

# DW 982 LC

## CENTRAL INDUSTRIAL ROUTER FOR LINKING TO REDUNDANT GPRS NETWORKS

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The DW 982 LC central router provides extraordinarily high reliability, using parallel redundancy for the central linking of wireless industrial GPRS data transfer networks.

### FEATURES

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

### SPECIAL CHARACTERISTICS

- Duplicated route table
- Integrated web server
- Diagnostic functions
- Watchdog
- Complete remote manageability and remote software updated from an Ethernet interface

### INDUSTRIAL DESIGN

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

### APPLICATION

The DW 982 LC central router has extraordinarily high reliability, using parallel redundancy, and wireless industrial data transfer for the central linking of networks.

The device, in cooperation with the DW 918 B iGPRS field router and the DW 982 L field router and using the IPSec protocol, creates an extremely 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 982 L and DW 982 LC routers.



## TECHNICAL DATA

### FUNCTIONS

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

Duplicate route table: Yes  
NAT (Network Address Translation) function  
Engineering interface: Yes  
Settings over web interface: Yes

### CONNECTION INTERFACE

Ethernet jack:	3 x 8 pole RJ45
DC jack:	2 pole Phoenix Contact Combicon

### LED STATUS SIGNALS

POWER:	Presence of power supply
ETH 1,2,3 Coll.:	Ethernet collision
ETH 1,2,3 Rx:	Ethernet data receive
ETH 1,2,3 Tx:	Ethernet data send

### GENERAL CHARACTERISTICS

Voltage:	24V DC $\pm$ 10%
Power consumption:	max. 850 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 $\pm$ 2.5 mm amplitude
Size (LxWxH):	25x122x117mm
Protection against reverse polarity voltage:	Yes

## GENERAL INFORMATION

### PURPOSE OF THE DEVICE

The redundant parallel GPRS industrial communication system serving field stations is made up of at least one DW 982 L field router, one DW 982 LC central router and two DW 918 B industrial GPRS relays. The DW 982 LC central router provides the simultaneous data connection between the two GPRS private networks (APN) and the field process controller. The central routing and the NAT function is performed by the DW 982 LC field router.

### 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.

### REMOTE SOFTWARE UPDATE

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

### OPERATION

The operation of the device basically corresponds to that of a traditional router; however, when setting the routing rules, not just one, but two IP addresses can be given.

The IP addresses thus given, always point to each IP address of the SIM cards of the DW 918 B iGPRS units. The SIM cards must belong to fixed IP addressed APNs.

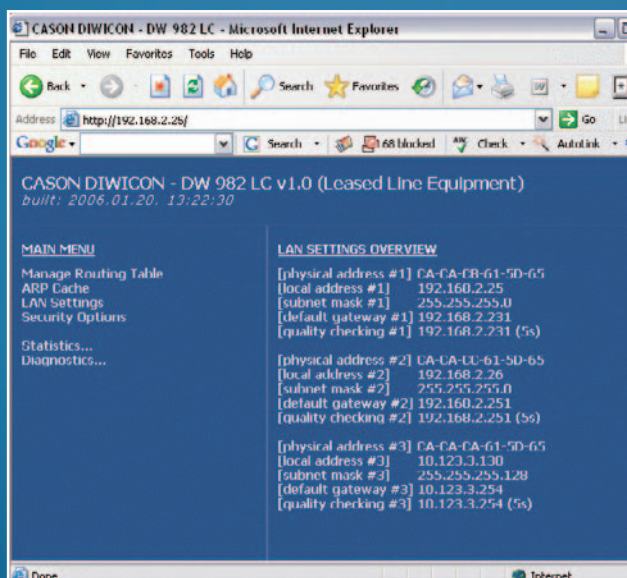
During routing, outbound IP packets are delivered simultaneously into the networks of the two independent GSM providers.

This solution offers extremely high communications availability along with an increase in communications costs. Only the first of the duplicate IP packets sent is registered at the destination location. Thus, the GPRS transmission time at any given moment is determined by the provider with the fastest transmission. The device has three independent Ethernet ports each with separate network settings. Among these, one connects to the local network, the other two to the APNs of the two GSM providers.

This solution allows for the physical separation of the networks with differing functions. With suitable settings, all three ports can, of course, be connected to a single network.

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 virtual IP addresses (address ranges) into the network becomes possible.



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