

The
**State-of-the-Art
Remote Control**
built on Tradition
and Innovation



Company Portrait

OHP was founded in 1989 by development and project planning engineers of the automation control department **AEG** (Seligenstadt/Germany) as separate enterprise for Remote Control and Telecontrol products.

The founders of OHP, with their special knowledge as former employees of the group, were closely involved in the development of the **Geadat Remote Control** product line. As entrepreneurs they are still today "connoisseurs" of this product line. Proprietary and order based developments of AEG and its successor, Schneider Electric, Seligenstadt/Germany, are one of three emphases of the enterprise. Since September 2000, there has been a close cooperation with Schneider Electric to the product support for Geadat products.



For more than ten years OHP has been successful in the market with their software standard **ProWin®**, an in-house development for **telecontrol** of distributed processes.

The combination of remote control systems, telecontrol and process forms the third enterprise emphasis. Qualified engineer services range from consulting to the turn-key plant.

We safeguard your investment.

On 1st August 2003 the product responsibility for remote control components was transferred from Schneider Electric to OHP Automation Systems GmbH. For product support, future deliveries, product maintenance and upgrading development we were pleased to become valuable partner.

The product range covers:

- Remote control devices on PLC basis and programming technics
- ProXkon telegram conversion/-migration
- Telegram test and diagnosis tools
- DIB Text displays
- Software standard ProWin® for centralized remote control



Geadat Remote Control Systems with Future and Tradition

Innovation with experience



- Direct connection to ProWin® telecontrol devices with or without remote control head
- Connection compatible to control systems with IEC 870-5-101 or SEAB 1/F process interface

Successful and competent in the remote control business for more than three decades.

We look back on a long-standing tradition of innovation and simultaneously high delivery punctuality, in the development, manufacture and installation of Geadat remote control devices as a result of our spare parts inventory and migration strategies. On the basis of our competence in development and application we adapted years ago the more flexible PLC technique for remote

control and so replaced the hard-wired remote control devices. Numerous applications nationally and internationally confirm the success of our strategy.

In well-proved tradition we offer

- Remote Terminal Units (RTUs or substations)
- Submasters
- Front end processors (Host system) with high adaptation quality and high performance level.

We provide efficient solutions in the realm of

- Distribution networks for gas, water, oil, remote heating, energy distribution

- Water processing (distributed pumping stations, treatment plants)
- Rail service automation (power systems)
- Infrastructure (HVAC, lighting, object monitoring, signaling systems)
- Environmental protection

Consistent upgrading developments according to IEC standards

- On the basis of the latest PLC technology
- Specially adapted to meet the requirements of telecontrol engineering
- Developed in full compliance with IEC standards for programming (IEC 1131) and communication (IEC 870-5-101).

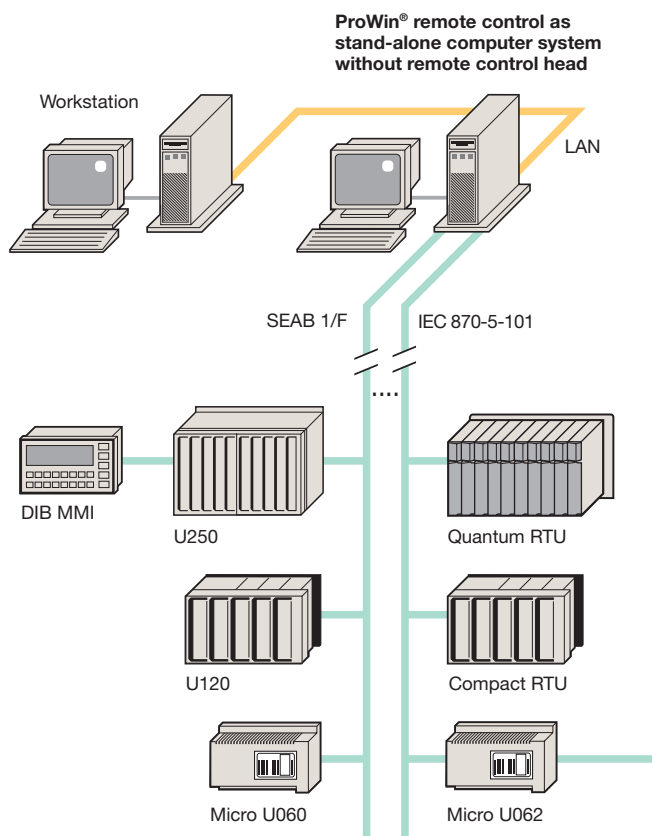
Obsolescence-proof scalability protects your investment

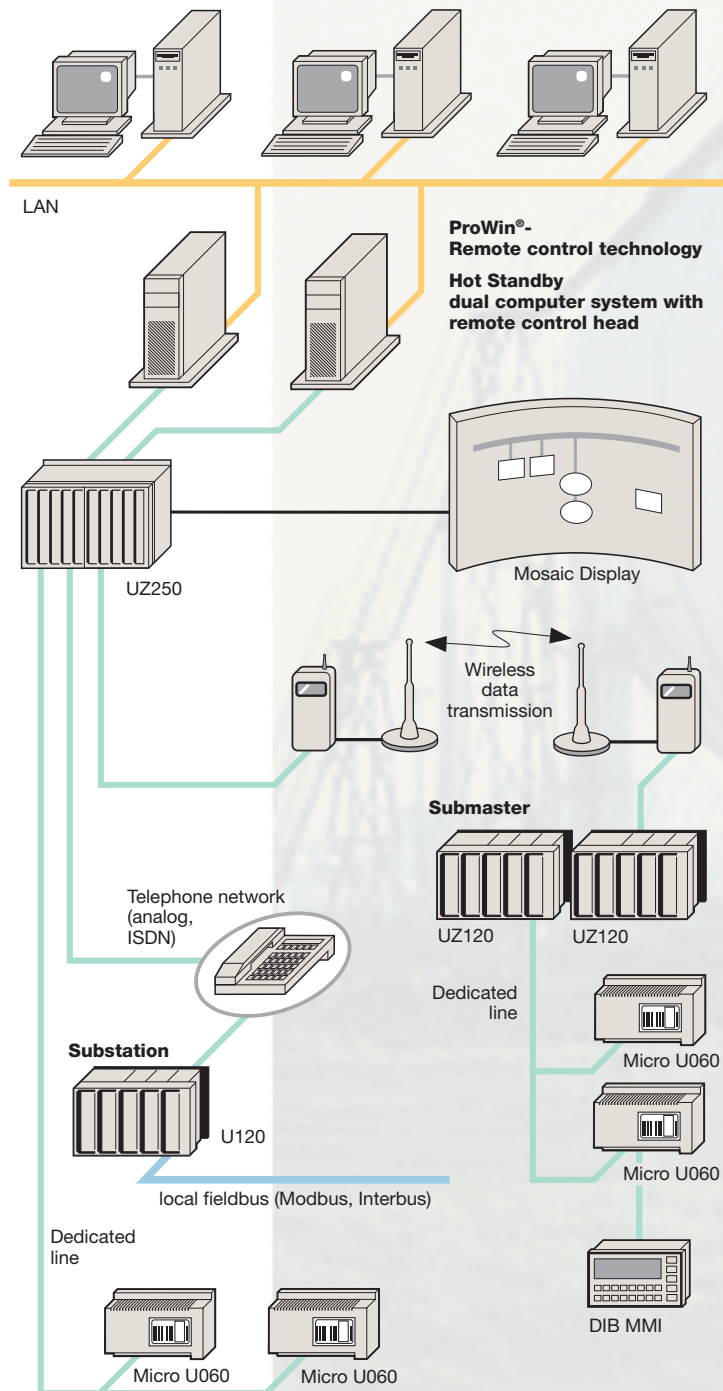
State-of-the-art technology coupled with IEC standards assures your new systems functionality well into the distant future. But we by no means neglect your existing equipment: Our current line of Geadat products is still available. In addition, our migration strategies, applied for instance in the extensive expansion of existing systems, will ensure a smooth transition to the new product generation.

Master station tailored to your requirements

With ProWin® we offer a powerful host system for telecontrol applications. But in view of our commitment to open system architecture, our RTU-IEC stations can also be connected to your existing host or that of a third party. Furthermore, if you want to integrate a front end processor this represents no problem. A front end processor can also be integrated.

Remote control devices fit very simply onto our systems for the enterprise remote control system or - thanks to open standards with the communication - onto third party systems or your existing host.





It was this equipment series that launched our successful tradition of utilizing PLC technology for telecontrol purposes. Given the vast number of units employed in a multitude of applications, we have every reason to continue making these models available both for spares and for the expansion of existing systems, and/or to provide migration paths to RTU-IEC.

Proven Telecontrol Stations Protect Your Investment

Geadat 060, 120 and 250



Modular solutions for large data volumes: The U250 RTU stations and UZ250 submaster.



Modular solutions for moderate data volumes. In a uniform system layout, you have the option of using the Geadat 120 as an outstation (U120), a submaster (UZ120) or a small master station (Z120).



The low-cost, compact Geadat U060 outstation. Available in two plug-and-play models for small to moderate data volumes.

Flexible Communication for any System

Depending on the operational task, the data exchange takes place via point-to-point links or, for multipoint communication, by way of party-line or multipoint-star connections. All units operate under Modnet 1/F, the standard protocol of the Geadat family, or under Modnet 1/W, a protocol that follows early rules of the international IEC 870-5-101 standard.

The **Geadat U060** is the low-cost starter model for your entry into the family of Geadat systems. As an outstation it provides valuable feeder services for the larger submasters and masters. And, by the way, it is a full-fledged PLC, capable of handling the trend toward blending telecontrol and system-control functions through fast-response, on-the-spot completion of a large number of these functions by virtue of its

great processing power, short cycle times and distributed I/O.

The **Geadat 120** series consists of modular equipment offering particularly attractive cost benefits through sophisticated universal system connectivity features. From a broad selection of I/O modules you can configure the right combination for your specific application, with just a few such modules needed to define its functionality as

- a RTU station,
 - a submaster or
 - a master station
- This lets you minimize your parts inventory and procurement cost in the planning, installation and operating stages.

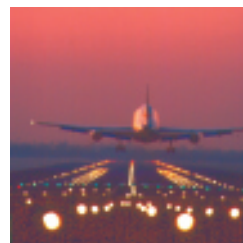
The **Geadat 250** is the system family member with modular RTU stations and submasters for the acquisition, execution and transmission of more voluminous instructions and messages. At the same time it functions as a high-per-

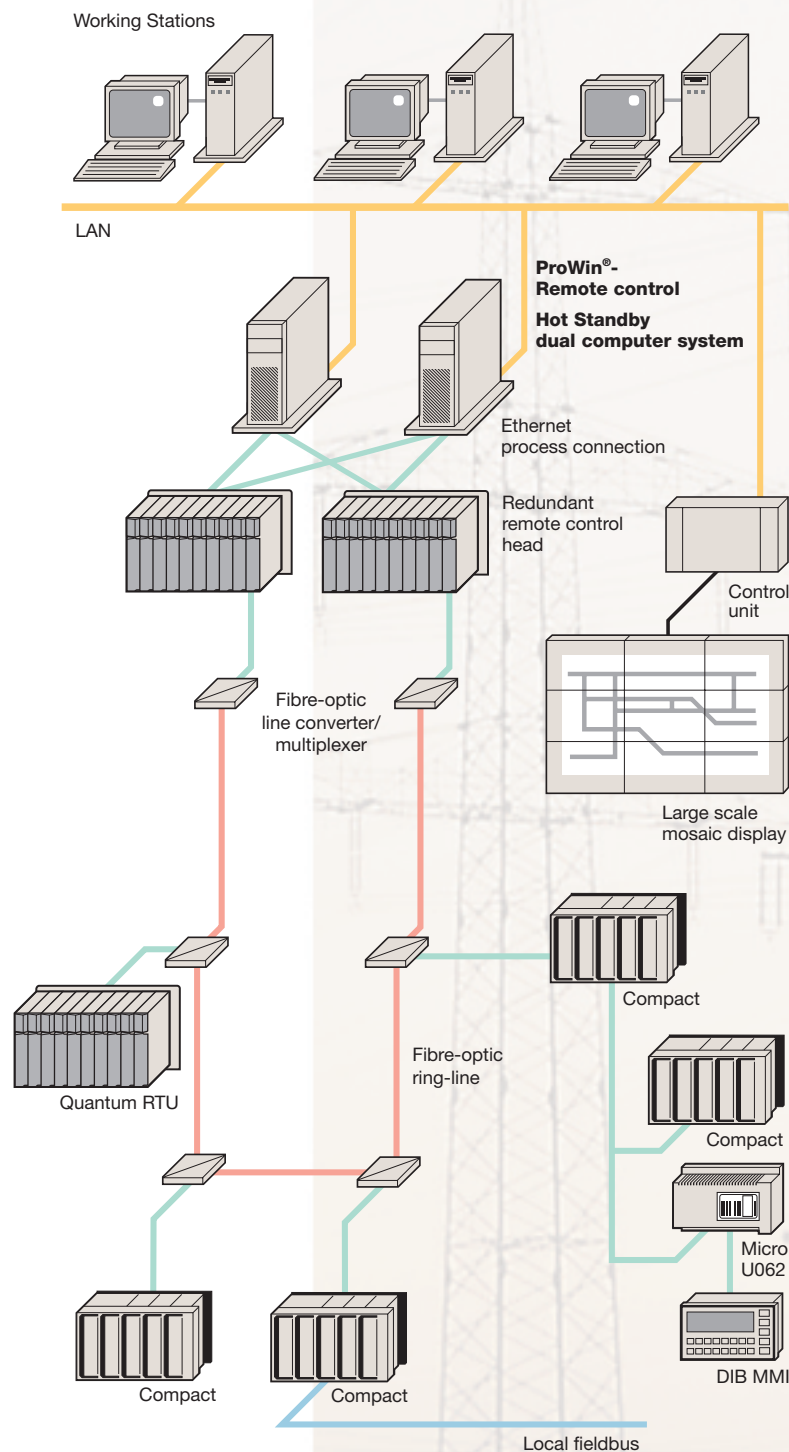
formance automation PLC for a variety of control operations and solutions.

Software for efficient programming

When it comes to programming for control operations, the Dolog AKF programming language lets you choose between instruction list, ladder diagram or logical function block diagram, depending entirely on your expertise or the customer's needs.

For telecontrol operations you use "PRO-FWT". This expert software will automatically generate a standard program, the communication procedures and your complete set of documentation. All you need to do is to enter the basic system data. This way engineers will save a considerable amount of time and can concentrate on their main tasks of providing the specific system application.





An International Standard for Global Business

For obsolescence-proof new system installations and international system business RTU-IEC provides the advantages of state-of-the-art remote control systems:

- standardized data units
- encoded bit-serial transmission
- degrees of freedom for mode and amount of programming
- remote parameter change
- defines a "private" area for the user

RTU-IEC: Systems Engineering Within International Standards

Telecontrol Stations with IEC 870-5-101-compliant Protocol



Quantum-RTU:
The telecontrol system for front end stations, submasters and RTU stations with large data volumes.



Compact-RTU:
The telecontrol system for submaster and RTU stations with medium and small data volumes



Micro U062:
The low-cost telecontrol system for RTU stations with small data volumes, ready to connect

Quantum, Compact and Micro-RTU: High-performance telecontrol stations

RTU-IEC is the continuation of our successful strategy of employing PLCs in telecontrol applications. We adapt them to the specific requirements of telecontrol operation without sacrificing any of the PLC's advantages:

- Economic advantages due to great numbers
- High reliability of industrial PLC standards
- PLC functions, for instance logical pre-combination
- Connection of I/O stations via LAN communication buses (Profibus, Interbus S, etc.), e.g. for object monitoring

Specifications are shown in the comparison chart on the rear side and, in detail, in the appropriate equipment brochures.

Compact RTU for medium to small stations: Submasters, RTU-Stations

- Master and slave functions
- Up to 7 KOS 260 communication modules
- 2 interface ports per board permitting communication redundancy
- Ring buffer for up to 25,000 messages
- Up to 65,536 station addresses per system available
- Up to 65,535 object numbers (process variables) per station
- Up to 256 I/O points per station (total number depends on data types)
- Time stamp in KOS 260 with 10 ms resolution (DCF, GPS)
- Modules for special environmental conditions (-40°C to +70°C, protective coating)

Quantum RTU for large stations: Head ends, submasters, RTU stations

- Master and slave functions
- Up to 7 communication modules 140 ESI 062 00
- 2 interface ports per board permitting communication redundancy with one ESI 062, e.g.
- Ring buffer for up to 13,000 messages
- Up to 65,536 station addresses per system
- Up to 65,535 object numbers (process variables) per station
- About 2,000 I/O points per station
- Data preprocessing (PLC functions)
- Time stamp in ESI 062 with 10 ms resolution (DCF, GPS)
- Direct real-time acquisition of discrete and counter inputs using 140 ERT 854 10, with 1 ms resolution



TEL 003: Flexible IEC Diagnostics

Busmonitor for Remote Control Devices according to IEC 870-5-101

Test and startup of Remote Control Systems

TEL 003 is a tool kit with which you can test your remote control system fully. Whether at initial startup or in the case of issues: You have full insight into all data and the remote control transmission protocol according to IEC 870-5-101 in the dedicated line mode. In the dial mode (AWD – automatic dialling device) - which is not defined by IEC - TEL 003 also works with systems of specific implementation partners.

TEL 003 is based on Windows and allows flexible parameterization through the simulation of substations (slave mode) and master stations (master mode) in clear menu windows. In the listener mode the data traffic between the master station and the substation is monitored and recorded.

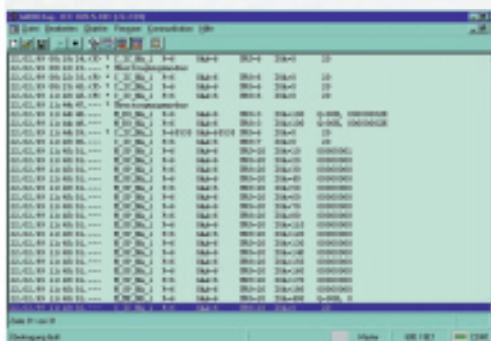
Operation modes

- Master for dedicated line or AWD (automatic dialling mode)
- Slave for dedicated line or AWD
- Listener for dedicated line

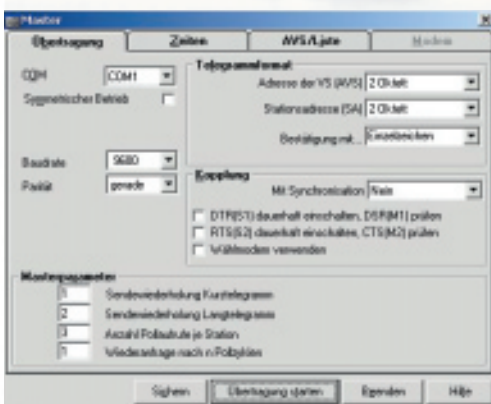
In all three operation modes the telegram traffic is clearly processed and displayed. In addition a monitor function records the data bi-directionally at the COM-interface.

Areas of application

- Initial startup
- Test of the long distance line
- Fault diagnosis (Expert, measured value, count value, status)
- Launch of test telegrams
- Inquiry and/or value preset of objects and the associated parameters
- Automatic record of telegram data
- Trace buffer for analysing the telegram traffic



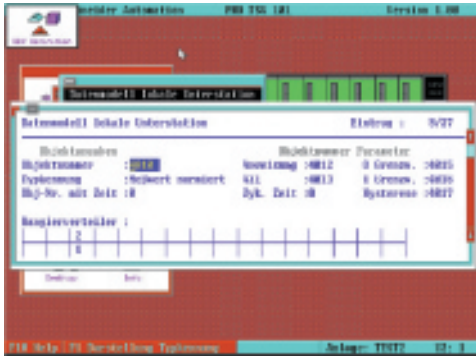
Clear representation of telegrams in the us monitor



Clear and flexible parameterization for master, slave or listener mode.

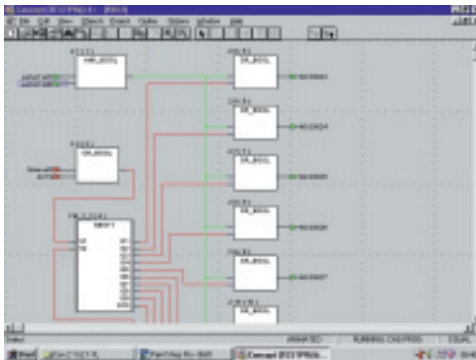
ProFWT: Configure Remote Control Systems

Efficient configuration, programming and testing



The PRO-TSX 101 Configuration Tool, for

- easy generation of communication parameters
- user-selected message routing
- bottom-up export and import
- archiving of the station parameters



IEC 1131-compliant programming with Concept

- Programming via the Windows user interface
- IEC-compliant graphic editors for multimode user-program display
- Modular architecture (sectorized)
- Simulation, troubleshooting and diagnostics

Choose your preferred mode of physical transmission

When configuring the link between your tele-control stations, you can choose between multi-point party-line and multipoint star connections, whichever best meets your operational requirements. You can also select your communication paths:

- Dedicated lines, analog modems
- Fiber-optic cable
- MODACOM
- Dial-up connections, analog and ISDN modems
- GSM transmission within the D-Net (Mobil-Net)
- Radio link transmission
- Bundle radio transmission
- City call
- Time-slot radio link transmission

Time Saving Configuration Procedures with the PRO-TSX 101

Using one single configuration tool for all stations will save you time and money. You will find the "bottom-up" export and import feature particularly helpful: Data, once entered, will be available across the entire system without additional keying and the inevitable typing errors.

After object definition on the display screen and entry of the station data, PRO-TSX 101 will generate a standard user program, establish the communication parameters, archive the data and print out the documentation.

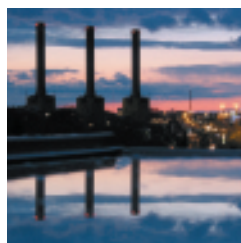
Concept: PLC Programming according to IEC 1131

With Concept, the IEC 1131 programming

language for Quantum and Compact, you work in the familiar Windows environment. The graphic editors used for all IEC display modes of the user program (IL, LD, FBD, ST and SFC) are complemented by the "DFB Editor" for creating reusable derived function blocks and for structured programming. Various IEC libraries and even a separate tele-control device library permit particularly effective programming.

Testing

Concept is also a very powerful simulation, troubleshooting and diagnostic tool. With PLC simulation on the PC monitor, an animated display lets you preview the actual program and assist you in debugging your program before installing it into your RTU station (see illustration on left).



Protocol Converter ProXkon

Integrating different remote control systems

Use the Existing Plant and Expand Flexibly

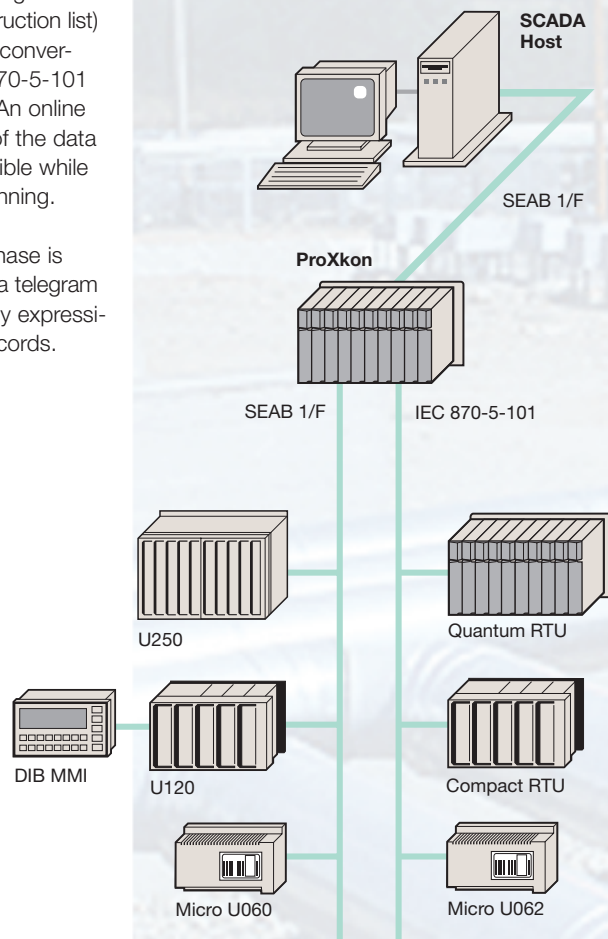
If existing plants are supposed to be expanded or several lines of remote control systems are supposed to be brought to a common host, the protocol converter ProXkon is the correct migration solution.

As a PC with the operating system MS-Windows NT/2000 it converts different protocols on the process side (IEC 870-5-101, Modbus etc.) into the SEAB 1/F (Modnet 1/F) protocol. Existing SEAB 1/F telegrams of existing system sections (substations) are transmitted via process links SEAB 1/F Master. Up to six different process links with a maximum of 16 lines are possible. ProXkon offers the process link SEAB 1/F Slave (also) for the linking of third-party manufacturers into the control system.

The data points and/or telegrams are converted through a freely configurable data model into the protocol SEAB 1/F where logic programmed in IL (instruction list) optimizes the conversion of IEC 870-5-101 to SEAB 1/F. An online enlargement of the data model is possible while the plant is running.

The startup phase is supported by a telegram monitor and by expressive initiation records.

Example of a migration solution where IEC 870-5-101 remote control stations are linked to a SCADA host with SEAB 1/F connection.



Text Displays DIB

Configurable Plain Text Displays for Remote Control Stations



DIBO10, 2 x 16 characters



DIBO20, 4 x 16 characters



DIBO30, 2 x 20 characters

For more DIB Text Displays
a special brochure is available
for you.

Fast information on site

For every information and action requirement on site a fitting DIB console terminal is available - from 32 to 320 characters. The simple handling and connection capability are common to them.

The configuration software for up to 100 images of the freely programmable console terminals runs on every standard PC.

The time required for the configuration is limited to a minimum. Changes are configured within a few minutes and ready for use.

Via the programmer-interface the DIBs are connected directly to the Micro U060, U062, U120 and U250 thus offering a great number of indication possibilities and input of signal memory contents in parametrizable text or number formats. Images can be organized in hierarchical menu trees and may be selected by function keys or from the PLC.

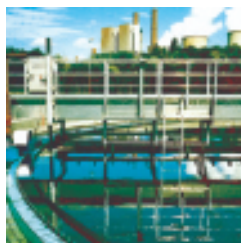
Logging on printer

System status is recordable at any time - both by manual order or on automatic request from the PLC. Also here the DIBs are especially simple: As a listing device every printer with

standard (Centronics)-interface is suitable.

Alarm processing

Illegal process states are signaled by alarms which can be monitored independently of the active images and printed if required.



The OHP range of facilities

The core business

of OHP is development and marketing of products related to the telecontrol and remote control technology. In addition we offer our extensive experience from many implemented plants as competent services around the topic telecontrol and remote control.

Consulting and planning

of optimal remote control systems with and without tele-control linking with new systems. Migration strategies during the retrofit of plants have been in use for a long time.

Software engineering

of custom-specific func-

tions for the realization of individual demands on the remote control systems.

Project planning services

as supporting service or as complete service including installation and initiation.

Requirement Oriented Training

on site or

in-house. Training contents tailored to the customer's orders and/or given facts required.

Delivery and installation

of pre-configured remote control devices, protocol converters, of PC complete systems including installation of operating system, LAN/WAN accessibility,

telecontrol software packages, ready for immediate use.

Qualified support

for the offered products. Premium support with agreed response times or stand-by service.

Remote control stations	Geadat 250	Geadat 120	Geadat U060	Quantum-RTU	Compact-RTU	Micro-RTU U062
Functions	UZ, U	Z, UZ, U	U	UZ, U	UZ, U	U
Protocols	1/F, 1/W	1/F, 1/W (U only)	1/F, 1/W	IEC, MB, MB+, 1W	IEC, MB, MB+	IEC
Amount of data	1.024 PVs	256 PVs	272 PVs	2.000 PVs	256 PVs	272 PVs
Ring buffer	5.000 telegrams	8.000 telegrams	4.000 telegrams	10.000 telegrams	25.000 telegrams	1.575 telegrams
Time stamp	yes	yes	yes	yes	yes	yes
Real-time device	DEZ	no	no	ERT	no	no
Communications-devices	KOS 140/141	KOS 202/203	internal	ESI 062 00	KOS 260	internal
Remote control lines	max. 8	max. 15	1	max. 14	max. 14	1
Redundant Communication	yes	yes	no	yes	yes	no
Decentralized I/O	yes	Interbus	yes	yes	Interbus	yes
Connectivity DIB Terminal	yes	yes	yes	no	no	yes

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