

DW 918 LC

CENTRAL INDUSTRIAL ROUTER FOR LINKING TO REDUNDANT GPRS NETWORKS

The DW 918 LC is highly reliable as an industrial router. Using alternative redundancy wireless industrial GPRS to join components of data transfer networks, the device creates data connections between two GPRS private networks (APN) and the central process control system.

FEATURES

- DHCP or fixed IP address
- NAT (target IP address translation)
- PSec encryption

SPECIAL CHARACTERISTICS

- Dynamic route table
- Integrated web server
- Diagnostic functions
- Watchdog
- Complete remote manageability and remote software update from Ethernet and GPRS interfaces

INDUSTRIAL DESIGN

- Operational temperature range -10°C to 60°C
- Protection: IP30
- Omega track mounting

APPLICATION

The DW 918 LC central industrial router is used as a central joining router in industrial communication systems where high reliability is required.

The device, in cooperation with 918 N field GPRS routers and using the IPSec protocol, creates a reliable data connection between field devices and a central process control system.

The easy and secure connection to the field and central networks is made possible by the NAT function of the DW 918 LC and DW 918 N routers.



TECHNICAL SPECIFICATIONS

FUNCTION

Ethernet standard:	10BaseT
Applied protocols:	ICMP, TCP, UDP, FTP, HTTP, ARP
IPSec:	Support for AH Transport Mode, MD5 signature, iGSA encryption procedure
Network functions:	Tracert, ping
Communication buffer:	128 KByte RAM
Program memory:	128 KByte Flash
Settings via web interface:	Yes
Engineering interface:	Yes

CONNECTION INTERFACE

Ethernet jack:	8 pole RJ45
DC jack:	2 pole Phoenix Contact Combicon

LED STATUS SIGNAL

POWER:	Presence of power supply
ETH Coll.:	Ethernet collision
ETH Rx:	Ethernet data receive
ETH Tx:	Ethernet data send

GENERAL CHARACTERISTICS

Voltage:	24V DC \pm 10%
Power consumption:	max. 700 mW
Operational temperature:	-10°C to +60 °C
Storage temperature:	-40°C to +120 °C
Relative humidity:	5% to 95% (non-condensing)
Vibration:	2.1g - 15-150Hz \pm 25 mm deviation
Size (LxWxH):	25x122x117mm
Protection against reversed voltage polarity:	Yes

GENERAL INFORMATION

PURPOSE OF THE DEVICE

The alternative redundant GPRS industrial communication system serving field stations is made up of at least one DW 918 N field router and one DW 918 LC central router. The DW 918 N field routers connect to the central DW 918 LC router over the GPRS private network (APN) and the corresponding least line. Together a secure data channel is ensured to the central process control system.

The two-way IP - IPSec conversion and the target IP address translation is handled by the DW 918 LC router.

SECURITY

The security of the transferred GPRS packets is guaranteed by the IPSec protocol. To prevent unwanted manipulation of data, every IP packet is signed with an MD5 hash code. The iGSA encryption procedure prevents information from falling into unauthorized hands.

The implementation of the IPSec protocol AH Transport Mode standard eliminates potential duplication of packets.

SETTINGS

Operational parameters and settings can be adjusted via an integrated web server and the HTML page it presents and also via the engineering port (12C bus) using the DW 900 TWI software.

DIAGNOSTICS

The device collects diagnostic information while operating. Such information includes time since switch on, network circuit handling data, GPRS statistics, and IP traffic counting. The diagnostic information can be viewed on the device's web interface or can be continuously channeled to a pre-defined IP address. Diagnostic information can also be queried via XML.

OPERATION

The operation of the device fundamentally corresponds to that of a traditional router. When specifying target IP addresses always that of a single DW 918 N iGPRS unit SIM card is given (static route table). The fixed IP address of the SIM card must belong to the GPRS private domain (APN).

When using the SIM redundant DW 918 N iGPRS, only dynamic routing is available. Then the DW 918 LC dynamically sets the routing rules according to which GSM service provider the various 918 N iGPRS units happens to be using at any given

moment. In this case the use of a fixed IP address APN is not required.

While routing, the device handles every IP packet which meets the given routing rules. When necessary NAT-ing is used and as such only ICMP, UDP, and TCP packets are allowed to pass.

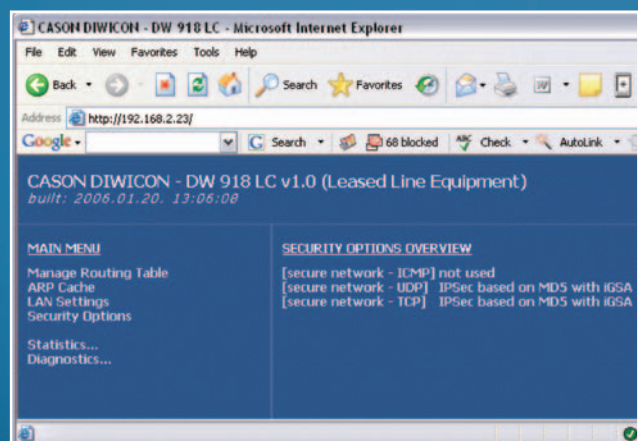
When NAT-ing the device replaces the target IP address in the IP packet header with an address falling in another range. In the reverse direction the original IP address is restored. With this solution, the injection of virtual IP addresses (address ranges) into the network becomes possible.

REMOTE SOFTWARE UPDATE

The software for the microcontroller can be remotely updated by reloading the program stored in FLASH memory.

This takes place via Ethernet and GPRS. The upload is performed using the DW 900 FWU software. "A90" extension Intel-extended format rendered files may be used for the upload, which the manufacturer provides, together with the software, when a version upgrade is necessary.

During the software upgrade all other functions remain undisturbed and available. Following a successful update, the device automatically restarts and the new version becomes active. If the update is unsuccessful, it can be repeated at any time.



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