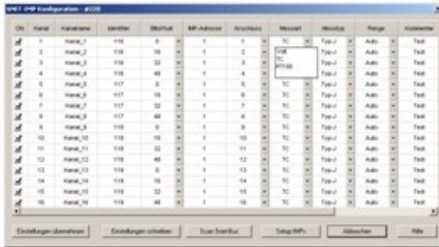


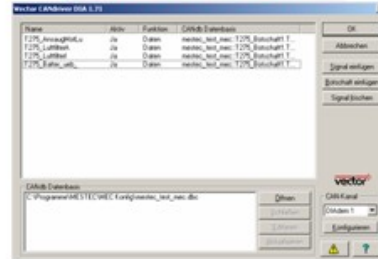
SNET/CAN/Ethernet Converter

Configuration with CCPConfig




Data Acquisition via CAN

DIAdem™



Converter

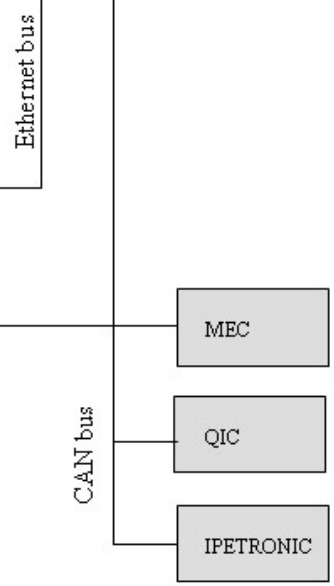
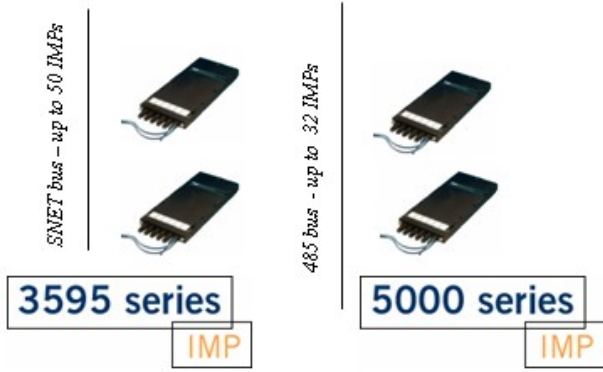
Pentium-PC with
Windows XP Embedded



SNET/PCI
RS-485

Ethernet TCP/IP

CAN (CCP)



Principle of Operation

The SNET/CAN Converter operates as an interface between the **Solartron IMP** modules and the **CAN** bus or, alternatively, the **Ethernet** bus (MODBUS/TCP). It can be used in combination with any evaluation system using the CAN or Ethernet bus, e.g., DIAdem, LabVIEW or ETAS.

The Converter provides all the functions necessary for initialisation and for reading the measured data. It sends the measurement values of the Solartron IMP modules automatically after each measuring cycle to the CAN bus or, alternatively, to the Ethernet bus.

With the built-in SNET-PCI 3595C board, all series 3595 IMP modules can be used. The series 5000 IMP modules can also be used provided the RS485 option is installed. A maximum of 1000 channels from up to 50 IMP Modules can be defined for measurement and output to the CAN bus.

The Converter provides a self-starting capability, i.e., the measurement is started automatically as soon as the operating system has been booted, using the last-stored configuration.

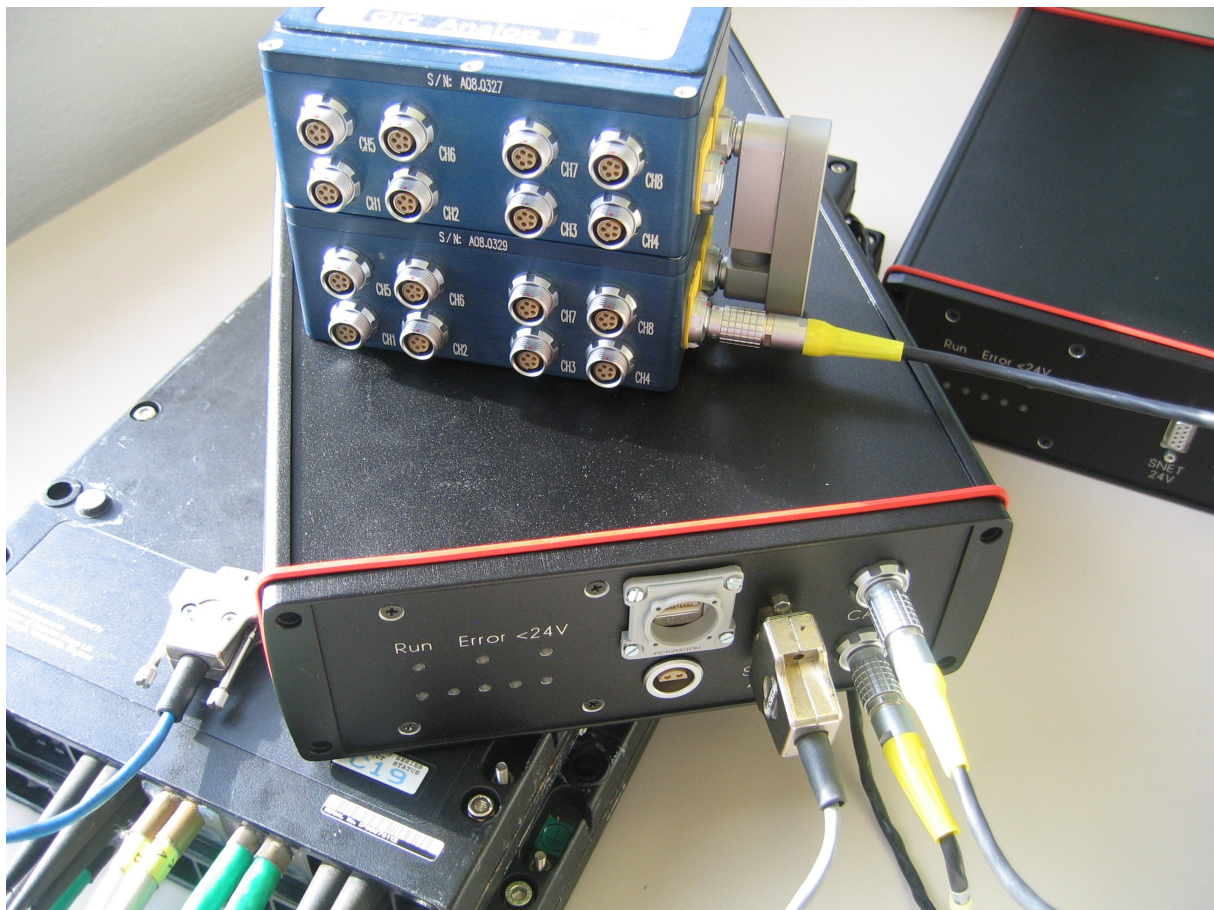


Fig.1: The SNET/CAN/Ethernet Converter with IMP and QIC modules

Construction of the Converter

The built-in PC104 computer board uses a low-power version Pentium CPU, 500 MB RAM, and a 2GBD CompactFlash memory card, all working at temperatures from -20 to +60°C. Using the Windows XP-embedded operating system and loading the program code from a flash disk provides reliable booting, no matter when or how often the system was shut down. Because the Converter operates without a monitor, keyboard or mouse, an LED array on the front panel is used to indicate the operating state.

The Converter **contains no moving parts** like a hard disk or a CD drive and is suited for **stationary and mobile applications**, as well.

High-grade DC/DC converters with a wide input range from 15V (Optional 9V) to 36 Volts are used for power supply, and the circuit is equipped with polarity reversal and overvoltage protection.

The 24 V DC supply for the 3595 and the 5000 series IMP modules is provided by an internal voltage converter capable of supplying max. 40 W.

The Converter is housed in a stable, structured aluminium case. The user interface is provided by a number of elements on the front and the rear panel.

Positioned on the front panel are the LED status indicators and the sockets for the SNET-, CAN-, RS485- and Ethernet-bus.



Fig.2: Front panel of the SNET/CAN Converter

On the rear panel are a the power plug with a robust on/off-switch, the fuse holder, the power-indicating LED, and also the stickers containing the serial number of the unit and the license number of the XP-Embedded software.



Fig.3: Rear panel of the SNET/CAN Converter

Configuration and Data transfer

The program uses a table of channels which manages all measurement parameters. The channel parameters are configured via the CAN or the Ethernet bus and are stored in a configuration file; they are read whenever the program starts.

Configuration of the Converter is accomplished with the Windows program "SCCConfig.EXE" via the CAN bus by use of the CCP protocol. Each output channel is specified by the IMP address, the terminal number, the measuring mode, and the CAN identifier with data offset. The channel parameters are stored in an "DBC-File". The measured data are sent to the CAN bus as packets containing an 11-bit standard identifier and 8 data bytes. That means that each packet contains 4 measurement values with 16 bits = 2 data bytes each – corresponding to the MEC/QIC modules. The actual measurement value is obtained by means of a scaling factor and an offset:

Alternatively, the configuration and data reading of the Converter is accomplished with the "MESTEC IMP DIADEM Driver" via Ethernet by use of the "MODBUS/TCP" protocol. The "MESTEC IMP UNIVERSAL Driver" supports LABVIEW or User Specific Applications by use of a "Windows 32-Bit DLL".

SNET Interface

The built-in 3595C-type SNET-PCI board connects the Converter to the series 3595 IMP modules.

An internal 24-V power supply (40 W max.) is used for the SNET-PCI board. Thus, a minimum of 25 IMPs consuming 1.2 W each can be connected without needing an additional external power supply.

The SNET bus from the SNET-PCI board is wired to a 9-pin DSUB socket on the front panel.

CAN Interface

The Converter is connected to the CAN bus by an optically isolated CAN interface and two paralleled ODU sockets on the front panel. The two sockets provide compatibility with the MEC/QIC and IPETRONIC cable system.

RS485 Interface

The connection between the Converter and the series 5000 IMP modules is accomplished by an integrated, optically isolated RS-485 interface and the serial RS-485 bus using the MODBUS protocol. For the external connection to the IMP 5000 Modules, a 4-pin Lemosa socket (Type FFP.2S.304) on the front panel is used (see figure 1), which is connected to the internal 24-V power supply, described above under “SNET Interface”.

Ethernet Interface

The Converter can be alternatively connected to the PC or notebook via Ethernet using the TCP/IP protocol. An optional RJ-45 socket on the front panel is provided for that purpose (see figure 1).

Technical Specifications

Connections:

4 way Souriau connector for Power
9-way D-type female connector for S-Net.
10-way ODU connector for CAN, Dual
4-way LEMO connector Series 2S.304

Environment:

Temperature Operating	0°C to 55°C (50% Relative Humidity) 0°C to 45°C (95% Relative Humidity)
Storage	-40°C to 70°C

Communication S-Net:

Maximum of 50 IMP devices, IMP3595 or IMP 5000
Maximum S-Net cable length of 1500m.

Communication CAN:

500 kBaud High Speed CAN

CAN Configuration Software:

SCCKonfig.EXE Supports CAN PC Interface by VECTOR or KVASER

Communication RS485:

19200 Baud, MODBUS ASCII or RTU

Communication Ethernet:

MODBUS TCP

S-Net Power Supply capability:

Up to 25 IMP devices can be supplied, at limited distances, from the internal power supply.

Power Drain:

Input	15-36VDC (optional from 9V), 12W
IMPs (24VDC)	max. 40W 1.2W for each 3595 Series IMP 1.8W for each Universal Series IMP.

Physical dimensions:

Overall length	400mm.
Overall height	75mm.
Overall width	210mm

Scope of Delivery

Snet/Can/Ethernet Konverter

Power-Cable with two 4mm sockets

RS485 Cable with LEMO Connector 2S.304

Ethernet CAT5 Cable, length 2m, with RJ45 Connector

Software SCCKonfig.EXE

User Manual and Quickstart Manual