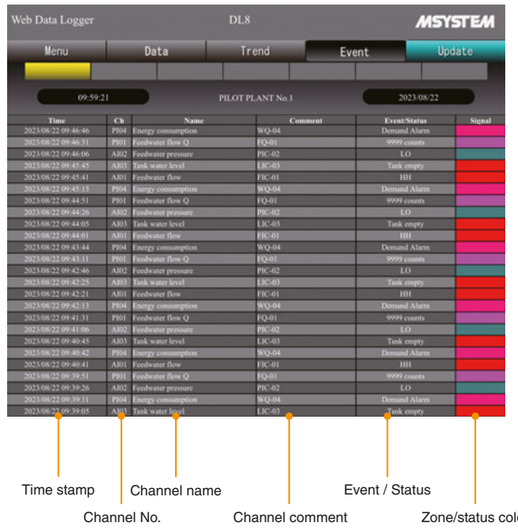
TREND



● TREND VIEW SPECIFICATIONS

Sampling rate	1 s / 5 s / 10 s / 30 s / 1 min / 5 min / 10 min / 30 min / 1 h / 1 day
Number of pages	8 pages
Number of chs	4 chs per page
Pen color	User defined (RGB)
Graph range	User defined (engineering unit value)
Number of samples	Max. 7200 points per ch
Scrollable charts	1 to 10 (720 samples @chart span)

EVENT LOG



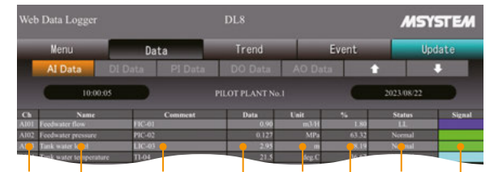
● EVENT LOG SPECIFICATIONS

Analog signal	Alarm triggered when measured value passes across the setpoint.
Discrete signal	Alarm triggered when status changes.
Totalized count	Alarm triggered when pulse count exceeds the setpoint. (Counter can be reset.)
Pulse signal	Alarm triggered when measured value passes across the setpoint.

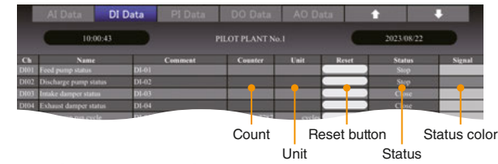
Emails can be sent when an event occurs.
Specific recipients and texts can be defined for each event condition.

DATA

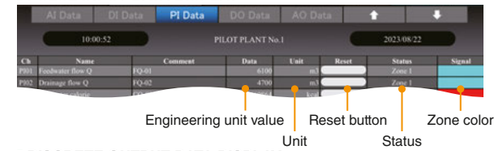
ANALOG INPUT DATA DISPLAY



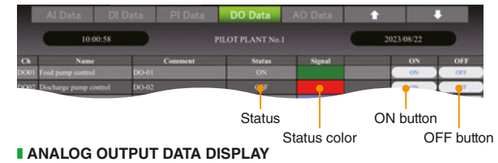
DISCRETE INPUT DATA DISPLAY



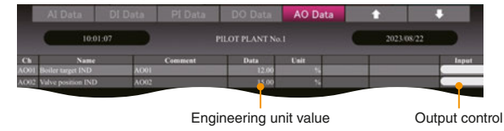
PULSE INPUT DATA DISPLAY



DISCRETE OUTPUT DATA DISPLAY



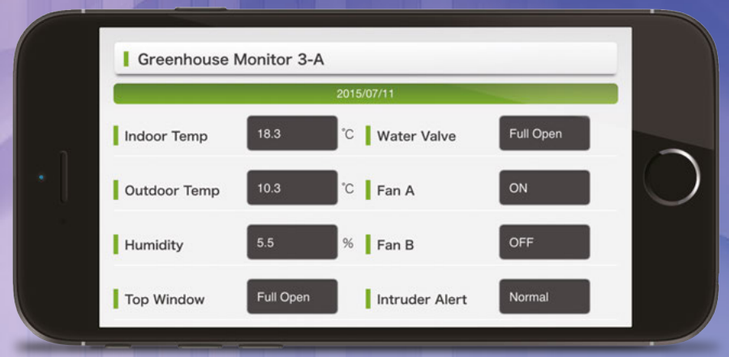
ANALOG OUTPUT DATA DISPLAY



Customized Web Browser Views

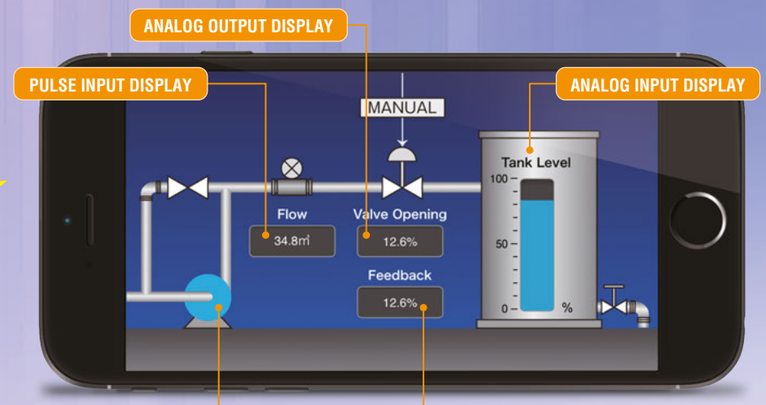
DL8-D, -E OPTION

DATA VIEW BY HTML
Example using the DL8 original tags



● Composite Picture

GRAPHIC VIEW
Example using JavaScript



● Composite Picture

USING THE DL8 ORIGINAL TAGS

The DL8 original tags in an HTML file are automatically converted into corresponding text/data string by the DL8. Users who do not have technical knowledge of programming scripts can easily create an original data view.

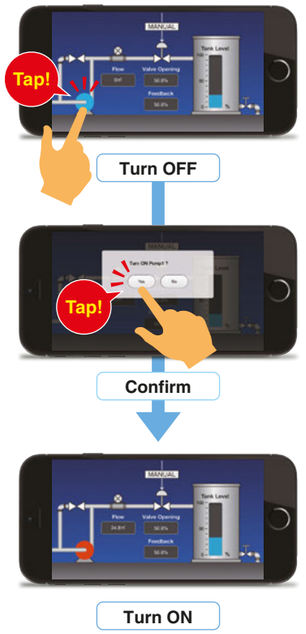
The DL8 User Defined View must be created and used under the user's sole responsibility, including its display components and functions.

ORIGINAL TAG	CONTENTS	CONVERTED TEXT/DATA STRING (example)
[NAME1]	Name 1	Web Data Logger
[NAME2]	Name 2	Web Data Logger
[NAME3]	Name 3	Web Data Logger
[TIME1]	Present Time	2015/07/11 11:00:00
[TIME2]	Not Used	----
[AI1_NAME]	Ai 1	CH name
[AI1_COMM]	Ai 1	CH comment
[AI1_DATA]	Ai 1	Engineering unit data
[AI1_DATA_P]	Ai 1	% data
[AI1_UNIT]	Ai 1	Engineering unit
[AI1_AREA]	Ai 1	Zone name
[DI1_NAME]	Di 1	CH name
[DO1_DATA]	Do 1	Status (display comment)
[AO1_NAME]	Ao 1	CH name
[AO1_COMM]	Ao 1	CH comment
[AO1_DATA]	Ao 1	Engineering unit data

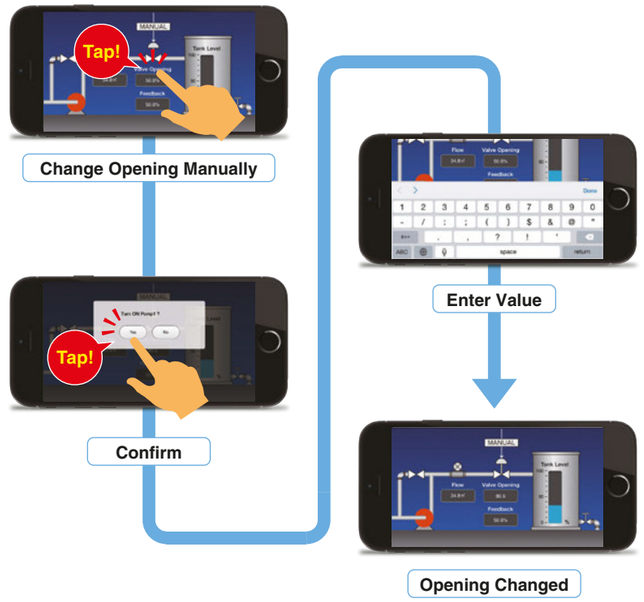
Creating User's Original Views by JavaScript or HTML

Measured data strings can be output as JavaScript arrays. Users who have knowledge and skills of JavaScript language, HTML and CSS used to build a web site can freely create original trend graphs, bargraphs and graphic views.
Analog input, analog output, discrete input, discrete output, trend data, event data and other variety of array files are available.

Turning Pump ON/OFF

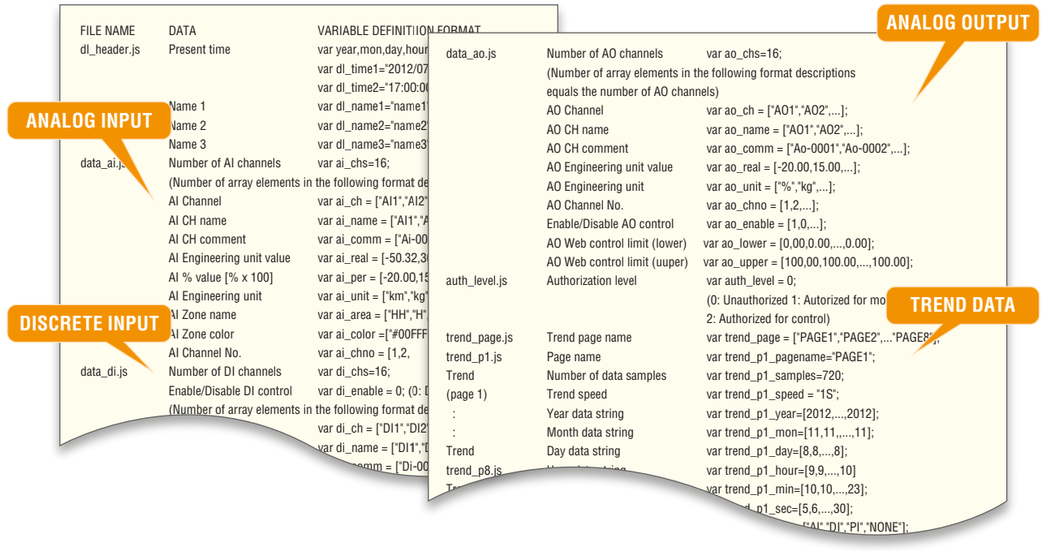


Setting Valve Opening



● Simulated Imagery. View samples are not provided.

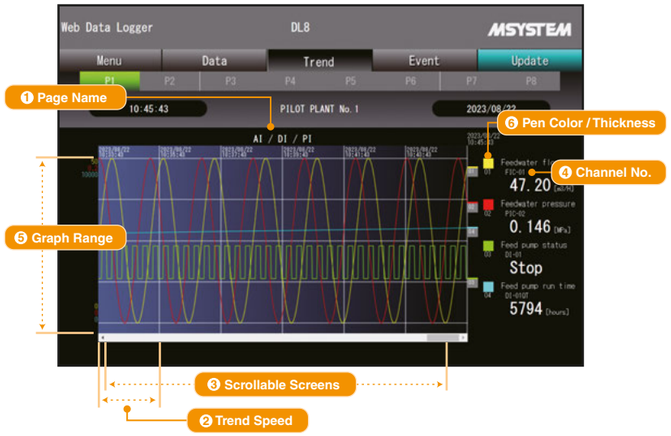
JAVASCRIPT ARRAY FILES



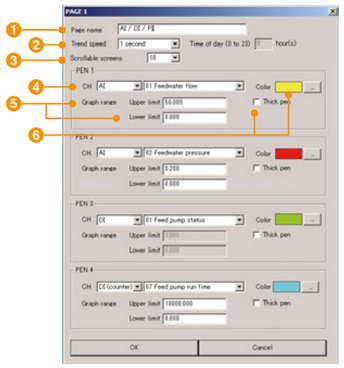
SETUP

The DLCFG PC Configurator software is available to customize the views with the user specific information and various parameters. The user-friendly program is easy to use for anyone without special knowledge about network and software.
The DLCFG can be downloaded for free of charge at our web site.

TREND



SETTING WINDOW



SETUP ITEMS

USER SETTING

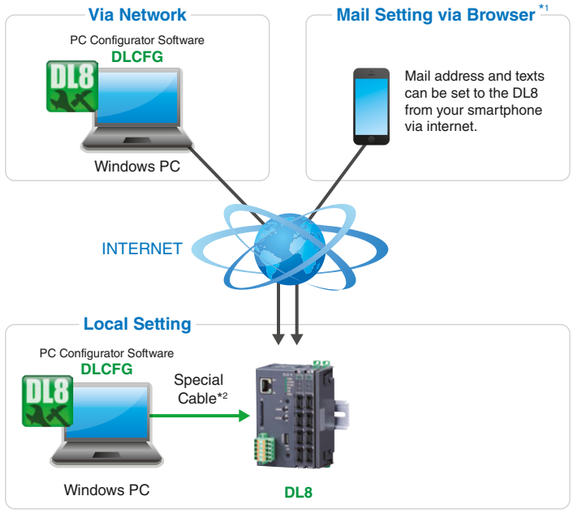
SYSTEM	Name
	Time Zone
	Start Mode
INPUT/OUTPUT	Modbus/TCP Node
	Ai
	Di
	Pi
	Do
	Ao
COMMUNICATION	Web Server (HTTP/HTTPS)
	SNTP
	Modbus/TCP Slave
	SMTP/POP3
	SLMP
	FTP/FTPS Client
	FTP/FTPS Server
EMAIL	Address List
	Event Report
	Regular Report
	Delivery Failure Output
LOGGING	General
	Data Logging
	Channel Event Log
I/O MAPPING	Ao
	Do

MAINTENANCE SETTING

Date / Time
User Defined Imagery
MAC Address
DL8 Version
System Log
Preset Count
FTP Client Test
Test Mail
Start/Stop Logging
Disk Usage
User Defined Browser View
BIOS Update

HOW TO SET UP

SETUP SYSTEM CONFIGURATION



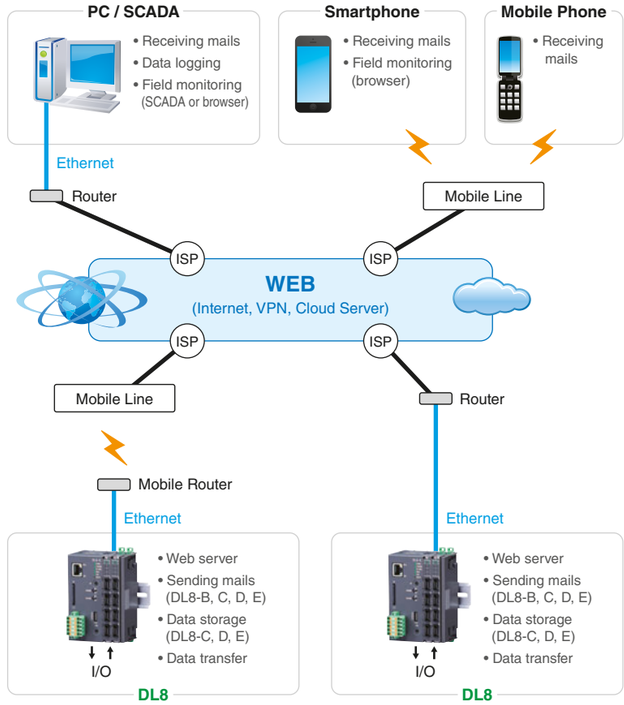
*1. E-mail setting

*2. Special cable

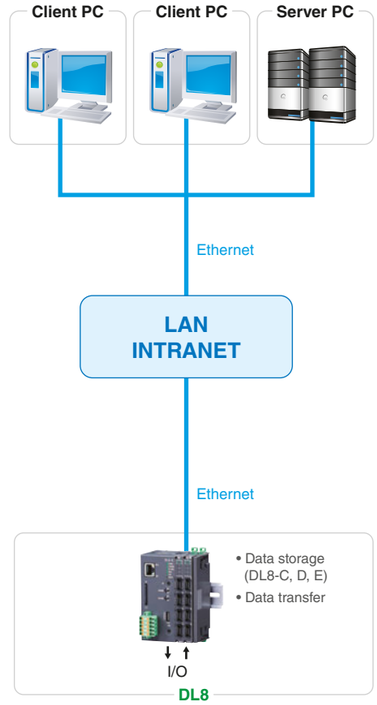
PC Configurator Cable
Model: COP-US

CONFIGURATIONS

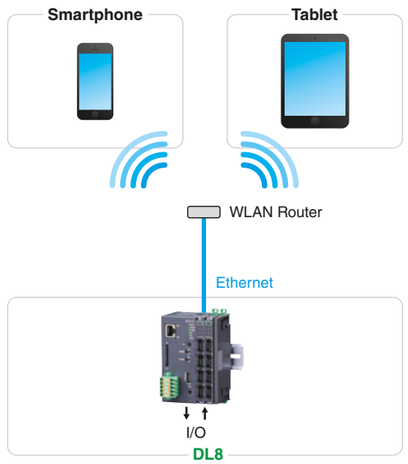
INTERNET



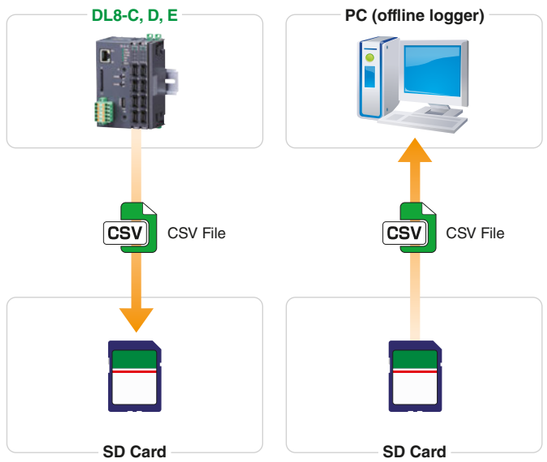
LAN



LOCAL WLAN



STAND-ALONE



ISP : Internet Service Provider

• About SD card (usable with DL8-C, D, E)
An SD card is required to save data. Use one of the types specified in the data sheet.
SD cards can be purchased from us. Contact us for more information.

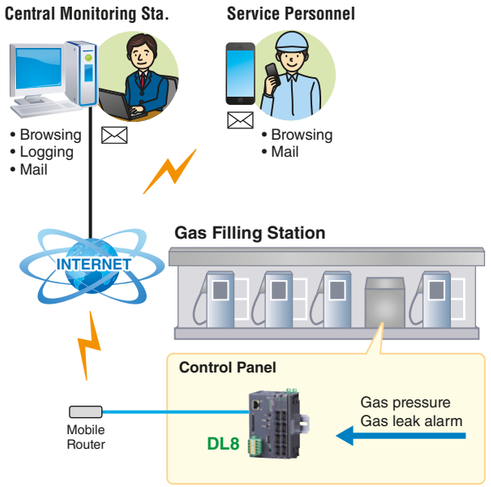
DL8 APPLICATION EXAMPLES

The DL8 web data logger is suitable for a wide variety of monitoring applications such as: construction machines, convenience stores, large equipment, elevated water tanks, wineries, breweries, electric furnaces, reservoir ponds, building, etc.

CNG Gas Filling Stations

Also applicable to: Utility / Infrastructure Monitoring

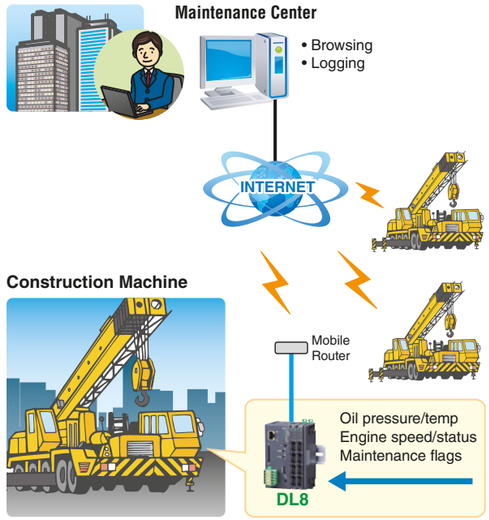
- ✔ **Material level monitoring**
- ✔ **Optimization of refilling schedule**
- ✔ **Effective service personnel assignment**



Construction Machines

Also applicable to: Mobile Equipment

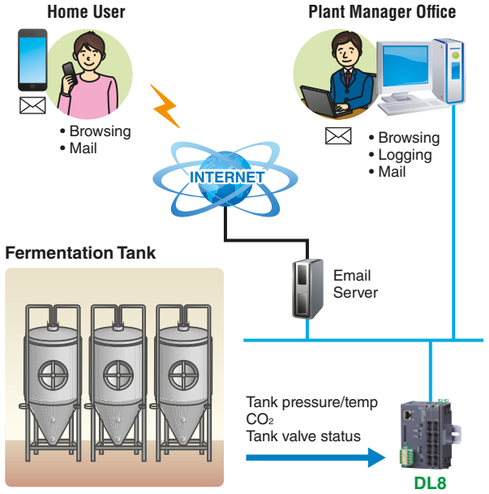
- ✔ **Remote monitoring of mobile equipment**
- ✔ **Operation log for effective maintenance**



Microbrewery

Also applicable to: Small Scale Fermentation Plants

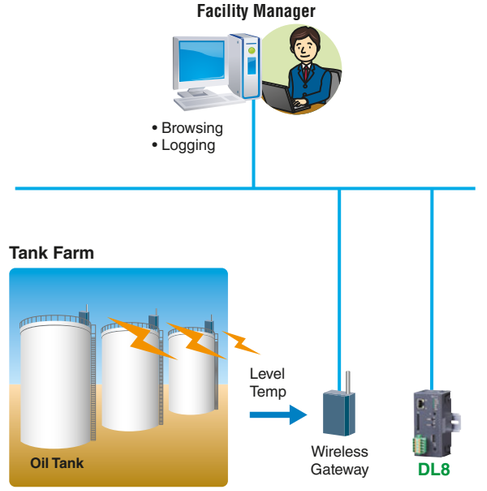
- ✔ **Remote monitoring**
- ✔ **Utilizing existing in-house LAN and email server**
- ✔ **Abnormality alert mail including update data**



Tank Farm

Also applicable to: Utility / Infrastructure Monitoring

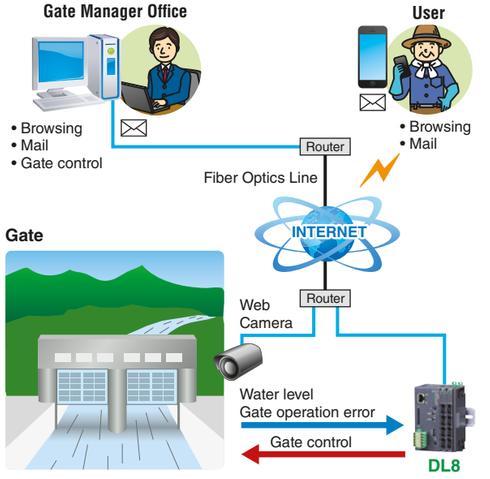
- ✔ **Wireless data monitoring for HART wireless transmitters**
- ✔ **Monitoring of material level and temperature**



Irrigation Canal Gate

Also applicable to: Utility / Infrastructure Monitoring

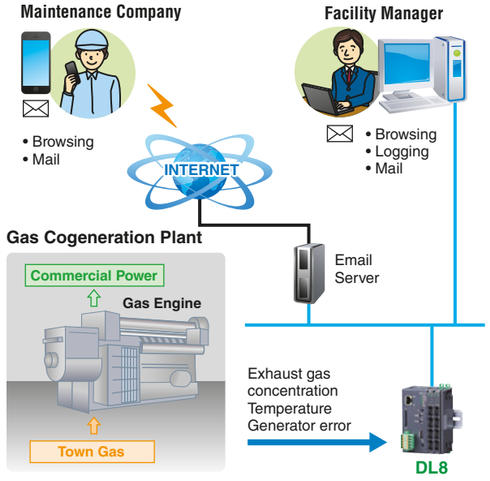
- ✔ **Remote monitoring & control**
- ✔ **Alert mail to multiple users**
- ✔ **Web camera surveillance and telemetering via single fiber optics line**



Gas Cogeneration Generator

Also applicable to: Green Energy Plants

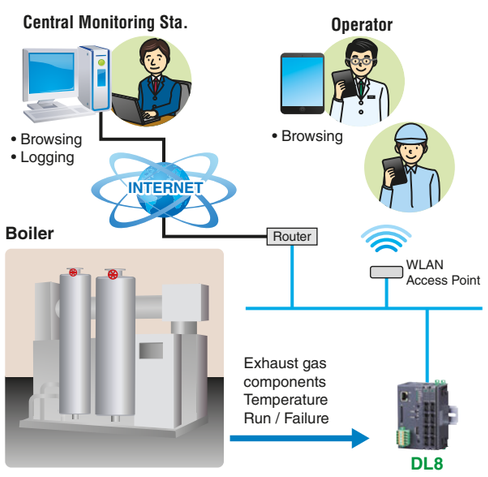
- ✔ **Utilizing existing in-house LAN**
- ✔ **Alerting facility manager and maintenance company at once in case of trouble**
- ✔ **Operation log for effective maintenance**



Boiler Test Run Monitoring

Also applicable to: Machinery & Equipment Monitoring

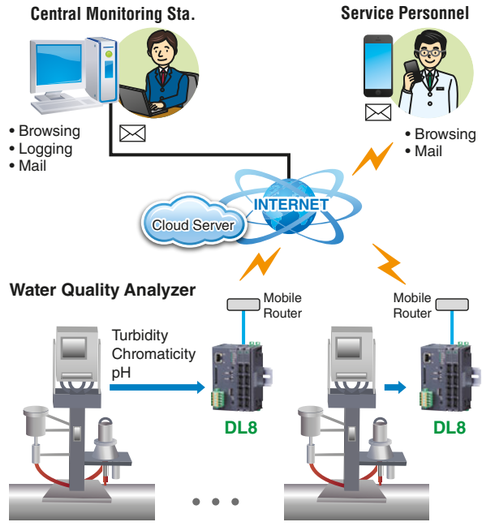
- ✔ **Combination of the DL8/mobile router needs only a minimum space, ideal for temporary installation for the startup**
- ✔ **Supervisor and field operators can double-check the data at once**



Water Quality Analyzer

Also applicable to: Utility / Infrastructure Monitoring

- ✔ **Water quality monitoring**
- ✔ **Effective service personnel assignment**



● Static IP or dynamic DNS is required.