

# DG-A8/A16

Industrial rack mountable protocol gateway for Smart Grid



## » Overview

As the 1U, 19 inch standard rack-mount data concentrating unit for system, DG-AX series are designed in conformity with the IEC 61850 standards. It can be deployed to be an intelligent unit to collect data by all its RS232/RS485 serial ports and Ethernet ports. By importing any pre-specified IEC 61850 SCL(.icd/.cid) template file and after mapping the data to internal VMD model with the configuration tool - ICE, the unit can be viewed just as the standard IEC 61850 IED from the master station.

With powerful data communication and process function, high reliability, low power consumption, flexible and easy installation advantages, DG-AX series are the ideal intelligent device choice for any kinds of system integrated solutions.

## » Key Features

- Special designing based on ARM Cortex-A8 architecture
- High performance yet ultra low power consumption
- Easy IEC 61850 SCL(CID/ICD) import and configuration process
- Configurable MMS ( IEC 61850-8-1 ) server & client application
- Support GOOSE publish and subscribe
- Built-in SoftPLC calculating task
- Configurable hardware watchdog
- Full functional NTP for time synchronization

Support IRIG-B DC time synchronization  
Dual mode of RS232/RS485 isolated serial ports  
Remote diagnosis or maintenance by network  
Compliant to IEC 61850-3, IEEE 1613 standards  
Support protocol IEC-101/103/104,Modbus/RTU,Modbus/TCP

## **» Product Specifications**

### **>Features & Benefits**

#### **-Hardware Parameters**

Performance: ARMv7 800MHz Core  
RAM: 512M DDR2-333  
Build-in storage: 512M Nand Flash  
Extra storage: 8G/64G Micro SD(Optional)  
Ethernet: 10/100Base-T  
Serial Ports: RS232/RS485(Isolated)

#### **-Firmware**

DNP 3.0 Level-2 over serial port or LAN  
Modbus(RTU/ASCII)/Modbus over serial port and LAN  
IEC 60870-5-101/103/104 salve/master  
IEC 61850 MMS/GOOSE  
SoftPLC calculator  
Customer specified

#### **-Technical Benefits**

Easy framework configurable by all-in one integration tools  
Later data binding & mapping technology without needing change SCL modeling file  
Advanced data internal processing functionality

### **>Technical Parameters**

#### **-DG-A8**

Console port RS232, RJ45  
Serial ports 8 x RS232/RS485 (Isolated)  
Ethernet 4 x 10/100M RJ45  
Build-in storage 512M Nand Flash

Extra storage 8G/64G Micro SD  
Hardware Watchdog Configurable  
Time Synchronization NTP  
Power Supply 85-264VAC  
Power Consumption <8W  
Weight 3kg  
Dimension (WxHxD) 483x45x200 mm  
Mounting 1U, 19 inch rack-mount  
Operating Temperature -40 to 85°C

**-DG-A16**

Console port RS232, RJ45  
Serial ports 8 x RS232/RS485 (Isolated)  
Ethernet 4 x 10/100M RJ45  
Build-in storage 512M Nand Flash  
Extra storage 8G/64G Micro SD  
Hardware Watchdog Configurable  
Time Synchronization NTP and IRIG-B DC  
Power Supply 85-264VAC  
Power Consumption <8W  
Weight 3kg  
Dimension (WxHxD) 483x45x200 mm  
Mounting 1U, 19 inch rack-mount  
Operating Temperature -40 to 85°C

**-Electrical Parameter**

Input: 85 ~ 264V AC  
Average power consumption: 8W  
Relative humidity : 5%~ 95% (no condensation)  
Electrostatic discharge immunity test: GB/T 17626.2-1998 IEC 61000-4-2-1995 class 4  
Transient immunity: GB/T 17626.4-1998 IEC 61000-4-4-1995 class 4  
Surge immunity: GB/T 17626.5-1998 IEC 61000-4-5-1995 class 4  
Power frequency magnetic fields immunity: GB/T 17626.8-1998 IEC 61000-4-8-1995 class 5  
Ring waves immunity: GB/T 17626.12-1998 IEC 61000-4-12-1995 class 4  
Pulse magnetic field immunity: GB/T17626.9-1998 IEC 61000-4-9-1995 class 5

Damped oscillatory magnetic field immunity: GB/T17626.10-1998 IEC 61000-4-10-1995 class 4

Voltage dips and short interruptions and voltage variations immunity: GB/T 15153.1-1998 IEC 61000-4-11 2004  $\Delta U-100\%$  ,  $\Delta t = 0.5s$

Insulation resistance:  $>5M\Omega$

Insulating strength: no breakdown when applying 500V and 1500V to the communication ports and power supply ports respectively

Dry heat test: GB/T2423.2-2001 IEC 60068-2-2 75°C, 24 hours

Cold test: GB/T2423.1-2001 IEC 60068-2-1 -25°C, 24 hours

Damp heat: GB/T2423.3-1993 IEC 60068-2-3 +40°C  $\pm 2^\circ\text{C}$ , 93%  $\pm 3\%$ , insulation resistance:  $>1M\Omega$

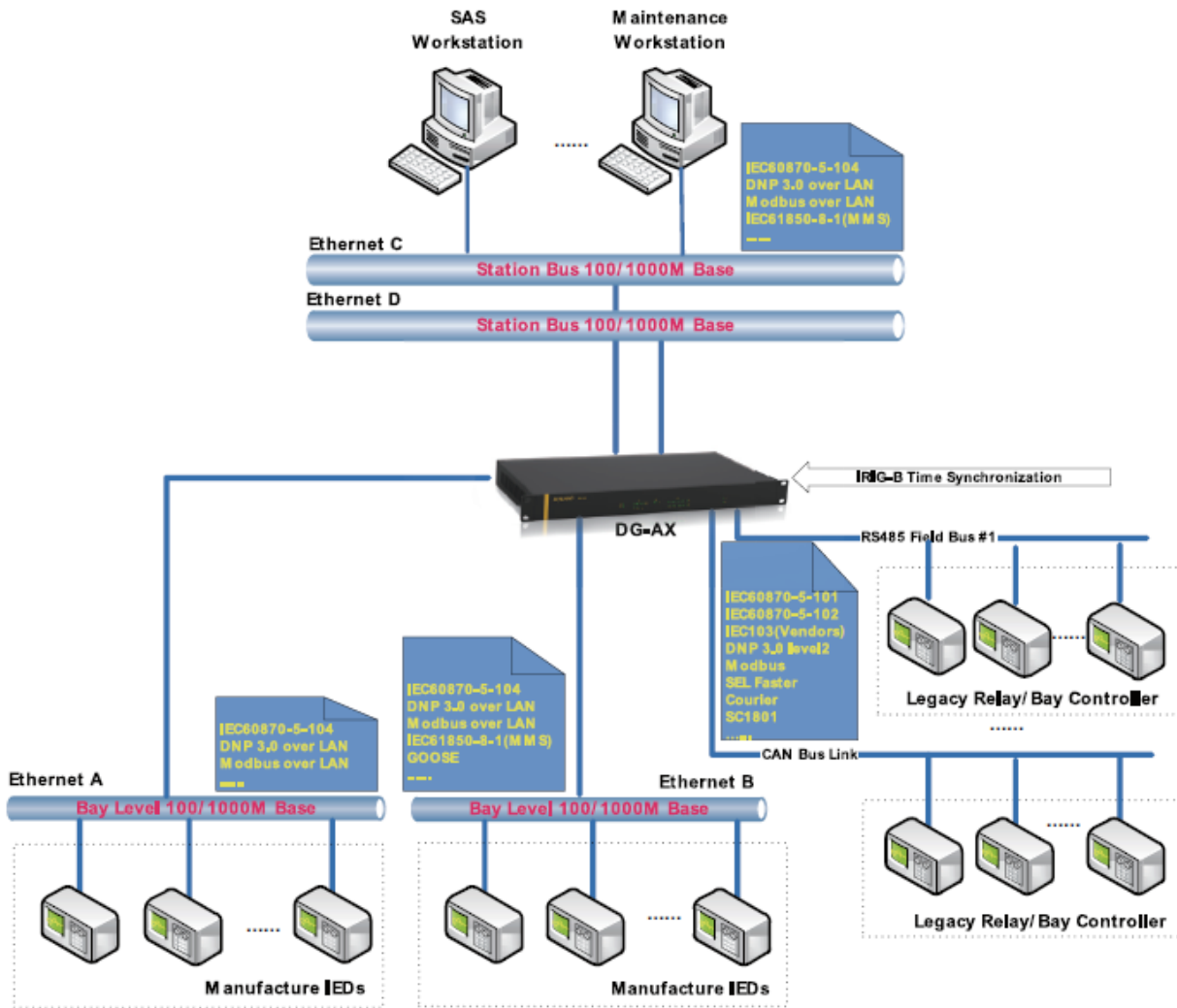
### **-Approvals**

CE

IEC 60950-1, EN 60950-1

## **» Mechanical Drawing**

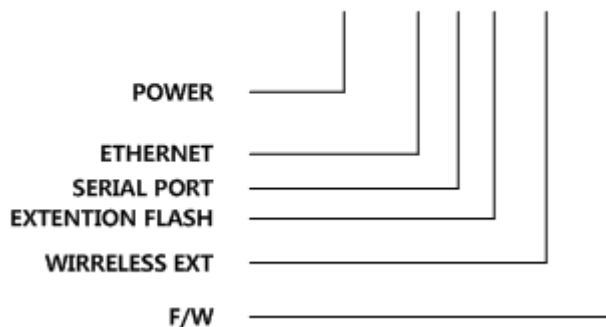
# Typical Application



Data concentrating with DG-AX series gateway

## Ordering Information

# DGW-A8X-P-11CDEG

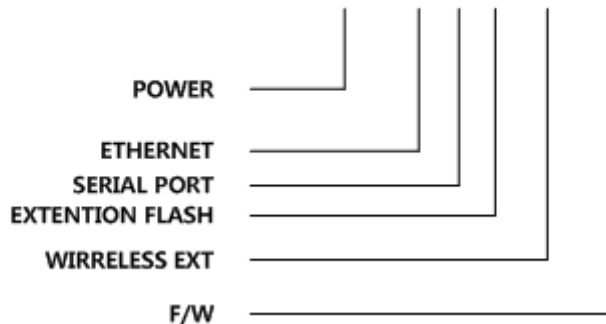


TYPE  
A8X  
POWER

DG-AX(1U,19"Rack Mount)

1	85 ~ 264V AC/100 ~ 300V DC
ETHERNET	
1	4 x 10/100M BASE-T
SERIAL PORT	
1	8 x RS232/RS485 SERIAL PORTS
EXTENTION FLASH STORAGE	
0	N/A
1	8G
3	64G
WIRELESS EXT	
1	N/A
F/W	
00	DEFAULT(IEC 101/104/DNP 3.0/Modbus S/M)
A4	DG-A4(MMS Sever)
A5	DG-A5(MMS Client)
A6	DG-A6(MMS Client/Sever)
C0	DG-C0(COMMON PROTOCOL)
C4	DG-C4(MMS Sever)
C5	DG-C5(MMS Client)
C6	DG-C6(MMS Client/Sever)
P0	DG-P0(PRIVATE PROTOCOL)
P4	DG-P4(MMS Sever)
P5	DG-P5(MMS Client)
P6	DG-P6(MMS Client/Sever)

## DGW-A16X-P-12CDEG



TYPE	
A16X	DG-AX(1U,19"Rack Mount)
POWER	
1	85 ~ 264V AC/100 ~ 300V DC
ETHERNET	
1	4 x 10/100M BASE-T
SERIAL PORT	
2	8 x RS232/RS485+8 x RS485 SERIAL PORTS
EXTENTION FLASH STORAGE	
0	N/A
1	8G
3	64G
WIRELESS EXT	
1	N/A
F/W	
00	DEFAULT(IEC 101/104/DNP 3.0/Modbus S/M)

A4	DG-A4(MMS Sever)
A5	DG-A5(MMS Client)
A6	DG-A6(MMS Client/Sever)
C0	DG-C0(COMMON PROTOCOL)
C4	DG-C4(MMS Sever)
C5	DG-C5(MMS Client)
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P5	DG-P5(MMS Client)
P6	DG-P6(MMS Client/Sever)

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