WEB DATA LOGGER DL8 Series

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

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

Make Greener automation
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.

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

**Web Data Logger DL8 Series**

- **TREND**
- **EVENT LOG**
- **DATA**
- **DATA LOGGING**
- **EMAIL**

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

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**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

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Smartphone
PC
Tablet

INTERNET
Cloud Server

WLAN router

Web Data Logger DL8

Analog Input
Pulse Count
Discrete Input
Analog/Discrete Output

Temperature
Pressure
Flow
Level
Energy
Equipment ON/OFF
Lighting ON/OFF
Alarm Switch
Motor ON/OFF

etc...
**Selectable Features at Minimum Cost**

- ‘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 also be added.

<table>
<thead>
<tr>
<th>Signal Type</th>
<th>Max. Capacity<strong>1</strong> per module</th>
<th>Function</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog input</td>
<td>32 points</td>
<td>DC current input (2 points, isolated)</td>
<td>R8-SS2</td>
</tr>
<tr>
<td>Analog input</td>
<td>32 points</td>
<td>DC current input (2 points, non-isolated)</td>
<td>R8-SS4N</td>
</tr>
<tr>
<td>Analog input</td>
<td>32 points</td>
<td>DC current input (4 points, non-isolated, sensor exc.)</td>
<td>R8-SS4NJ</td>
</tr>
<tr>
<td>Analog input</td>
<td>32 points</td>
<td>DC current input (8 points, isolated, tension-clamp terminal block)</td>
<td>R8-SS7B</td>
</tr>
<tr>
<td>Analog input</td>
<td>32 points</td>
<td>DC voltage input (2 points, isolated)</td>
<td>R8-SV2</td>
</tr>
<tr>
<td>Analog input</td>
<td>32 points</td>
<td>DC voltage input (4 points, non-isolated)</td>
<td>R8-SV4N</td>
</tr>
<tr>
<td>Analog input</td>
<td>32 points</td>
<td>DC voltage/current input (4 points, non-isolated, sensor exc., tension-clamp terminal block)</td>
<td>R8-FST4N</td>
</tr>
<tr>
<td>Analog input</td>
<td>32 points</td>
<td>DC voltage/current input (16 points, non-isolated, sensor exc.)</td>
<td>R8-FS16N</td>
</tr>
<tr>
<td>Discrete input</td>
<td>64 points</td>
<td>Contact input (4 points, NPN)</td>
<td>R8-DA4A</td>
</tr>
<tr>
<td>Discrete input</td>
<td>64 points</td>
<td>Contact input (8 points, NPN)</td>
<td>R8-DAM16A</td>
</tr>
<tr>
<td>Discrete input</td>
<td>64 points</td>
<td>Contact input (8 points, NPN, tension-clamp terminal block)</td>
<td>R8-DAT8A4</td>
</tr>
<tr>
<td>Discrete input</td>
<td>64 points</td>
<td>Contact input (16 points, NPN, tension-clamp terminal block)</td>
<td>R8-DAT16A2</td>
</tr>
<tr>
<td>Discrete input</td>
<td>64 points</td>
<td>Contact input (16 points, NPN, tension-clamp terminal block)</td>
<td>R8-DAT8B2</td>
</tr>
<tr>
<td>Pulse input</td>
<td>32 points</td>
<td>Totalized pulse input (4 points, NPN/NPN/voltage pulse)</td>
<td>R8-PA4A</td>
</tr>
<tr>
<td>Pulse input</td>
<td>32 points</td>
<td>High-speed totalized pulse input (4 points, NPN)</td>
<td>R8-PA4F</td>
</tr>
<tr>
<td>AC power input</td>
<td>32 points</td>
<td>AC current input (4 points, non-isolated, clamp-on current sensor)</td>
<td>R8-CT4A</td>
</tr>
<tr>
<td>Analog output</td>
<td>32 points</td>
<td>DC voltage output (4 points, non-isolated)</td>
<td>R8-YV4N</td>
</tr>
<tr>
<td>Analog output</td>
<td>32 points</td>
<td>DC current output (4 points, non-isolated, tension-clamp terminal block)</td>
<td>R8-YST4N</td>
</tr>
<tr>
<td>Analog output</td>
<td>32 points</td>
<td>DC current output (2 points, non-isolated, sensor exc.)</td>
<td>R8-YS2N</td>
</tr>
<tr>
<td>Analog output</td>
<td>32 points</td>
<td>DC current output (2 points, isolated)</td>
<td>R8-YS2</td>
</tr>
</tbody>
</table>

| Discrete output | 64 points | Transistor output (4 points, NPN, shortcircuit protection) | R8-DC4A |
| Discrete output | 64 points | Transistor output (4 points, NPN, voltage contact, shortcircuit protection) | R8-DC4A2 |
| Discrete output | 64 points | Photo MOSFET relay output (4 points) | R8-DC4C |
| Discrete output | 64 points | Relay output (4 points, tension-clamp terminal block) | R8-DCT4D |
| Discrete output | 64 points | Transistor output (16 points, NPN, shortcircuit protection) | R8-DCM16 |
| Discrete output | 64 points | Transistor output (16 points, NPN, shortcircuit protection, full interlock) | R8-DCM16ALZ |
| Discrete output | 64 points | Transistor output (16 points, NPN, shortcircuit protection, full and individual interlock) | R8-DCM16ALK |
| Discrete output | 64 points | Transistor output (16 points, NPN, shortcircuit protection, full and partial interlock) | R8-DCM16ALH |
| Discrete output | 64 points | Transistor output (32 points, NPN, shortcircuit protection) | R8-DCM32B2 |
| Discrete output | 64 points | Transistor output (8 points, NPN, shortcircuit protection, tension-clamp terminal block) | R8-DCT8A2 |
| Discrete output | 64 points | Transistor output (16 points, NPN, shortcircuit protection, tension-clamp terminal block) | R8-DCT16A2 |
| Discrete output | 64 points | Transistor output (8 points, NPN, shortcircuit protection, tension-clamp terminal block) | R8-DCT8B2 |

| Pulse output | 32 points | Pulse output (4 points, open collector) | R8-PC4A |

**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.

**POWER SUPPLY**

Power supply module for extension | R8-PS1

*1. Including extended remote I/Os
**FUNCTIONS**

**INTERNET**

- **PC**
  - Email
  - CSV File
  - **CH data** (Ai, Di, Pi, Do, Ao data)
  - Event log
  - Other logs

- **Tablet**
  - Browsing (Direct)
  - Browsing (Cloud)
  - Email

- **Smartphone**
  - Browsing (Direct)
  - Browsing (Cloud)
  - Email

**LOCAL**

- **Tablet**
  - Browsing HTTP/HTTPS
- **Smartphone**
  - Browsing HTTP/HTTPS

**ETHERNET/RS-485 ADAPTOR FOR MODBUS**

- **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**
  - Hub/switch
  - Ethernet

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

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.

*2. Cloud server services are not our products.  *3. A WLAN access point is required to use wireless LAN network.
**DL8 FUNCTIONS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Browsing (Direct)</td>
<td>I/O signal status in the DL8 web server can be directly monitored with an internet browser.</td>
</tr>
<tr>
<td>B</td>
<td>Browsing (Cloud)</td>
<td>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.</td>
</tr>
<tr>
<td>C</td>
<td>Extended I/O</td>
<td>I/Os located within 500-meter distance can be collected and accessed via single DL8 module.</td>
</tr>
<tr>
<td>D</td>
<td>Email</td>
<td>Events can be reported by emails. Regular reporting and test mailing are also possible.</td>
</tr>
<tr>
<td>E</td>
<td>Alarm Contact</td>
<td>Event can trigger an alarm contact at a discrete output module.</td>
</tr>
<tr>
<td>N</td>
<td>Log</td>
<td>Specific data can be converted into user defined CSV files and uploaded to an FTP server.</td>
</tr>
<tr>
<td>N</td>
<td>FTP Server</td>
<td>Data is sampled and stored in CSV format in an SD card.</td>
</tr>
<tr>
<td>N</td>
<td>I/O Marshalling</td>
<td>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.</td>
</tr>
<tr>
<td>N</td>
<td>I/O Mapping</td>
<td>Communications are encrypted by using HTTPS and FTPS protocols. Data can be handled securely.</td>
</tr>
<tr>
<td>N</td>
<td>User Defined View</td>
<td>User’s own browser views can be added using JavaScript and the DL8 original HTML tags.</td>
</tr>
<tr>
<td>N</td>
<td>FTP Client</td>
<td>The host supervising system (client PC) can upload CSV data files from the DL8 operating as FTP server.</td>
</tr>
<tr>
<td>N</td>
<td>Data Logging</td>
<td>The DL8 collects data from a PLC using SLMP client function.</td>
</tr>
<tr>
<td>N</td>
<td>Encryption</td>
<td>Communications are encrypted by using HTTPS and FTPS protocols.</td>
</tr>
<tr>
<td>N</td>
<td>SLMP Communication</td>
<td>Data can be handled securely.</td>
</tr>
</tbody>
</table>

**Email**

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.

Recipient mail address: max. 32

**Message example**

2020/1/10 12:00:00
ABC reservoir
Level low
[AI01] Reservoir level 2.5[m]

Recipient(s), subject and message body can be modified on a web browser.

**Emailing**

Recipient(s), subject and message body can be modified on a web browser.

Mailing status can be confirmed on the configuration software program.

Mailing can be suspended by hardware switch during maintenance.

Resent every 30 seconds for 5 times in case of unsuccessful mailing

Alarm Output (RUN contact)

Buzzer/Lamp
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.

HTTPS Communication

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).

I/O Mapping

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 Privete 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**

- **Page selector**
- **Equipment name**
- **Page name**
- **Discrete signal**
- **Totalized pulse count**
- **Analog signal**

**EVENT LOG**

- **Time stamp**
- **Channel name**
- **Event / Status**

**DATA**

- **ANALOG INPUT DATA DISPLAY**
  - Channel No.
  - Channel comment
  - Unit
  - % value
  - Zone color
  - Status color

- **DISCRETE INPUT DATA DISPLAY**
  - Count
  - Reset button
  - Status

- **PULSE INPUT DATA DISPLAY**
  - Engineering unit value
  - Reset button
  - Zone color

- **DISCRETE OUTPUT DATA DISPLAY**
  - Status
  - ON button
  - OFF button

- **ANALOG OUTPUT DATA DISPLAY**
  - Engineering unit value
  - Output control

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

**DATA VIEW BY HTML**
Example using the DL8 original tags

**GRAPHIC VIEW**
Example using JavaScript

**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.

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

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

**JavaScript Array Files**

- **dl_header.js**
  - Present time: `var year,mon,day,hour,min,sec;`
  - Name 1: `var dl_time1="2012/07/03";
  - Name 2: `var dl_time2="17:00:00";

- **data_ai.js**
  - Number of AI channels: `var ai_chs=16;`
  - AI Channel: `var ai_ch = ['AI1","AI2",...];`
  - AI CH name: `var ai_name = ['AI1","AI2",...];`
  - AI CH comment: `var ai_comm = ['AI-0001","AI-0002",...];`
  - AI Engineering unit value: `var ai_real = [-50.32,30.55,...];`
  - AI % value [% x 100]: `var ai_per = [-20.00,15.00,...];`
  - AI Engineering unit: `var ai_unit = ['km","kg",...];`
  - AI Zone name: `var ai_area = ['HH","H",...];`
  - AI Zone color: `var ai_color = ['#00FFFFFF',...];`

- **data_di.js**
  - Number of DI channels: `var di_chs=16;`
  - DI Channel: `var di_ch = ['DI1","DI2",...];`
  - DI CH name: `var di_name = ['DI1","DI2",...];`
  - DI CH comment: `var di_comm = ['Di-0001","Di-0002",...];`
  - DI Count: `var di_count = ['1000","335",...];`

- **data_ao.js**
  - Number of AO channels: `var ao_chs=16;`
  - AO Channel: `var ao_ch = ['AO1","AO2",...];`
  - AO CH name: `var ao_name = ['AO1","AO2",...];`
  - AO CH comment: `var ao_comm = ['Ao-0001","Ao-0002",...];`
  - AO Engineering unit value: `var ao_real = [-20.00,15.00,...];`
  - AO Engineering unit: `var ao_unit = ['%","kg",...];`
  - AO Channel No.: `var ao_chno = [1,2,...];`
  - Enable/Disable AO control: `var ao_enable = [1,0,...];`
  - AO Web control limit (lower): `var ao_lower = [0,0.00,0.00,...,0.00];`
  - AO Web control limit (upper): `var ao_upper = [100,0,100.00,...,100.00];`

- **auth_level.js**
  - Authorization level: `var auth_level = [0];`
    - 0: Unauthorized
    - 1: Authorized for monitoring
    - 2: Authorized for control

- **trend_page.js**
  - Trend page name: `var trend_page = ['PAGE1","PAGE2",...];`

- **trend_p1.js**
  - Page name: `var trend_p1_page=PAGE1;`
  - Trend: `var trend_p1_samples=720;`
  - Number of data samples: `var trend_p1_samples=720;`
  - Trend speed: `var trend_p1_speed = '1S';`
  - Year data string: `var trend_p1_year=[2012...2012];`
  - Month data string: `var trend_p1_mn=[11...11];`
  - Day data string: `var trend_p1_day=[6,8,...8];`
  - Hour data string: `var trend_p1_hour=[9,9,...10];`
  - Min data string: `var trend_p1_min=[10,10,...23];`
  - Sec data string: `var trend_p1_sec=[0,0,...30];`

Simulated Imagery. View samples are not provided.
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.
### Web Data Logger DL8 Series

**CONFIGURATIONS**

#### INTERNET

- **PC / SCADA**
  - Receiving mails
  - Data logging
  - Field monitoring (SCADA or browser)

- **Smartphone**
  - Receiving mails
  - Field monitoring (browser)

- **Mobile Phone**
  - Receiving mails

**WEB**

- (Internet, VPN, Cloud Server)

**Mobile Line**

#### LAN

- **Client PC**
  - Web server
  - Sending mails (DL8-B, C, D, E)
  - Data storage (DL8-C, D, E)
  - Data transfer

- **Server PC**
  - Data storage (DL8-C, D, E)
  - Data transfer

#### LOCAL WLAN

- **Smartphone**
  - Receiving mails

- **Tablet**
  - Field monitoring

**WLAN Router**

#### STAND-ALONE

- **DL8-C, D, E**
  - CSV File
  - SD Card

- **PC (offline logger)**
  - CSV File
  - SD Card

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ISP: Internet Service Provider

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**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

Central Monitoring Sta.  
Service Personnel

- Browsing
- Logging
- Mail

Gas Filling Station

Control Panel

Gas pressure
Gas leak alarm

**Construction Machines**
Also applicable to: Mobile Equipment

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

Maintenance Center

- Browsing
- Logging

**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

Gate Manager Office

User

- Browsing
- Mail
- Gate control

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

Maintenance Company

Facility Manager

- Browsing
- Logging
- Mail

Gas Cogeneration Plant

- Browsing
- Mail

Static IP or dynamic DNS is required.
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

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

Home User
- Browsing
- Mail

Plant Manager Office
- Browsing
- Logging
- Mail

Fermentation Tank
- Tank pressure/temp
- CO₂
- Tank valve status

Facility Manager
- Browsing
- Logging

Tank Farm
- Level Temp
- Wireless Gateway

Oil Tank

Central Monitoring Sta.
- Browsing
- Logging

Operator
- Browsing

Boiler
- Exhaust gas components
- Temperature
- Run / Failure

Service Personnel
- Browsing
- Mail

Cloud Server

Water Quality Analyzer

- Turbidity
- Chromaticity
- pH

Router

INTERNET

WLAN Access Point

DL8
RTU MODULE SPECIFICATIONS

**COMMUNICATION**

IP: DHCP client is supported. Manual setting of IP address, subnet mask, default gateway and DNS server available too.

Modbus/TCP:

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 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: RS-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 address: 32
- Number of event report text: 32
- Number of regular report text: 1
- Status channel: AI, DI, DI (counter), PI, DO, AO

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.

Users can define the CSV file.

- Number of channel: Max. 32 (Select within AI, DI, DI (counter), PI, DO, AO)

- 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 earlier)
  - 1, 2, 5, 10, 15, 20, 30 min. (Interval time: 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, 15, 20, 30 min. (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: DCFG. Event can trigger an alarm contact at a discrete output module.

**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

- FFTP 4.4

Compatible FTPS client

- FFTP 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.

Specifications are subject to change without notice. When ordering, use the latest data sheets available at our web site: www.mgco.jp