DG-A2/A4

Industrial DIN Rail Protocol Gateway for Smart Grid

- Special designing based on ARM Cortex-A8 architecture
- High performance yet ultra low power consumption
- Easy IEC 61850 SCL(CID/ICD) import and configuration
- Configurable MMS (IEC 61850-8-1) server & client application
- Support GOOSE publish and subscribe
- Advanced online internal calculating task
- Configurable hardware watchdog
- Full functional NTP for time synchronization
- Dual mode of RS232/RS485 isolated serial ports
- 10/100M IEEE 802.3 Ethernet ports
- Support 3G GPRS wireless communication
- Remote diagnosis or maintenance by network
- Compliant to IEC 61850-3, IEEE 1613 standards

Overview

As the compact protocol gateway for system integrated application, DG-A2/A4 is designed in conformity with the new IEC 61850 standards. It can be anywhere deployed to be a smart unit to transfer data by 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, this 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-A is the ideal intelligent device choice for all kinds of system integrated applications.

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)
Wireless Port: 3G GRPS

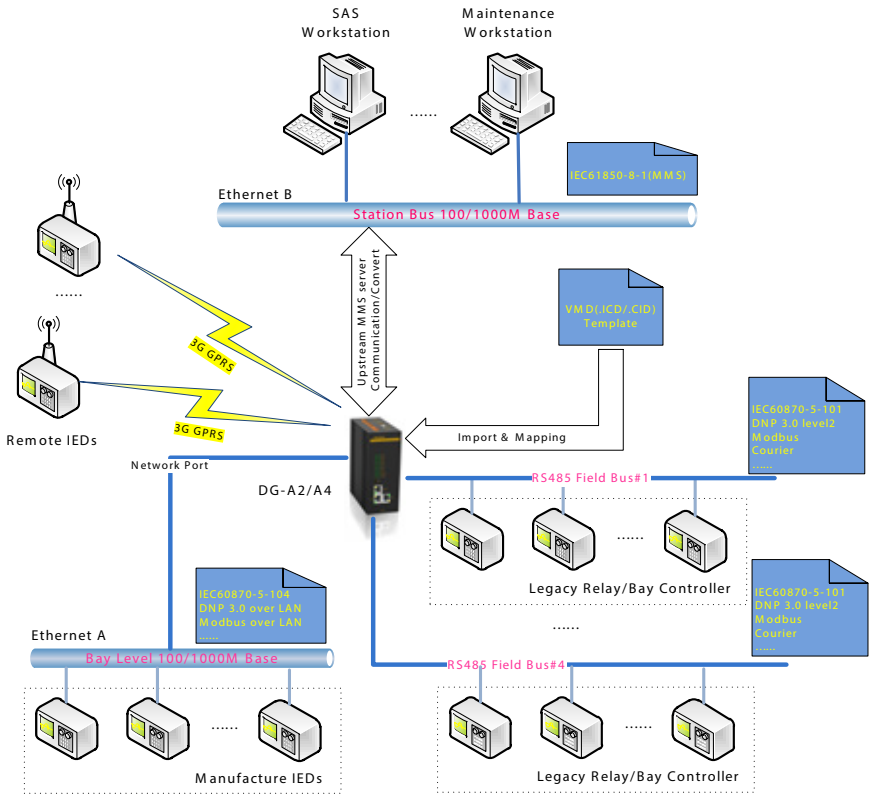
Firmware

DNP 3.0 Level-2 slave/master over serial port or LAN
Modbus(RTU/ASCII)/Modbus slave/master over serial port and LAN
IEC 60870-5-101/104 salve/master
IEC 61850 MMS/GOOSE
Advanced online calculator
Hundred of customization

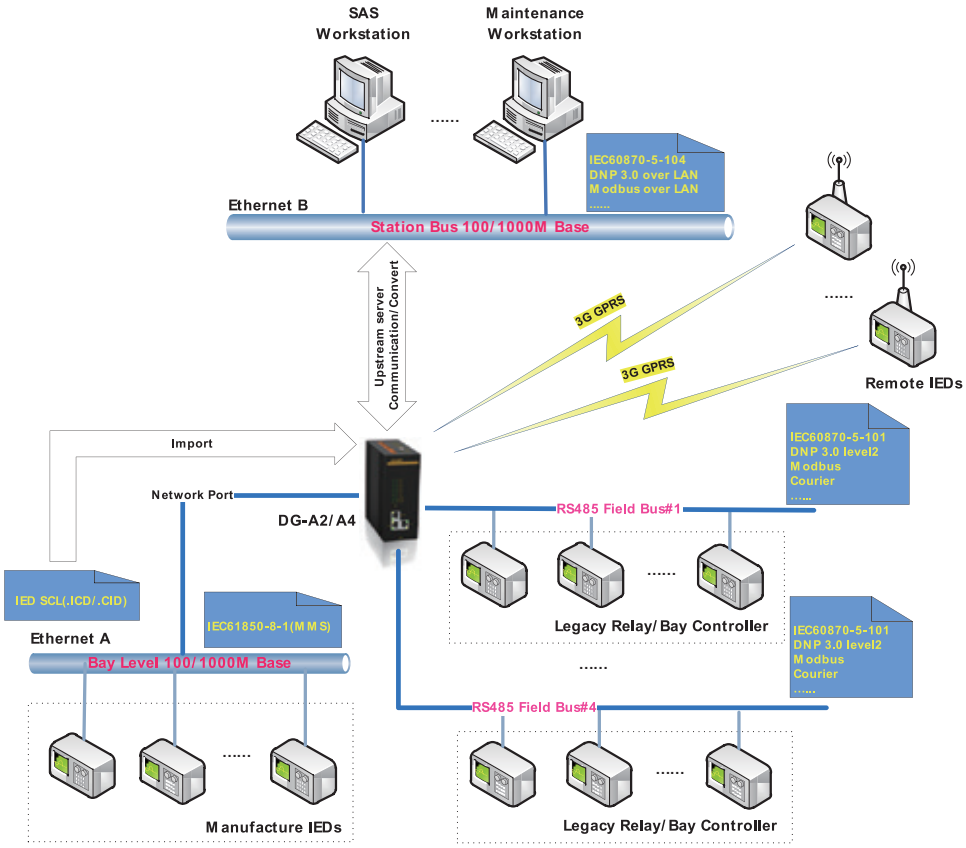
Technical Benefits

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

Typical Application



Convert traditional data to IEC 61850 MMS Server



Data concentrating with DG-A2/A4 gateway

Technical Parameters

Items	A2	A4
Console port	RS232, RJ45	RS232, RJ45
Serial ports	2 x RS232/RS485(Isolated)	4 x RS232/RS485(Isolated)
Ethernet	1 x 10/100M RJ45	2 x 10/100M RJ45
GPRS Module	1 x 3G Optional	1 x 3G Optional
Build-in storage	512M Nand Flash	512M Nand Flash
Extra storage	N/A	8G/64G Micro SD
Hardware Watchdog	Configurable	Configurable
Time synchronization	NTP	NTP
Power supply	12~24V DC/85~264V AC	12~24V DC/85~264V AC
Power consumption	< 5W	< 5W
Weight	0.5 kg	0.5 kg
Dimensions(W*H*D)	48mmx138mmx86mm	54mmx139mmx118mm
Mounting	DIN rail	DIN rail
Operating Temperature	- 40°C to +85°C	- 40°C to +85°C

Electrical Parameter

- Input: 12~24V DC or 85~264V AC
- Average power consumption: 5W
- 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 Δ U-100%, Δ t = 0.5s
- Insulation resistance: >5MΩ
- 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 ± 2°C, 93% ± 3%, insulation
- resistance: >1MΩ

Ordering Information

	TYPE	POWER	ETHERNET	SERIAL PORT	EXTENTION FLASH STORAGE	WIRELESS EXT	F/W	
DGW	-A2X	-C	-1	0	0	D	-E	G
TYPE								
DG-A2(DIN Rail)								
POWER								
85~265V AC /100~375V DC		1						
12 ~ 24V DC		5						
ETHERNET								
1 x 10/100M BASE-T								
SERIAL PORT								
2 x RS232/RS485 SERIAL PORTS								
EXTENTION FLASH STORAGE								
N/A					0			
WIRELESS EXTENTION								
N/A						0		
GPRS						1		
FIRMWARE								
DEFAULT (IEC 101/104/DNP 3.0/Modbus Slave/Master)							0	0
DG-A4(MMS Server)							A	4
DG-A5(MMS Client)							A	5
DG-A6(MMS Client/Server)							A	6

	TYPE	POWER	ETHERNET	SERIAL PORT	EXTENTION FLASH STORAGE	WIRELESS EXT	F/W	
DGW	-A4X	-C	-1	0	D	D	-E	G
TYPE								
DG-A4(DIN Rail)								
POWER								
85~265V AC /100~375V DC		1						
12 ~ 24V DC		5						
ETHERNET								
2 x 10/100M BASE-T								
SERIAL PORT								
4 x RS232/RS485 SERIAL PORTS								
EXTENTION FLASH STORAGE								
N/A					0			
8G BYTES					1			
64G BYTES					3			
WIRELESS EXTENTION								
N/A						0		
GPRS						1		
FIRMWARE								
DEFAULT (IEC 101/104/DNP 3.0/Modbus Slave/Master)							0	0
DG-A4(MMS Server)							A	4
DG-A5(MMS Client)							A	5
DG-A6(MMS Client/Server)							A	6