



Industrial Communication

UL Electrodevices Pvt. Ltd.

www.ulepl.com

Vision

To the customer with innovative solutions as the most dependable and respected VALUE ADDED PARTNER and, be equally responsible towards our employees, associates and most importantly, society.

Mission

To create extraordinary growth through multiplying factors like:

- ▶ Innovations
- ▶ Value Additions
- ▶ Forward Integration
- ▶ Expertise & Swift
- ▶ Execution

Philosophy

We, at UL Group have today created an identity out of simplifying the technological maze for our clients. Our use of in-depth analysis, latest technologies and industry insight have earned us the recognition of a company that believes in finding answers that are innovative, cuts through the myriad processes and helps our clients in attuning results in a faster and smarter manner.

No wonder, they too are echoing our belief: *Keep simplifying, Keep evolving*



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Industrial Communication

UL Group, a recognized supplier in the Industrial Automation & Communication field, offers a comprehensive portfolio of Industrial communication Products, Solutions and Services.

One can notice that any Automation solution today, unlike yester-years, has communication networking as a major building block. Then comes the world-class engineering practices and of course the conventional automation technologies. UL Group has been one of very few of those companies in the field to understand this subtle but critical evolution in Industry. This gave us the impetus to develop as contemporary automation service providers of today.

We first put all our energies to emerge as leading experts in Industrial communication of the Field-bus Technology, Ethernet, Fiber Optics & Wireless, UL Group is at forefront. With their parallel efforts in acquiring expertise in world class engineering & automation technologies, has came to be known as a company with wholesome & latest automation services .UL Group now proudly announce their unique ACE positioning as UL-ACE, ACE is Automation Technologies combined with expert Communication technologies and world class Engineering practices for today's industrial environment. UL now works totally around this vision.

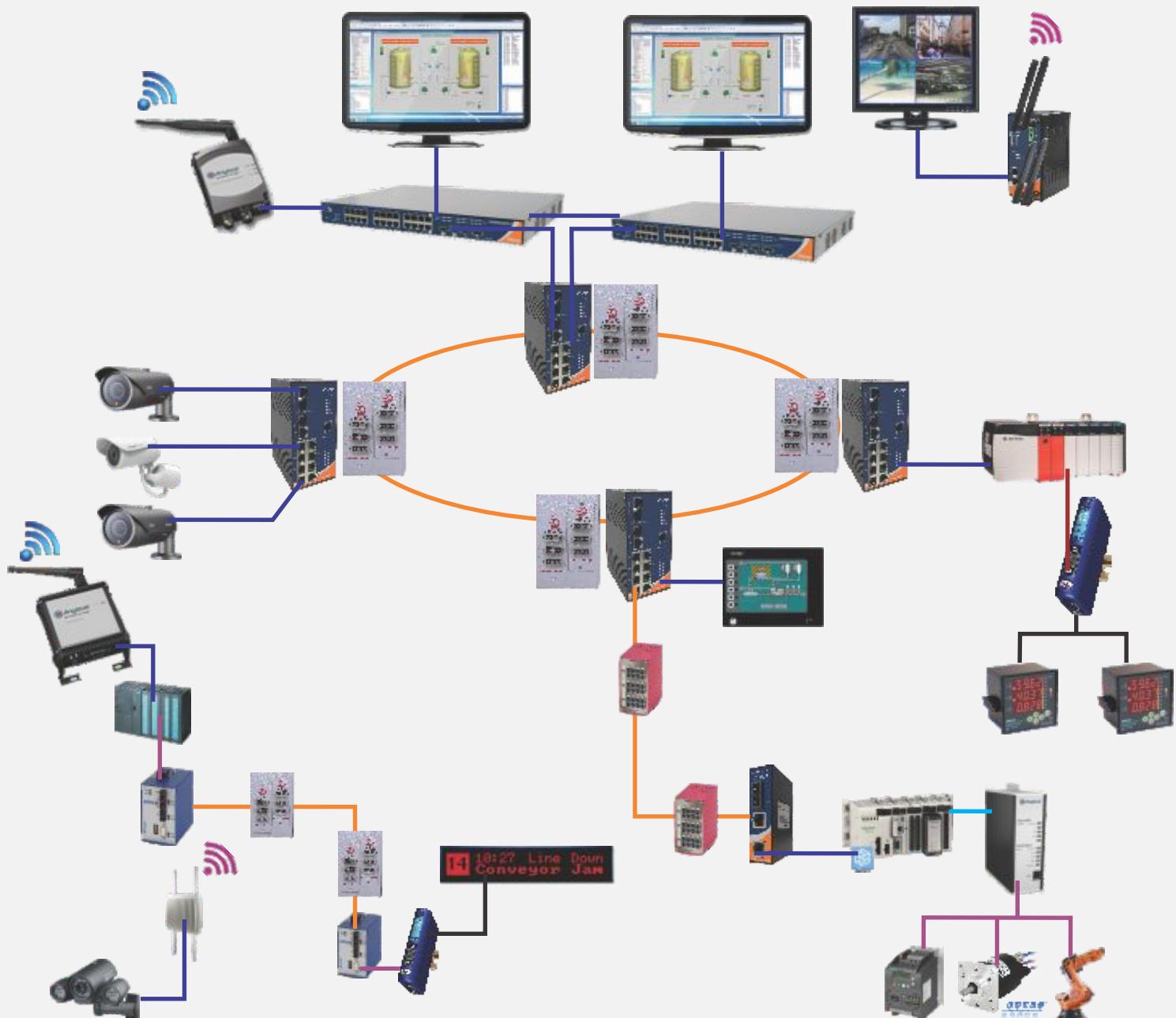
Our basic concept as solution partner, providing a comprehensive & well-matched product range with which we can simplify the complex requirements with our innovative & customized solutions for our customers.

The close relationship with our trusted partners & in depth knowledge of our Technical Team, allows UL GROUP to continuously improve & develop fitting solutions for complex Industrial Communication need for almost every application.

Any Protocol

Any Media

All From One



— Fiber Optics

— Profinet

— Modbus TCP

— Serial RS232/485

— Ethernet/IP

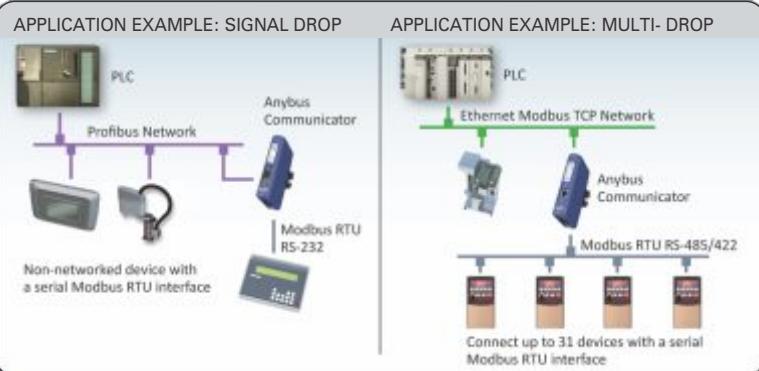
— DeviceNet



— Ethernet TCP/OPC

— Wireless

Protocol Converter

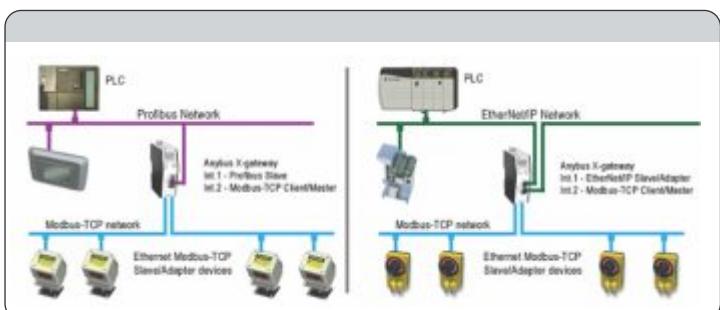


Communicator

- ▶ Certified and proven Communicator family connecting automation devices via their Serial interface RS-232/422/485/ASCII/Modbus RTU/DF1/Customize Protocol To Fieldbus and Industrial Ethernet protocols.
- ▶ Handy Save/Load function allows for a completed configuration to be re-used for many other installations
- ▶ Possibility to connect up-to 31 nodes via one Communicator
- ▶ Requires no hardware or software changes to be made to the connected device
- ▶ Password protection prevents unauthorized upload and download of configurations
- ▶ Compatible with PLC from leading manufacturers such as Siemens, Rockwell, Schneider etc.
- ▶ Available in Profibus, Profinet, Device Net, Ethernet/IP, Modbus TCP& many more
- ▶ Included "Anybus Configuration Manager" with Flexible Serial frame building Capabilities
- ▶

X-Gateways

- ▶ The X-gateway allows you to seamlessly inter-connect PLC control systems and their connected devices
- ▶ The data transmission between the two networks is completely transparent.
- ▶ Over 300 different network combination (Master, slave, Adapter, I/O device, Server)
- ▶ Connects different PLC system (Siemens, Rockwell, Schneider, Mitsubishi, Omron, Beckhoff)
- ▶ Max 512Bytes Of Input and 512 bytes of output data
- ▶ I/O data transfer with average through put between network of 10-15 ms
- ▶ Configuration via USB using the included Anybus Configuration Manager-No programming required
- ▶ IT functions such as dynamic WEB Server, supporting downloadable customer specific web pages.
- ▶ Fast, dynamic transfer of Fieldbus data to e.g. SCADA/HMI / Enterprise level systems based on Microsoft Windows, via the included Anybus OPC server
- ▶ Robust stand-alone housing for use in harsh industrial environments
- ▶ Remote monitoring and diagnostic feature for most Ethernet version Via an Integrated WEB Sever
- ▶ Anybus Master Configuration tool included free of charge with a Profibus, Device Net or Ethernet/IP Master/Scanner.
- ▶



Protocol Converter

IEC Gateway

- ▶ Enable easy remote control and management of electrical systems
- ▶ Support IEC 61850 client/server, GOOSE, proxy gateway, IEC 60870-5-104 client/server and VHPready
- ▶ Provide Modbus-TCP client/server and Modbus-RTU master/slave interfaces
- ▶ Enable SNMP, SNTP, and cloud connectivity
- ▶ Provide I/O, M-Bus, PROFIBUS, PROFINET and EtherNet/IP interfaces
- ▶ Are safe – firewall, OpenVPN & password protection
- ▶ Support IEC 60870-5-104 redundancy acc. edition 2 (Norwegian Convention)
- ▶  Approved.



BACnet Gateway

- ▶ Enables central control and supervision of Modbus devices within Building Automation and HVAC applications
- ▶ Handles conversion between Modbus (RTU & TCP) and BACnet (IP & MS/TP).
- ▶ BTL certification.
- ▶ Supports BACnet version 12.
- ▶ Manages Modbus TCP and Modbus RTU simultaneously.
- ▶ Connects up to 254 Modbus devices to BACnet (processing up to 3000 Modbus registers).
- ▶ A simple yet powerful config tool allows commissioning, debugging and troubleshooting.
- ▶ Import and export to Excel for further signal processing.
- ▶ Comes in a plastic housing that mounts on 35-mm DIN-rail.
- ▶ Configuration could be done through IP or USB port LED indicators provide communication status on both the Ethernet and serial ports.
- ▶  Approved.

IT/OT Gateways

- ▶ Enabling communication between the factory floor & IT systems.
- ▶ NET Bridge enables factory-floor data from PROFINET, ROFIBUS, Ethernet/IP or EtherCAT to be presented to .NET applications.
- ▶ As a .NET programmer, you can get data directly from a PLC system and use this data in applications for statistics, analysis or maintenance.
- ▶ System for connecting one or multiple PLCs to IT/software systems.
- ▶ Send and receive data from each side.
- ▶ PLC programmer is in full control – PLC access via fieldbus or Ethernet slave interface.
- ▶ IT style interface: customized names, receive events and post structured data via C#/.NET interface.
- ▶ Automated configuration – system generates fully customized C# API and PLC configuration (GSDML etc.), with names and data types according to parameter list agreed between software programmer and PLC programmer.
- ▶ Configuration is stored in C# program on customer side. In the event of a replaced gateway hardware, the system will automatically restore the configuration onto the new hardware.
- ▶ Dual Port switched Ethernet allows daisy chaining on all Ethernet ports.
- ▶ Robust design for optimized cabling, DIN-rail or wall mount options



Protocol Converter



Master Simulator

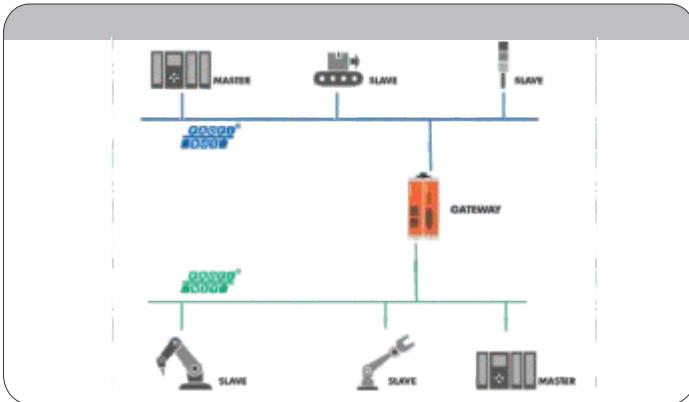
- ▶ The Master Simulator is an easy to use tool to test your Profibus, DeviceNet, CANopen, profinet slave/adapter
- ▶ The user friendly application makes it easy to configuration, initialize and communication with the slave/adapter devices.
- ▶ Easy-to-use test and diagnostics tool
- ▶ No programming required
- ▶ Auto-detects slaves/adapters (even when GSD/EDS file is not available)
- ▶ It's ideal for test wiring for input and output
- ▶ No need of external power supply
- ▶ Ideal for portable usage with laptop and notebook
- ▶ RS232 adapter, serial cable, CD and Software for Profibus DP/DPV1
- ▶ Serial USB adapter, CD and software for DeviceNet, CANopen
- ▶ Ethernet Cable & Software for Profinet.
- ▶ Certification CE, CULUS, ATEX/Haz.Loc, RoHS

Anybus X-Gateway selection matrix		Ethernet/IP slave	Ethernet MBTCP slave	PROFINET IO slave	POWERLINK slave	EtherCAT slave	CC-Link IE Field slave**	PROFIBUS Slave	DeviceNet Slave	CANopen Slave	Modbus RTU slave	CC Link	J1939***	LONWorks	ControlNet Slave	FIP Slave	Interbus Slave Cu	Interbus Slave Fo	Modbus Plus Slave	PROFINET IRT slave Fo	PROFINET IRT (2.3X) slave Cu	
PROFIBUS Master		AB7800 B	AB7629 B	AB7646 B	AB7521 B	AB7696 B	AB7953 B	AB7801 B	AB7802 B	AB7807 B	AB7808 B	AB7810 B	n.a. -	n.a. -	AB7803 C	AB7804 C	AB7805 C	AB7806 C	AB7809 C	n.a. - AB7500 B		
DeviceNet Master		AB7916 B	AB7607*** C	AB7630 B	AB7647 B	AB7522 B	AB7697 B	AB7955 B	AB7663 B	AB7811 B	AB7816 B	AB7817 B	AB7819 B	n.a. -	n.a. -	AB7812 C	AB7813 C	AB7814 C	AB7815 C	AB7818 C	n.a. - AB7501 B	
ASi Master		AB7820 B	AB7631 B	AB7648 B	n.a. -	AB7698 B	n.a. -	AB7821 B	AB7822 B	AB7827 B	AB7828 B	AB7830 B	B	n.a. -	n.a. -	AB7823 C	AB7824 C	AB7825 C	AB7826 C	AB7829 C	n.a. - AB7502 B	
Ethernet/IP Master		AB7668 B	AB7669 B	AB7670 B	AB7524 B	AB7699 B	AB7957 B	AB7671 B	AB7672 B	AB7677 B	AB7678 B	AB7680 B	n.a. -	n.a. -	AB7673 C	AB7674 C	AB7675 C	AB7676 C	AB7679 C	n.a. - AB7503 B		
CANopen Master		AB7306 *	AB7308 *	AB7307 *	n.a. -	AB7300 *	n.a. -	AB7301 *	AB7302 *	AB7304 *	AB7305 *	n.a. -	n.a. -	AB7303 *	*	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	AB7329 *	
Modbus MBTCP Master		AB9006 *	AB9008 *	AB9007 *	n.a. -	AB9000 *	n.a. -	AB9001 *	AB9002 *	AB9004 *	AB9005 *	AB9009 *	n.a. -	n.a. -	AB9003 *	*	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	
Ethernet/IP slave		AB7831 A	AB7632 A	AB7649 A	AB7525 A	AB7682 A	AB7956 A	AB7832 A	AB7833 A	AB7838 A	AB7839 A	AB7841 A	AB7865 A	A	AB7842 C	AB7834 C	AB7835 C	AB7836 C	AB7840 C	AB7980 C	AB7504 A	
Ethernet MBTCP slave		AB7632 A	AB7633 A	AB7650 A	AB7526 A	AB7901 A	AB7958 A	AB7634 A	AB7635 A	AB7640 A	AB7641 A	AB7643 A	AB7665 A	C	AB7644 C	AB7636 C	AB7637 C	AB7638 C	AB7642 C	AB7979 C	AB7505 A	
PROFINET IO slave		AB7649 A	AB7650 A	AB7651 A	n.a. -	AB7684 A	AB7954 A	AB7652 A	AB7653 A	AB7658 A	AB7659 A	AB7661 A	n.a. -	AB7662 C	AB7654 C	AB7655 C	AB7656 C	AB7657 C	AB7660 C	n.a. -	n.a. -	
POWERLINK slave		AB7525 A	AB7526 A	n.a. -	AB7544 A	AB7527 A	AB7528 A	AB7529 A	AB7530 A	AB7510 A	AB7532 A	AB7533 A	n.a. -	n.a. -	AB7535 C	C	n.a. -	n.a. -	AB7539 C	n.a. -	AB7540 A	
EtherCAT slave		AB7682 A	AB7901 A	AB7684 A	AB7527 A	AB7900 A	AB7961 A	AB7685 A	AB7686 A	AB7691 A	AB7692 A	AB7694 A	n.a. -	AB7695 C	AB7687 C	AB7688 C	AB7689 C	AB7690 C	AB7693 C	AB7970 C	AB7506 A	
CC-Link IE Field slave**		AB7956 A	AB7958 A	AB7954 A	AB7528 A	AB7961 A	n.a. -	AB7959 A	AB7960 A	AB7963 A	AB7964 A	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	AB7507 A	
PROFIBUS Slave		AB7832 A	AB7634 A	AB7652 A	AB7529 A	AB7685 A	AB7959 A	AB7843 A	AB7844 A	AB7849 A	AB7850 A	AB7852 A	AB7615 A	A	AB7853 C	AB7845 C	AB7846 C	AB7847 C	AB7848 C	AB7851 C	AB7944 C	AB7508 A
DeviceNet Slave		AB7833 A	AB7635 A	AB7653 A	AB7530 A	AB7686 A	AB7960 A	AB7844 A	AB7854 A	AB7859 A	AB7860 A	AB7862 A	n.a. -	AB7863 C	AB7855 C	AB7856 C	AB7857 C	AB7858 C	AB7861 C	n.a. -	AB7509 A	
CANopen Slave		AB7838 A	AB7640 A	AB7658 A	AB7510 A	AB7691 A	AB7963 A	AB7849 A	AB7859 A	AB7894 A	AB7895 A	AB7897 A	n.a. -	AB7898 C	AB7868 C	AB7876 C	AB7883 C	AB7889 C	AB7896 C	AB7943 C	AB7510 A	
Modbus RTU slave		AB7839 A	AB7641 A	AB7659 A	AB7532 A	AB7692 A	AB7964 A	AB7850 A	AB7860 A	AB7895 A	AB7899 A	AB7901 A	AB7621 A	A	AB7622 A	AB7623 A	AB7624 A	AB7625 A	AB7626 A	AB7511 A		
CC Link slave		AB7841 A	AB7643 A	AB7661 A	AB7533 A	AB7694 A	n.a. -	AB7852 A	AB7862 A	AB7897 A	AB7621 A	AB7622 A	n.a. -	- AB7627 C	AB7871 C	AB7879 C	AB7886 C	AB7892 C	AB7894 C	AB7624 C	n.a. - AB7512 A	
J1939***		AB7665 A	AB7666 A	n.a. -	n.a. -	n.a. -	n.a. -	AB7615 A	n.a. -	n.a. -	AB7612 A	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	
LONWorks		AB7842 C	AB7644 C	AB7662 C	n.a. -	AB7695 C	C	n.a. -	AB7853 C	AB7863 C	AB7898 C	AB7899 C	AB7009 - AB7627 C	n.a. -	AB7628 C	AB7872 C	AB7880 C	AB7887 C	AB7893 C	AB7625 C	n.a. -	AB7513 C
ControlNet Slave		AB7834 C	AB7636 C	AB7654 C	AB7535 C	AB7687 C	n.a. -	AB7845 C	AB7855 C	AB7868 C	AB7869 C	AB7871 C	n.a. -	AB7872 C	AB7864 C	AB7865 C	AB7866 C	AB7867 C	AB7870 C	n.a. -	AB7514 C	
FIP Slave		AB7835 C	AB7637 C	AB7655 C	n.a. -	AB7688 C	n.a. -	AB7846 C	AB7856 C	AB7876 C	AB7877 C	AB7879 C	n.a. -	AB7880 C	AB7865 C	AB7866 C	AB7873 C	AB7874 C	AB7875 C	AB7878 C	n.a. - AB7515 C	
Interbus Slave Cu		AB7836 C	AB7638 C	AB7656 C	n.a. -	AB7689 C	n.a. -	AB7847 C	AB7857 C	AB7883 C	AB7884 C	AB7886 C	n.a. -	AB7887 C	AB7866 C	AB7874 C	AB7881 C	AB7882 C	AB7885 C	AB7888 C	n.a. - AB7516 C	
Interbus Slave Fo		AB7837 C	AB7639 C	AB7657 C	n.a. -	AB7690 C	n.a. -	AB7848 C	AB7858 C	AB7889 C	AB7890 C	AB7892 C	n.a. -	AB7893 C	AB7867 C	AB7875 C	AB7882 C	AB7888 C	AB7891 C	n.a. -	AB7517 C	
Modbus plus		AB7840 C	AB7642 C	AB7660 C	AB7539 C	AB7893 C	n.a. -	AB7851 C	AB7861 C	AB7896 C	AB7620 C	AB7624 C	n.a. -	- AB7625 C	AB7870 C	AB7878 C	AB7885 C	AB7891 C	AB7623 C	n.a. -	AB7518 C	
PROFINET IRT slave Fo		AB7980 C	AB7979 C	n.a. -	n.a. -	AB7970 C	n.a. -	AB7944 C	n.a. -	AB7943 C	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	n.a. -	AB7972 C	
PROFINET IRT (2.3X) slave Cu		AB7504 A	AB7505 A	n.a. -	- AB7540 A	AB7506 A	AB7507 A	AB7508 A	AB7509 A	AB7510 A	AB7511 A	AB7512 A	n.a. -	AB7513 C	AB7514 C	AB7515 C	AB7516 C	AB7517 C	AB7518 C	n.a. -	AB7519 A	

The abbreviation "n.a." indicates that the product is currently not available in the standard Anybus product offer from HMS.



Protocol Converter



Modular Gateway Solution

- ▶ Modular Gateway enables continuous and reliable communication between different networks and systems.
- ▶ Diversely combinable with different protocols
- ▶ Simple plug-in connection for bus modules by means of plug-in jumper
- ▶ Customized solutions are also possible.
- ▶ The Modular Gateways are equipped with an integrated web server; program parts are updated via FTP server.
- ▶ Connection for power supply via screw-type terminal (optional: spring-loaded terminal)
- ▶ Max. power < 3 Watts
- ▶ Throughput max. 512 bytes
- ▶ Installation on a DIN rail

mGate Gateway



Gateway for Process Automation

- ▶ DIN rail mounted Profibus DP and PA gateways for measurement, detector and analyzer devices with HART® and Modbus® RTU interfaces.
- ▶ Suitable for system integrators wishing to incorporate legacy equipment into their designs and instrument manufacturers wishing to extend their market for existing products.
- ▶ Module width 23 mm.
- ▶ No special programming is required to set up the device.
- ▶ Includes a master in order to communicate with instruments.
- ▶ Any communication problem will be reported in the Diagnostics message.



- The world-wide provider of fieldbus connectivity solutions for process automation
- Modbus RTU to HART converter
- HART to Profibus PA DIN rail mounted gateway
- HART to Profibus DP DIN rail mounted gateway
- Modbus to Profibus PA DIN rail mounted gateway
- Modbus to Profibus DP DIN rail mounted gateway
- HART to FOUNDATION DIN rail mounted gateway
- Modbus RTU to Foundation DIN rail mounted gateway



Protocol Converter



Fieldbus Network Link of Profibus & Ethernet

The compact 24 Volt hat rail module The small sized, Ethernet based hat rail module allows the connection to all copper based PROFIBUS DP networks.

- ▶ Network Configurator (CNC) for the integration of FNL in your network
- ▶ PROFIBUS configuration tool CONFIGURATOR III with extensive download, analysis and control functions
- ▶ Programming interface: The TCP/IP socket interface provides transparent exchange of the DP Slaves' process and diagnostic data as well as all DP/DPV1 Master class 1/2 and DP Slave services
- ▶ No more hardware/driver installation with its typical related problems
- ▶ Access to the respective fieldbus from any arbitrary network PC
- ▶ Up-to-date technologies, like internet, e-mail etc. can be used in the process control level
- ▶ Add-on software: OPC Server, FDT 1.2 Communication DTM, LabVIEW™ Driver for FNL



RS 232 / RS 485 to Profibus DP Gateway

- ▶ Intelligent, low-cost
- ▶ User friendly.
- ▶ Serial configuration tool not required.
- ▶ All connections are by D-SUB connectors
- ▶ The PROFIBUS station address is set via coding switches.
- ▶ Hat Rail installation.
- ▶ Configured as Profibus Slave using available GSD File.
- ▶ Possible to integrate devices with MODBUS ASCII/RTU interface, typically they will only have an RS232, RS422 or RS485 interface.
- ▶ Supported PROFIBUS Protocol Versions: DP Slave
- ▶ Interfaces: Serial Profibus RS232/422/485/MODBUS ASCII/RTU RS485(isolated)
- ▶ Baud Rates: 9.6 To 12 Mbps
- ▶ Power Supply: 24 VDC



Fieldbus Network Link of Profibus & Profinet

The FNL Proxy PN/PB integrates PROFIBUS DP segments in PROFINET IO. The 24 Volt hat rail module contains one PROFIBUS DP interface, four PROFINET IO RT interfaces as well as one RS232 service interface for commissioning and diagnostics.

The proxy integrates both existing and new PROFIBUS DP devices without any modification or adaptation into a PROFINET IO network.

- ▶ Conforms to the specification of the PROFIBUS User Group according to the modular mapping procedure
- ▶ Full graphical PROFIBUS configuration tool
- ▶ SNMP diagnostics
- ▶ TFTP based firmware update



Protocol Converter

Gateway for Fieldbus Communication over Ethernet

- ▶ The Ethernet module isNet Lite is the head module of every gateway solution based in the product family isNet Line.
- ▶ In combination with different fieldbus communication modules the isNet Lite allows direct access from Ethernet to any fieldbus instrument.
- ▶ isNet Lite is suitable for tasks like remote diagnosis, remote maintenance or remote parameterisation as well as PROFINET gateway or Modbus TCP gateway remote monitoring and control



HART Ethernet Gateway

- ▶ Main module isNet Lite can be extended to work as an HART-Ethernet gateway.
- ▶ The HART Ethernet gateway is an up-to-date option to replace the widely used RS485 HART multiplexer solutions as it enables the direct connection to the existing data network of a plant.
- ▶ The isNet H@rt modules are equipped with either four (single width) or eight (double width) channels. Up to five HART modules can be connected to the main module, so a maximum of 40 HART channels can be operated in parallel.
- ▶ Access to the HART network is achieved by 8 plug-in screw-type terminals.
- ▶ With the isNet H@rt CommDTM, the modules can be integrated in your FDT framework. Due to support of the HART over IP protocol, the isNet H@rt can also be used with the HCF OPC server.



PROFIBUS DP Ethernet Gateway

- ▶ With the isNet DP module the main module isNet Lite can be extended to work as a PROFIBUS DP (DP/V0 and DP/V1) Ethernet Gateway.
- ▶ The isNet DP modules are available as one and two channel version.
- ▶ The main module can be enhanced with a maximum of 5 PROFIBUS modules, so up to ten PROFIBUS segments can be accessed from the main module.
- ▶ The PROFIBUS channels are galvanically isolated, at the 2 channel version each channel is isolated separately.
- ▶ The modules are operated via the isPro CommDTM from Thorsis Technologies. The DTM is compliant to the FDT 1.2.1 specification and integrates the gateway into every FDT-frame application.



FOUNDATION Fieldbus Ethernet Gateway

- ▶ To access FOUNDATION Fieldbus field devices, the main module isNet Lite can be expanded with a FF linkmaster module.
- ▶ This module is available as 1-channel, 2 channel or 4-channel version.
- ▶ Furthermore for each channel the modules include a voltage supply for the connected field devices, so that external supply voltage sources and power conditioners can be omitted. Of course, the connection to externally supplied FF-network segments is also possible.
- ▶ For the modules a free FDT 1.2-compatible communication DTM is available which allows access to the connected FF field devices in FDT frame applications like Pactware.

Module with Digital Inputs and Outputs

- ▶ The isNet DIO module is an extension module for the product family isNet Line with digital inputs and outputs.
- ▶ The module is available with 4 channels or with 8 channels.
- ▶ Every channel consists of a 4 pin screw type terminal with one input and one output per channel.
- ▶ It is IEC 61131 conform and can sense inputs, that represent the state of engines, valves and other equipment with binary signals.
- ▶ Also it can switch pumps, valves, heaters, fans or other industrial equipment with its outputs.
- ▶ In combination with other fieldbus specific modules the isNet DIO can extend every fieldbus with digital I/O capability.



Media Converter

PROFIBUS to FO

- ▶ Point to point, Bus, Star & Ring system Profibus
- ▶ POF, HCS (PCF), multimode, Single-Mode
- ▶ Optically redundant Profibus
- ▶ Max data rate upto 12 Mbps
- ▶ FiberView option for diagnostic.



RS232/422/485 - FO

- ▶ Point to point, Bus, Star & Ring system on RS232/RS485/Rs422
- ▶ POF, HCS (PCF), multimode, Single-Mode
- ▶ Protocol transparency
- ▶ Support Modbus and Modbus Plus
- ▶ FiberView option for diagnostic.



CAN/DeviceNet - FO

- ▶ Point to point, Bus or Star system, Ring
- ▶ CAN, DeviceNet
- ▶ Optically redundant CAN,DeviceNet
- ▶ POF, HCS (PCF), multimode, Single-Mode
- ▶ DIN rail mounting
- ▶ FiberView option for diagnostic.



Analog-Digital to FO

- ▶ Analogue signals 0-10V or 0-20mA
- ▶ Digital signals: 12-24VDC bi-directional or relay contacts
- ▶ Point to point system
- ▶ POF, HCS (PCF), multimode, Single-Mode
- ▶ DIN rail mounting

Media Converter

Serial to FO

- ▶ Supports multiple baud rate and multiple data format
- ▶ Support Full-Duplex transmission for RS-232/RS-422
- ▶ Supports RS-232/422/485,Support Modbus protocol
- ▶ Auto switching baud rate from 50~921.6 Kbps
- ▶ Power requirement from +12 ~48 VDC
- ▶ Provided DIP-Switch to setting function
- ▶ Support Single-Mode & Multimode
- ▶ Dual power supply design for power redundancy
- ▶ Secured management by HTTPS
- ▶ High reliability and rigid IP-30 metal housing
- ▶ DIN-Rail and wall mounting enabled
- ▶   Approved.



Ethernet to FO

- ▶ Each slot support 10/100/1000 Base T(X) auto-negotiation and auto-MDI/MDI-X
- ▶ Support Single-Mode & Multimode
- ▶ Dual power supply design for power redundancy
- ▶ SFP port support full duplex operation
- ▶ Secured management by HTTPS
- ▶ High reliability and rigid IP-30 metal housing
- ▶ DIN-Rail and wall mounting enabled
- ▶   Approved.

Serial to Serial

Rs232 to 422/485 with 3KV isolation serial converter

- ▶ Support multiple baud rate and multiple data format
- ▶ Support highest power output
- ▶ Auto Hardware Direction Control for RS-485
- ▶ Auto switching baud rate from 300 ~ 115200 bps
- ▶ Power requirements from +9 ~ 30 VDC
- ▶ ABS with captive mounting hardware design
- ▶ DIN-Rail and wall mounting enabled
- ▶   Approved.



Serial to Serial

RS422/485 to 422/485 with 3KV isolation serial converter

- ▶ Automatic internal RS-422/485 bus supervision
- ▶ No external flow control signals required for RS-485
- ▶ Serial type support auto detect and switch
- ▶ Supported baud rate up to 115.2Kbps
- ▶ Reach distance up to 4000 feet (1200m)
- ▶ Support multiple baud rate and multiple data format
- ▶ Reserved space for termination resistors (R8,R9)
- ▶   Approved.



Media Converter

Serial to Ethernet

- ▶ Operating Modes: Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP, Modbus Gateway
- ▶ Redundant multiple host devices: 5 host devices: Virtual COM, TCP Server, TCP Client mode; 4 IP ranges: UDP
- ▶ Support Modbus Gateway : Modbus TCP, Modbus RTU, Modbus ASCII
- ▶ RS-232/422/485 in DB9 connectivity available
- ▶ Ethernet switch mode enable Daisy Chain
- ▶ Support Gigabit Ethernet ports for high speed data transmission
- ▶ Security: SSL data encryption; secured management by HTTPS & SSH
- ▶ Supports PoE P.D. port features
- ▶ Event Warning by Syslog, SNMP trap, Relay & Beeper
- ▶ Configurable by Web-based & Windows utility (DS-Tool)
- ▶ Available in 4 to 18 ports
- ▶ Approved.



Serial to USB

- ▶ Fully compliant with USB 2.0 specifications
- ▶ Support Full-Duplex transmission for RS-232/RS-422
- ▶ RS-232/RS-422 support RTS/CTS handshake signals
- ▶ Transient suppression on RS-485 data lines
- ▶ Auto detect and switching for USB to RS-232/422/485
- ▶ Auto detect and switching baud rate up to 115.2Kbps
- ▶ Serial port with 3KV isolation
- ▶ USB bus powered with ultra low power consumption
- ▶ DIN-Rail and wall mounting enabled
- ▶ Available in 1 to 8 ports
- ▶ Approved.

Profibus to USB

- ▶ Our mobile USB adapter allows quick connection to a PROFIBUS network.
- ▶ Tasks such as parameterization or diagnosis can be made on-site with a laptop.
- ▶ The device contains a PROFIBUS master, which controls the protocols DP and DP / V1, but is usable just as good for less common protocols such as PROFIBUS FMS.
- ▶ Mobile set up and configuration of field devices
- ▶ Up to 16 PROFIBUS USB adapters connected to one PC for data access to connected PROFIBUS slaves
- ▶ with the supplied test software you can search for connected PROFIBUS slaves (Live list)
- ▶ Available software: isPro CommDTM (FDT), isPro MultiServer (OPC)
- ▶ Driver Software: XP, Vista, 7, 8, 10

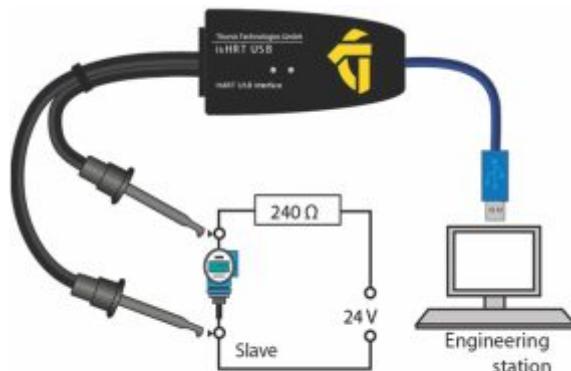




Media Converter

Hart to USB

- ▶ The commissioning of HART devices is easier than ever by using the HART-USB adapters.
- ▶ The affordable USB devices can easily be integrated into common configuration software via a virtual COM port.
- ▶ Mobile set up and configuration of field devices
- ▶ Use in hazardous areas we provide an intrinsic safe, Galvanic decoupling
- ▶ Communication DTM for use of the interface in FDT frame applications
- ▶ Driver software: Windows XP, Vista, 7, 8, 10
- ▶ Compatible with: HFC OPC Server (HART Communication Foundation), Simatic PDM (all versions), FDT frame applications
- ▶ Available software: isH@RT Device DTM, isHRT CommDTM (FDT 1.2.1)



Instructions for Installation with a 24 V power source.



Foundation Fieldbus to USB

- ▶ The USB adapter isFF USB provides a quick and easy way to access to FOUNDATION Fieldbus field devices.
- ▶ A special feature is the ability to supply a single connected field device directly from the USB device - a feature which helps especially in the exchange of field devices, if a replacement device must be parameterised before installation in the plant.
- ▶ The included communication DTM allows easy access to the parameters of the field devices.
- ▶ Driver software: Windows XP, Windows 7, 8, 10
- ▶ Available software: FDT 1.2 (isFF CommDTM)



CAN to USB

- ▶ Our CAN - components enable the mobile setup, configuration & monitoring of decentralized automation solutions in the fields of mechanical engineering, automotive, medical and building automation.
- ▶ The integrated optocoupler provide galvanic isolation of the CAN network
- ▶ isCAN USB interface into customer specific systems as hardware is also available as a compact PCB.
- ▶ Labview is supported by a Labview driver package
- ▶ Driver software: Windows XP, Vista, 7, 8, 10
- ▶ Available software: isCAN/CANopen Comm DTM, isCAN/CANopen Server (OPC)



DeviceNet to USB

- ▶ For the access on a DeviceNet network Thorsis Technologies offers an USB adapter, which can be adapted by an open API for customization of existing applications.
- ▶ The functionality as Explicit Messaging Server is thus feasible as well as the functionality as Explicit messaging client or the process data exchange via "Poll", "Bit Strobe" "Cyclic" and "Change of State" connections.
- ▶ Driver software: Windows XP, Vista, 7, 8, 10
- ▶ Available software: isCAN/CANopen Comm DTM, IsCAN/CANopen Server (OPC)



Ethernet



Unmanaged Ethernet Switches

- ▶ Compact IEEE 802.3 Layer 2 industrial switches
- ▶ Plug-and-play functionality.
- ▶ Support store and forward transmission
- ▶ Duplex and cable sensing
- ▶ Support auto-negotiation and auto MDI/MDI-X
- ▶ Hardened for the toughest applications
- ▶ Dual Redundant Power Inputs available
- ▶ SM, MM FO, Giga Ports available
- ▶ Din-Rail, Wall, Rack Mounting available
- ▶ Available in 5 to 26 ports
- ▶ Approved.

Managed Ethernet Switches

- ▶ Layer 2 and Layer 3 Ethernet switches
- ▶ Fastest Redundant Ethernet Ring-(recovery time < 10ms over 250 units of connection)
- ▶ Multiple Redundant Ethernet technology RSTP/STP
- ▶ Web-based, Telnet, Console (CLI), and Windows utility (Open-Vision) configuration
- ▶ Rugged, enterprise-class networking
- ▶ Advanced security features
- ▶ Dual Redundant Power Inputs available
- ▶ SM, MM FO, Giga Ports available
- ▶ Din-Rail, Wall, Rack Mounting available
- ▶ Available in 5 to 28 ports
- ▶ Approved.



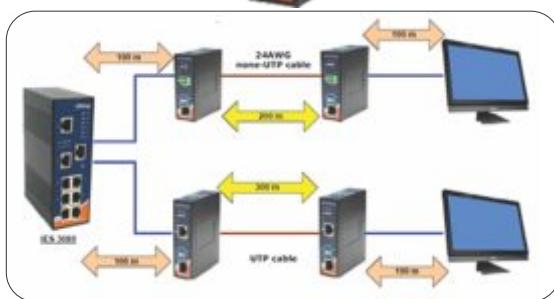
Power Over Ethernet (PoE)

- ▶ Layer 2 and Layer 3 Industrial power over Ethernet (POE) & POE++
- ▶ Switches, Injectors and Splitters
- ▶ Transmits power and data over Ethernet networks
- ▶ Recovery time <30ms over 250 units of connection
- ▶ MSTP(RSTP, STP compatible) for Ethernet redundancy
- ▶ P.S.E fully compliant with IEEE 802.3at standard, provides up to 30W per port
- ▶ Supports Max PoE output up-to 720 Watts
- ▶ Web-based, Telnet, Console (CLI) and Windows utility (Open-Vision) configuration
- ▶ Dual Redundant Power Inputs available
- ▶ Managed, Unmanaged, SM, MM FO, Giga Ports available
- ▶ Din-Rail, Wall, Rack Mounting available
- ▶ Available in 2 to 28 ports
- ▶ Approved.

Ethernet

Industrial Solutions - Power Sub Station (IEC-61850)

- ▶ Fully compliant with the requirement of IEC 61850-3 & IEEE 1613
- ▶ IEEE 802.3 Layer-2, Layer-3 industrial switches
- ▶ Support IEEE 802.3az Energy-Efficient Ethernet technology
- ▶ Ultimate Port Flexibility
- ▶ Fastest Redundant Ethernet Ring (recovery time < 10ms over 250 units of connection)
- ▶ Multiple Redundant Ethernet technology RSTP/STP/MSTP
- ▶ Web-based, Telnet, Console (CLI) and Windows utility (Open-Vision) configuration
- ▶ Rugged, enterprise-class networking
- ▶ Advanced security features
- ▶ Powerful Management & Monitoring
- ▶ Din-Rail, Wall, Rack Mounting available
- ▶ Available in Ethernet to fiber Media Converter and Supports full/half duplex operation
- ▶ Support PTP Client (Precision Time Protocol) clock synchronization
- ▶ SM, MM FO, Giga Ports available.
- ▶ Available in 2 to 28 ports
- ▶   Approved.

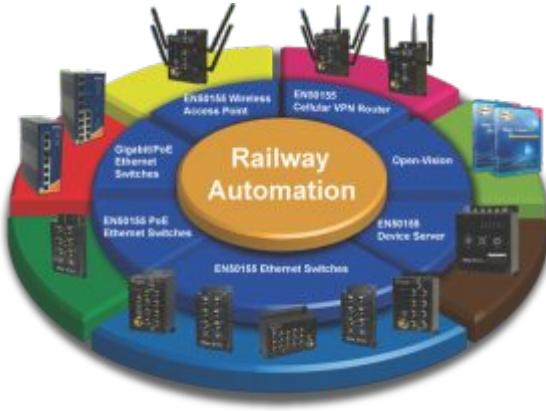


Ethernet Extender

- ▶ Extend Ethernet distance up to 300m (984 feet) over UTP cable or up to 200m (656 feet) over 24AWG none-UTP cable
- ▶ Support 2/4/8-wired auto detecting transmission
- ▶ Provided DIP-Switch to selecting Auto/Manual mode for Master/Slave setting
- ▶ Supports Auto mode to auto-negotiation for master/slave mode switching
- ▶ Ethernet port support full/half duplex operation
- ▶ Ethernet port support Auto MDI/MDI-X switching function
- ▶ Redundant 12~48VDC power inputs with Terminal Block
- ▶ DIN-Rail and wall mounting enabled
- ▶   Approved.

Ethernet

Industrial Solutions - Railway (En50155)

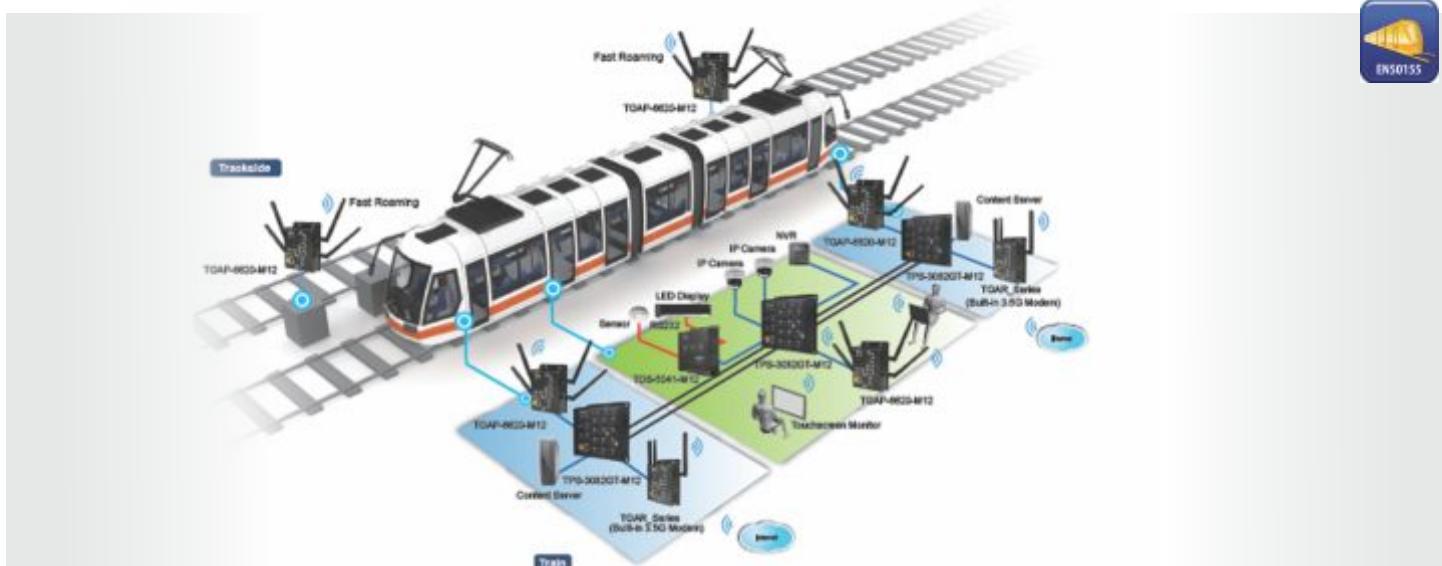


● Switches

- ▶ EN50155-compliant Ethernet switch for rolling stock application
- ▶ World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 10ms over 250 units of connection)
- ▶ Open-Ring support the other vendor's ring technology in open architecture
- ▶ STP/RSTP/MSTP supported
- ▶ Support PTP Client (Precision Time Protocol) clock synchronization
- ▶ Advance security features
- ▶ Available with PoE features
- ▶ Windows utility (Open-Vision) support centralized management and configurable by Web-based, Telnet, and Console(CLI)
- ▶ Event notification through Syslog, Email, SNMP trap, and Relay Output
- ▶ M12 connectors to guarantee reliable operation against environmental disturbances
- ▶ Wall mounting enabled

● Wireless

- ▶ EN50155-compliant wireless access point for rolling stock application
- ▶ High Speed Air Connectivity: WLAN interface support up to 300 Mbps link speed
- ▶ Highly Security Capability: WEP/WPA/WPA-PSK(TKIP, AES)/WPA2/WPA2-PSK(TKIP, AES)/802.1X Authentication supported
- ▶ Support X-Roaming < 60ms
- ▶ Support external SMA antenna installation
- ▶ Support AP/Client /Bridge /AP-Client Mode
- ▶ Secured Management by HTTPS
- ▶ Event Warning by Syslog, Email, SNMP Trap and Relay output
- ▶ M12 connectors to guarantee reliable operation against environmental disturbances
- ▶ Wall-mount enabled
- ▶ Approved.

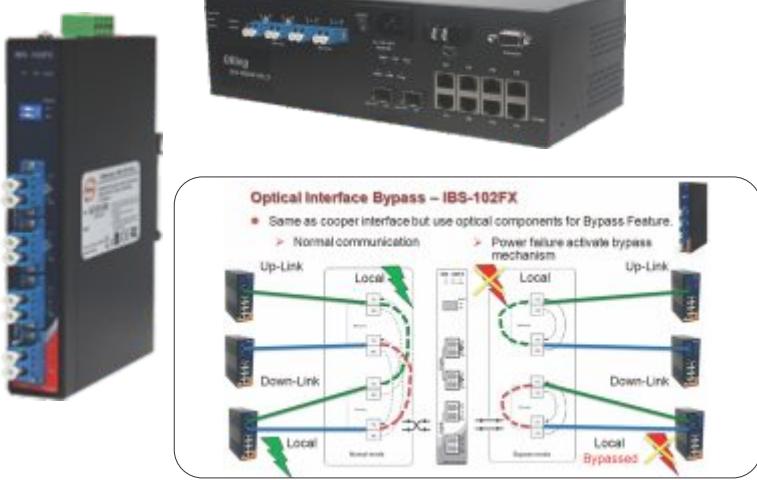
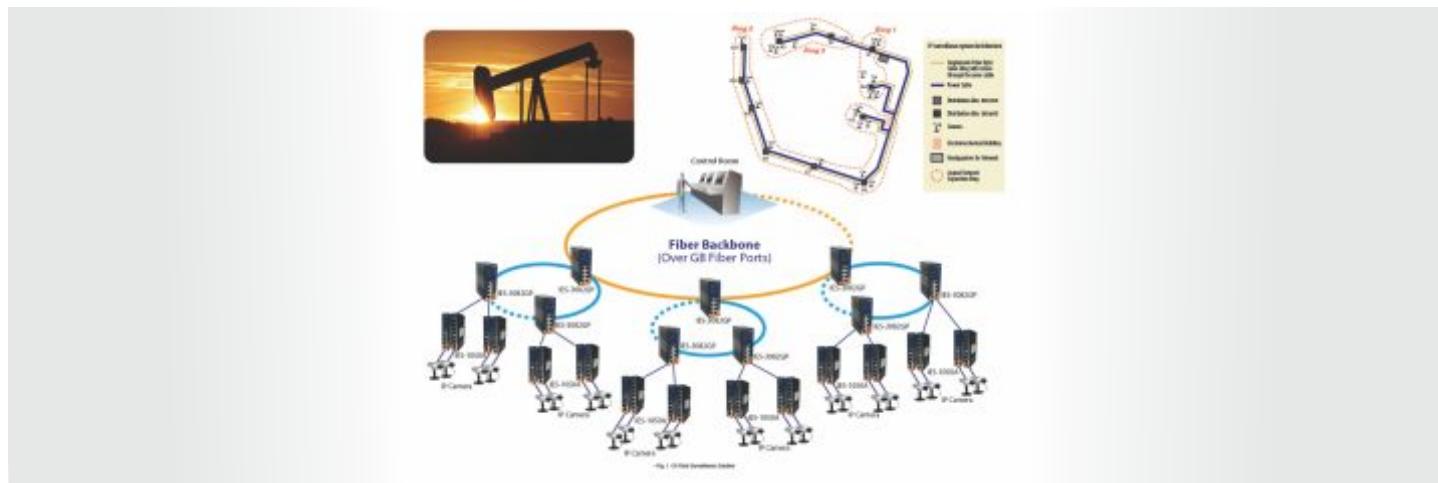




Ethernet

Industrial Solutions - Oil & Gas (C1D2/ATEX)

- ▶ C1D2 and ATEX compliant for harsh industrial environments application
- ▶ World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 10ms over 250 units of connection)
- ▶ Open-Ring support the other vendor's ring technology in open architecture
- ▶ O-Chain allow multiple redundant network rings
- ▶ Support standard IEC 62439-2 MRP (Media Redundancy Protocol) function
- ▶ STP/RSTP:2004/MSTP supported
- ▶ Support Auto Negotiation and Store-Forward transmission
- ▶ Advance security features
- ▶ Windows utility (Open-Vision) support centralized management and configurable by Web-based ,Telnet, Console (CLI)
- ▶ Support Gigabit combo ports
- ▶ Din-Rail, Wall Mounting available
- ▶ SM, MM FO, Giga Ports available
- ▶ Available in 8 to 18 ports
- ▶



Bypass Switch

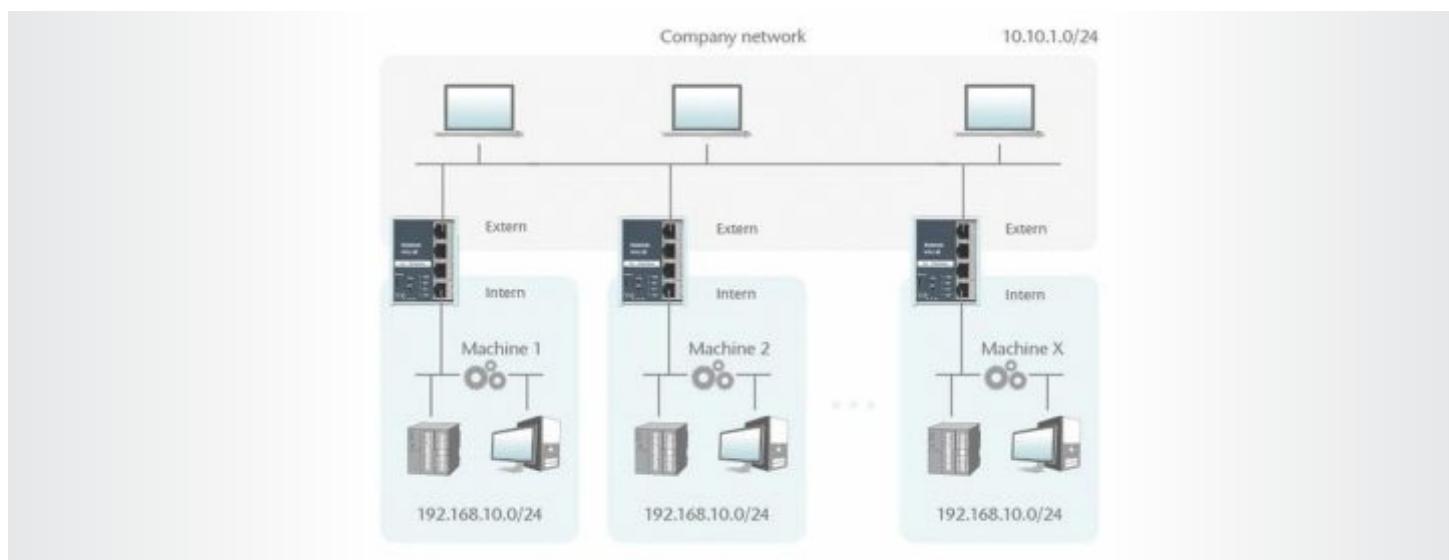
- ▶ Hardware Bypass redundancy technology naturally and effectively avoids single-point power failure in daisy chain topology or multi-point failures
- ▶ Support 100M/1G/10G optical bypass function of 2 port duplex or 4 port simplex fiber connection
- ▶ Different models supported for multi-mode or single-mode optical fiber
- ▶ Low insertions loss
- ▶ Throughput not affected and no extra delay
- ▶ Bypass switching time < 10ms
- ▶ Dual wide-range power inputs: 12~48VD
- ▶ Available Copper & FO
- ▶ DIN-Rail/Wall-mount/Desktop Mounting
- ▶



Ethernet

Industrial Ethernet Bridge & Firewall

- ▶ Integration of machine networks into the higher-level plant network
- ▶ Bridge function for identical IP address ranges
- ▶ NAT (Basic NAT, NAPT and port forwarding)
- ▶ Access restriction through packet filters: IPV4 addresses, protocol (TCP/UDP), ports, MAC addresses
- ▶ Reduction of the network load through the filtering of broadcasts and multi-casts
- ▶ Quick and easy configuration via a responsive web interface
- ▶ Static routes to other networks
- ▶ Reporting of events to a Syslog server
- ▶ Import and export of the configuration
- ▶ Industry-compatible design for mounting on a DIN rail



Network Management Software - Open Vision



- ▶ A powerful management utility is important for administrators to monitor and manage all devices in a local network.
- ▶ For the four basic functions – Centralized management / Visualized management / Complete monitor / Early system Alarms
- ▶ IP setting group wizard, firmware upgrade group wizard, and redundant ring (O-Ring) setting wizard
- ▶ Draw the whole network topology automatically and path management available
- ▶ Devices could be grouped and managed by different IP ranges in ORing Topology View
- ▶ Oring MAP technology could be showed network device locate by Google MAP
- ▶ IP scan to detect all of the IP-based devices in the local network
- ▶ No limitation on the amount of devices to be monitored
- ▶ The health status of connections is automatically checked

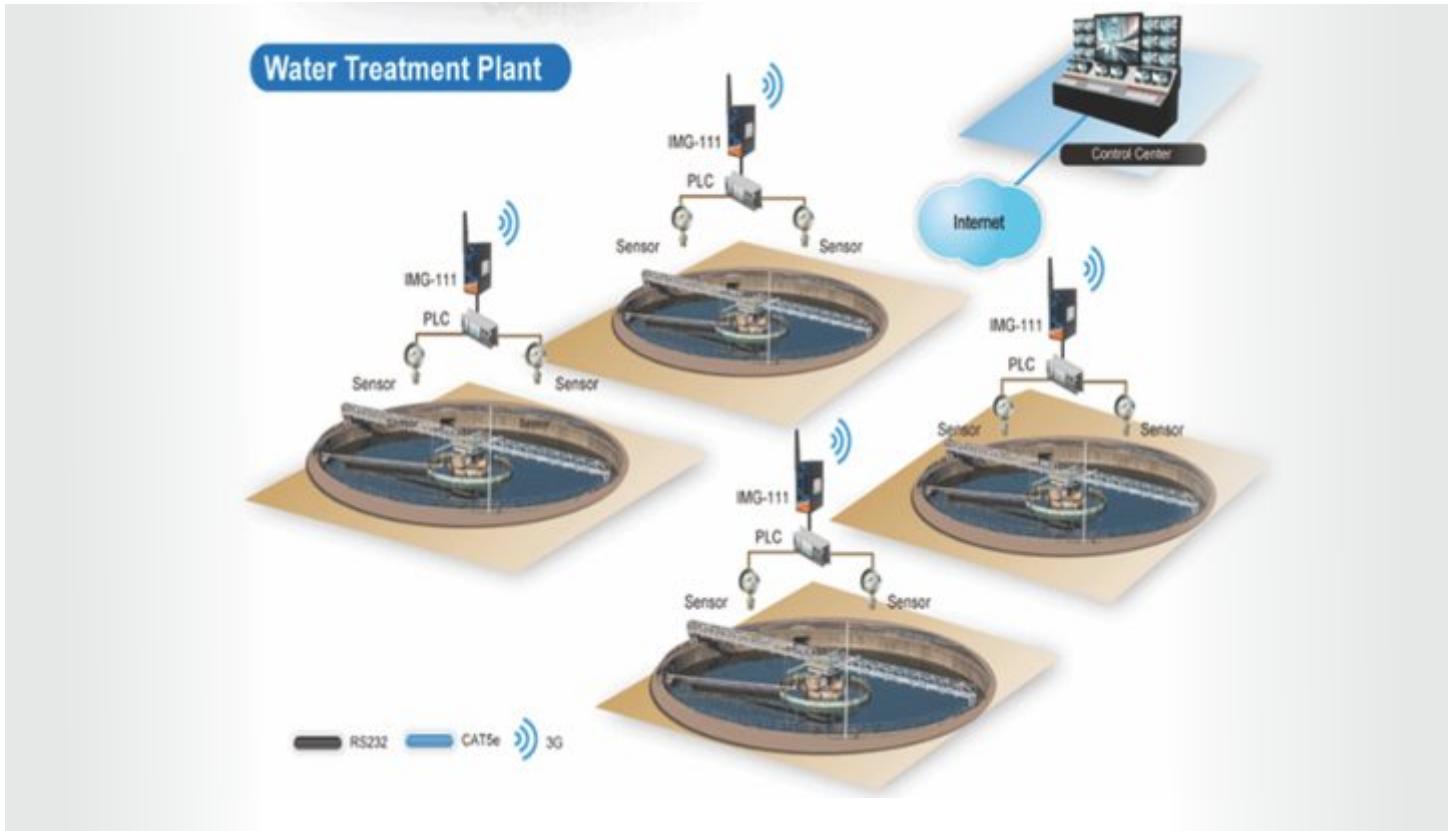


Wireless



Industrial Cellular Router

- ▶ High Speed Air Connectivity: WLAN interface support up to 300Mbps link speed
- ▶ Support 10/100/1000Base-T(X) port and 2 SIM card slot
- ▶ Support dual 4G/3.5G/3G dial up backup and load balance
- ▶ EN50155-compliant available
- ▶ Serial communication via RS232/RS422/RS485 interface
- ▶ Provide HNAT enhance LAN to WAN routing performance
- ▶ Highly Security Capability: WEP/WPA/WPA-PSK(TKIP/AES)/WPA2/WPA2-PSK(TKIP,AES)/802.1X Authentication supported.
- ▶ Secured Management by HTTPs
- ▶ Integrated firewall
- ▶ Support STP(802.1D) for wireless redundancy
- ▶ Various kind of WAN Connection Type supported: Dynamic/Static IP, PPPoE, Modem/Dial Up
- ▶ Support VPN for secured network connection (Open VPN , PPTP VPN, IPSEC VPN)
- ▶ Support NAT Setting (Virtual Server, Port Trigger, DMZ, UPnP)
- ▶ Modbus Protocol conversion between ModbusTCP and Modbus RTU
- ▶ Event warning by Syslog, Email, SNMPTrap, Relay output
- ▶ 1KV isolation for PoE P.D. port
- ▶ Rigid IP-30/IP67 housing design
- ▶ DIN-Rail and Wall-mount enabled
- ▶ Approved.

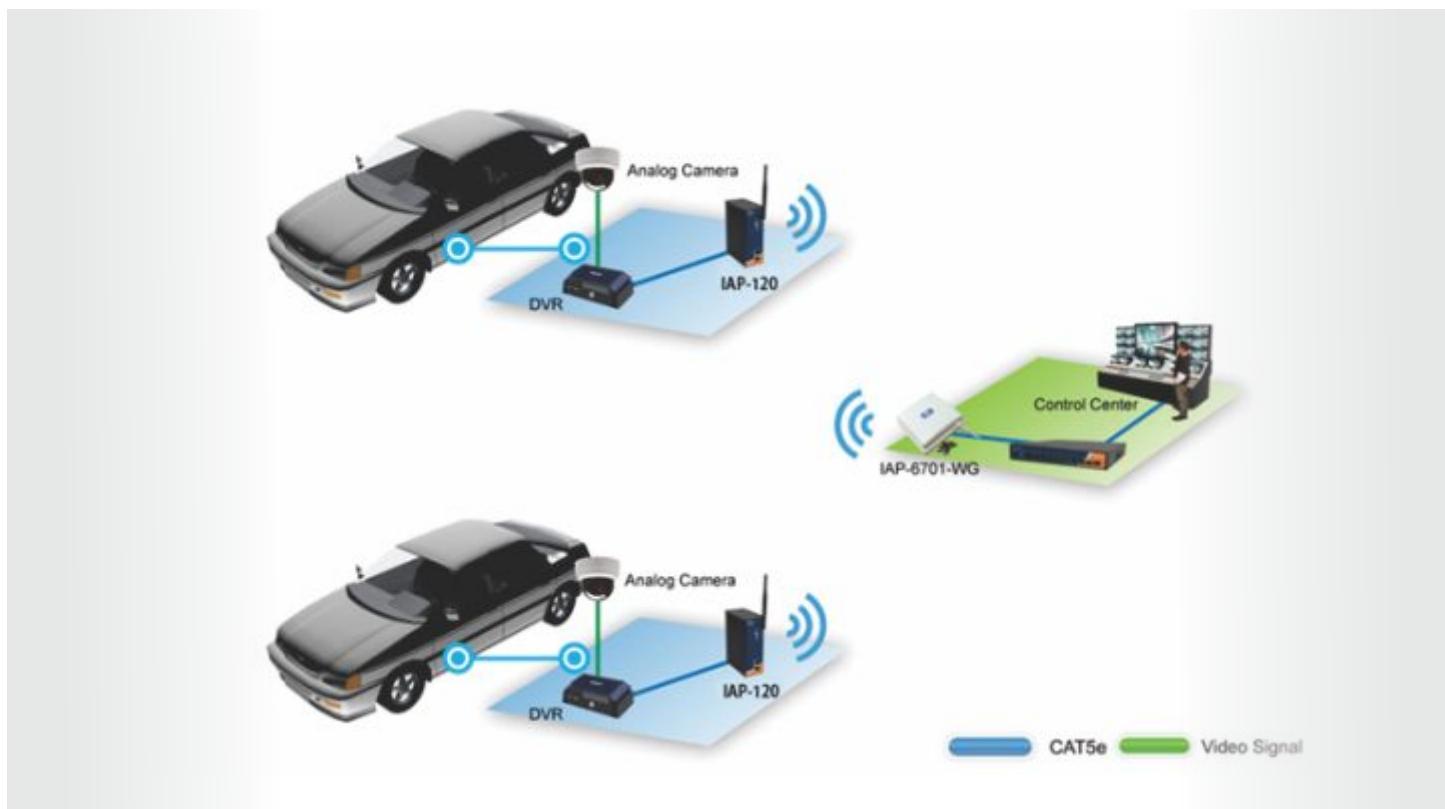


Wireless

Industrial Access Point



- ▶ High Speed Air Connectivity: Dual RF in IEEE 802.11a/b/g/n WLAN interface support up to 300Mbps link speed
- ▶ Supports Dual-Band WLAN 2.4/5 Ghz frequency
- ▶ Highly Security Capability: WEP/WPA/WPA-PSK(TKIP, AES)/WPA2/WPA2-PSK(TKIP, AES)/802.1X
- ▶ Serial communication via RS232/RS422/RS485 interface
- ▶ Support Dual AP/Dual Client /Bridge /AP-Client Mode
- ▶ Ethernet interface: 10/100/1000 BASE-T with automatic MDI/MDIX cross-over
- ▶ Use with point-to-point and multi-points wireless Industrial Ethernet installations through hazardous or hard-to-reach locations
- ▶ EN50155-compliant available
- ▶ Authentication supported
- ▶ Support Long Distance Air Connectivity
- ▶ Support X-Roaming < 60 ms
- ▶ Support wireless load balance
- ▶ Support external SMA / N-Type antenna Directional / Omni directional installation
- ▶ Support MAC/IP/Port Filter
- ▶ Provide Digital Input and Digital Output
- ▶ Wireless connecting status monitoring
- ▶ Secured Management by HTTPS
- ▶ 1KV isolation for PoE PD.
- ▶ Event Warning by Syslog, Email, SNMP Trap & Relay output
- ▶ Rugged IP30/IP67 rated industrial design
- ▶    Approved.



 CAT5e  Video Signal



Wireless

Wireless Bolt - Ethernet

- ▶ Configure or troubleshoot industrial machinery over a wireless network
- ▶ Increase flexibility and mobility.
- ▶ Eliminate expensive fixed HMI's by using a laptop, tablet or smart phone
- ▶ Connect to moving field equipment such as an AGVs (Automated Guided Vehicles)
- ▶ Connect to a Cloud Service of your choice or get live data & integrate it into a SCADA system
- ▶ Supports Ethernet and protocols such as: BACnet/IP, EtherNet/IP, Modbus-TCP, PROFINET, TCP/UDP
- ▶ Operates as an Access point or Client
- ▶ Connects up to 7 Slaves as an Access point
- ▶ Max throughput: 20 Mbps
- ▶ Max Range: 100 meters
- ▶ Uses Dual-band Wi-Fi 2.4/5 GHz to connect easier and identify interference-free channels
- ▶ All-in-one package: Connector, communication processor & integrated antenna in the same unit
- ▶ Includes a configurable Digital Input to control e.g. roaming behavior. Max. 3m signal cable
- ▶ Uses the ARM mbed 3.0 IoT Device Platform.
- ▶ Security features for a secure industrial operation
- ▶ Starterkit available
- ▶ Approved.

Replace an Ethernet cable with a wireless link



Wireless Bridge-Ethernet & Serial

Modo Bridge (Punto a Punto)



Modo Access Point (Multipunto)



Serial to Bluetooth

- RS232/422/485
- IP65 housing
- External antenna
- Up to 500-600kbps (net)
- Point to point cable replacement
- Multi-point or multi-drop up to 7 connections



- ▶ Use with point-to-point wireless Industrial Ethernet installations through hazardous or hard-to-reach locations
- ▶ Use as an Access Point for up to seven clients
- ▶ Eliminates the need for expensive or maintenance-heavy cabling
- ▶ Bridges TCP/IP Ethernet and protocols such as: BACnet/IP, EtherNet/IP, Modbus-TCP and PROFINET
- ▶ For Serial interface connects up to 7 slaves with a serial RS-232/422/485 interface via Bluetooth
- ▶ Includes Wireless Multidrop™ with simultaneous connections to both Bluetooth devices
- ▶ Unique method to handle interference disturbances
- ▶ Max range for Ethernet Module upto 400 meters and for Serial upto 300 meters.
- ▶ Full compatibility with Wireless Bolt - a wireless product for machine mounting
- ▶ Easy configuration via push button or web interface
- ▶ Advanced configuration with AT commands
- ▶ Conforms to wireless standards worldwide
- ▶ Compatible with PROFIsafe requirements.
- ▶ Conforms to wireless standards used in Europe, USA, Canada and Japan
- ▶ Rugged IP65 rated industrial design
- ▶ Security features for a secure industrial operation
- ▶ Starter kit available
- ▶ Approved.



Ethernet & Wireless Accessories

Ethernet Cables

- ▶ Cat.5E, Cat6, Cat7 Shielded RJ45, SFTP, SSTP
- ▶ Alternating bending test (with load) according to VDE0472 T603
- ▶ Resistant to mineral oil, ASTM oil and UV radiation, highly abrasion-resistant
- ▶ Suitable for outdoor areas, but not for laying directly in earth
- ▶ Wiring according to EIA/TIA 568B 1:1 or crossover
- ▶ Moulded sleeve with length imprint on sleeve
- ▶ Various colours are available grey, green, blue, yellow, red, black
- ▶ Lengths: 0.5m; 1m; 2m; 3m; 5m; 7.5m; 10m; 15m; 20m; 25m; 30m available.
- ▶ Other lengths are deliverable upon request
- ▶ Halogen-free, Fully plug compatible to IEC 60603-7



Ethernet Connectors

- ▶ Industrial connector RJ45 IDC quick-connect technology, no tools required Category 5e / 6A
- ▶ Industrial connector RJ45 Version V6; category 5e IDC quick-connect technology
- ▶ Module holder, RJ45, female / IDC For TS35 DIN rail Category 6
- ▶ RJ45 panel connector for front installation 22.5mm female/female 1:1, Category 5e/6
- ▶ Control cabinet bushing M12 - RJ45 female/female 1:1 Category 5e
- ▶ Cable gland, RJ45, female / IDC Version V6 Category 5e / 6, IDC, no tools required
- ▶ Cable gland RJ45 female / Version V6 Category 5e
- ▶ Supports Profinet, SERCOS 3, EtherCAT, Ethernet/IP, Powerlink, Modbus-TCP many-more.

Wireless Accessories

RF Adapter

- ▶ RF Right Angle Adapter, SMA Female to SMA Male connector
- ▶ RF Adapter, RP SMA Female to SMA Male connector
- ▶ RF Right Angle Adapter, RP-SMA Female to RP-SMA Male connector
- ▶ RF Adapter, SMA Male to N Female connector
- ▶ RF Adapter, RP-SMA Male to N Female connector
- ▶ RF Adapter, SMA Male to N type Male connector

RF Antenna Base

- ▶ RP-SMA Female magnetic antenna Base with cable length 1.5m and RP-SMA Male connector
- ▶ RP-SMA Female magnetic antenna Base with cable length 10m and RP-SMA Male connector
- ▶ N Female magnetic antenna base with cable length 10m and RP-SMA Male connector
- ▶ N Female magnetic antenna base with cable length 1.5m and RP-SMA Male connector

RF Cable

- ▶ Low loss RF Cable, Cable length 1.5/10m, N Female to RP-MA Male connector
- ▶ Low loss RF Cable, Cable length 1.5/10m, N Male to N Male connector
- ▶ Low loss RF Cable, Cable length 0.5/1.5/10m, N Male to N Male connector
- ▶ Low loss RF Cable, Cable length 0.5/1.5/10m, N Male to RP-SMA Male connector
- ▶ Low loss RF Cable, Cable length 1.5m, SMA Female to RP-SMA Male connector
- ▶ Low loss RF Cable, Cable length 10m, RP-SMA Female to RP-SMA Male connector
- ▶ Low loss RF Cable, Cable length 1.5m, SMA Male to RP-SMA Male connector

Antenna

- ▶ Rooftop/Outdoor High Performance Omni Antenna , 3G/4G, GPS applications, 5dBi max, N Female connector
- ▶ Outdoor High-gain Panel Antenna, 2.4GHz, 12dbi max., N Female connector
- ▶ Omni-directional High-gain Antenna, 2.4GHz, 7dBi max, N Male connector





Ethernet Diagnostics tool & PLC Analyzer Solutions

Ethernet Diagnostics - Atlas

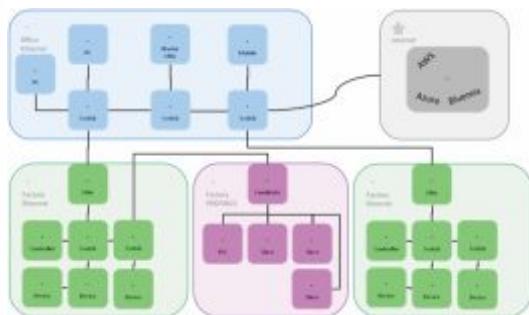


Meet Atlas

The vision on the future of Industrial Ethernet



Position in the network



"The solution for preventing unexpected and expensive downtime in your industrial network."

Users

- ▶ Maintenance & Support
- ▶ Plant Manager
- ▶ IT Professional
- ▶ Network Engineer
- ▶ Operator

Your benefits

- ▶ Network oversight
- ▶ Easy to install via DIN rail
- ▶ No software required
- ▶ Compact & robust construction
- ▶ Ease of use
- ▶ 24/7 available

Features Atlas

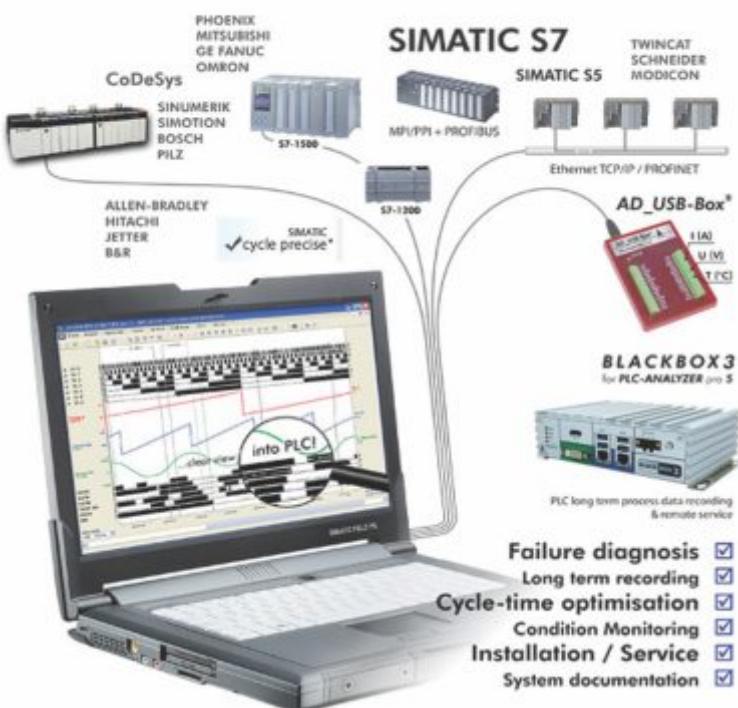
- ▶ Customizable dashboard
- ▶ Topology
- ▶ Universe & tree structured networks
- ▶ Q-Factor
- ▶ Device list
- ▶ Traffic light
- ▶ Alarm notifications
- ▶ FCC CE Approved.

PLC Analyzer Software

- ▶ Software tool for the manufacturing industry for logic analysis and data recording of PLCs.
- ▶ It helps troubleshoot problems in PLC logic or equipment through easy data acquisition and analysis in real time.
- ▶ With PLC-ANALYZER pro 5 you can see each PLC signals bit for bit.
- ▶ You can analyse flags, counters, timers whatever you want and display it to see the time dependent behaviour of all and compare it between.
- ▶ No additional hardware is necessary just use the existing programming connection.

PLC-ANALYZER pro 5

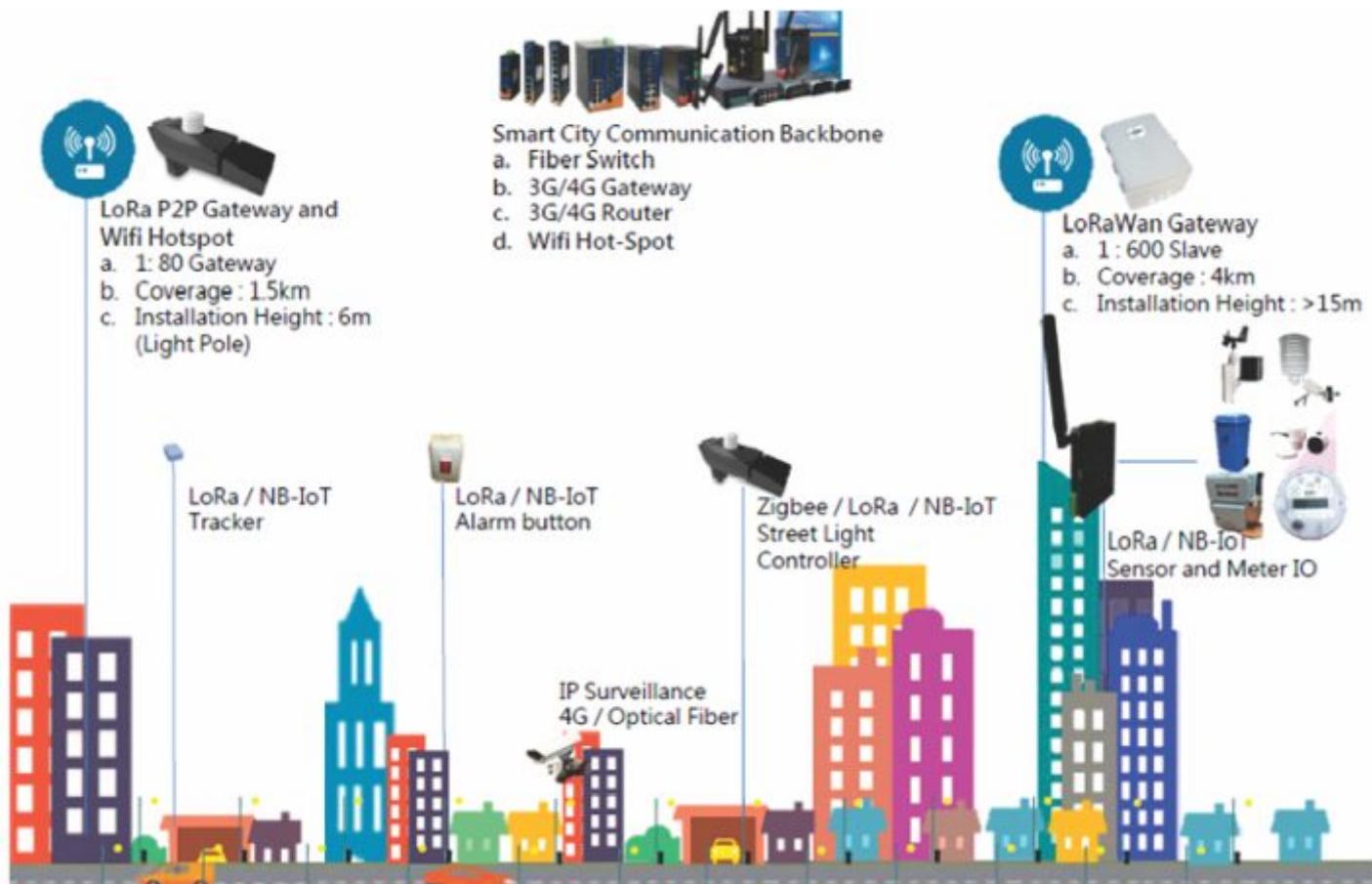
PLC-Logic analysis in no time



- Failure diagnosis
- Long term recording
- Cycle-time optimisation
- Condition Monitoring
- Installation / Service
- System documentation

Industrial IoT Solutions

Theme IoT Solution



Wireless Remote IO

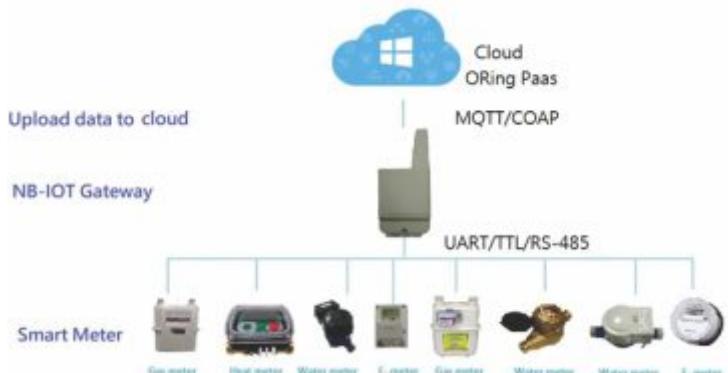
- Support 2 Serial Ports for RS232/RS422/4W-RS485/2W-RS485
- Support NB-IoT/CAT M1/CAT 1/ZigBee/BT (BLE3.0)/LoRa (by model)
- Support 4 Digital inputs (Dry/Wet) / 4 Digital outputs (Sink)
- Support Data Log (SD card)
- Support Modbus protocol
- Support MQTT/COAP protocol
- Support GPS
- Support configuration via USB virtual com port
- 40 to 75°C wide operating temperature



Industrial IoT Solutions

OR - Gate

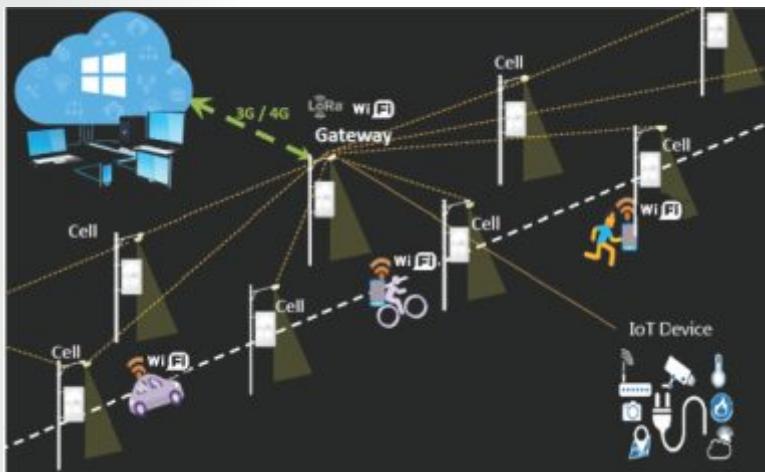
- ▶ Standard product for variety meter application
- ▶ Support UART /TTL/RS-485
- ▶ Support Lora-WAN
- ▶ Support NB-IOT/CATM1 Band 3/Band 5/ Band 8 / Band 20 / Band 28
- ▶ Support MQTT protocol
- ▶ Support Modbus Protocol
- ▶ Support Battery mode
- ▶ 40 to 75°C wide operating temperature



Street Light Controller

- ▶ NB-IoT/LoRa/ZigBee module and antenna design
- ▶ NEMA ANSI C136.41 Standard
- ▶ Wide Temp: -20~60°C
- ▶ MQTT and CoAP Protocol
- ▶ Power saving mode (Parameter Customize)
- ▶ Fault Detection
- ▶ Dimming
- ▶ Support Street Light Management System

IoT Applications



LoRa and WiFi Street Light Controller



Sensor Gateway Application

Industrial IoT Solutions

Ethernet Router

- ▶ Integrated firewall
- ▶ Digital inputs for establishing a connection and issuing alarms
- ▶ USB-over-IP
- ▶ Space-saving compact size
- ▶ Integrated 4-port LAN switch
- ▶ Secure OpenVPN remote maintenance access via myREX24 V2 portal
- ▶ Interface Variants: WiFi, LTE, 3G, WAN

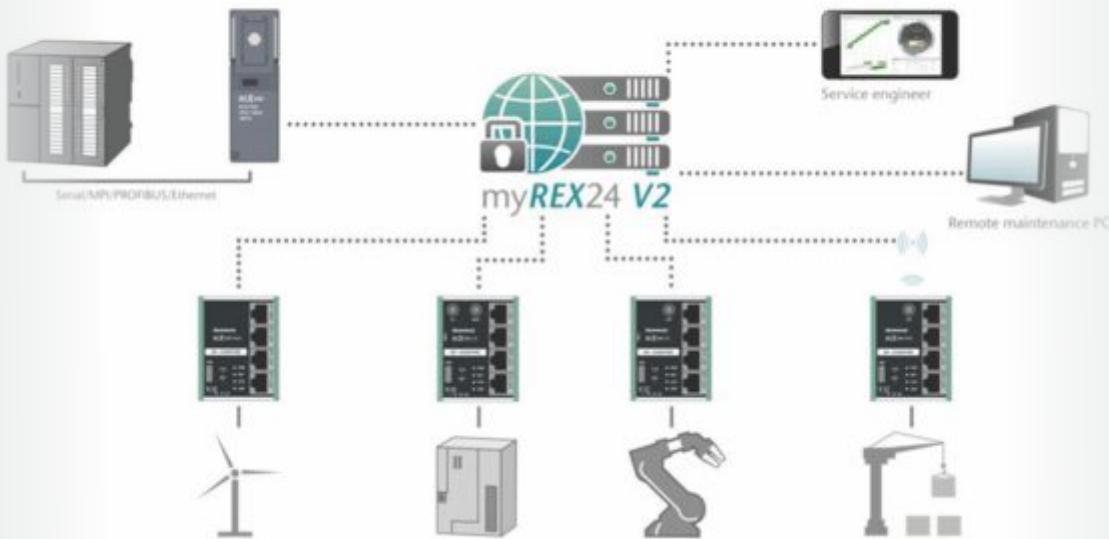


WAN+ Analog Modem, PROFIBUS/MPI, serial interface

- ▶ Integrated firewall
- ▶ Data server for data access to PLCs via RFC1006 (ISO on TCP), MPI, PROFIBUS, Modbus-TCP/RTU, Allen Bradley, etc.
- ▶ Directly connect S7-MPI/PROFIBUS devices
- ▶ S7-MPI/PROFIBUS driver included
- ▶ Remote maintenance of PROFIBUS (RS232/RS485) and Ethernet-compatible devices (PROFINET-compatible)
- ▶ Serial-over-IP
- ▶ Secure OpenVPN remote maintenance access via myREX24 V2 portal

Secure IoT remote maintenance access

Remote maintenance | Visualization | Alarming | Logging





Open Source Industrial PC

Revolution Pi - Open Source Industrial PC

- ▶ Open, modular and inexpensive industrial PC based on the established Raspberry Pi.
- ▶ Equipped with Raspberry Pi Compute Module, the base module can, depending on requirements, be expanded seamlessly using appropriate I/O modules and gateways.
- ▶ Installed in a DIN rail housing, the base module of the Revolution Pi already has USB, Ethernet and HDMI connections.
- ▶ Modbus capabilities : Revolution Pi comes with master and slave capability for the popular Modbus RTU and Modbus TCP network protocols.



RevPi Core 3

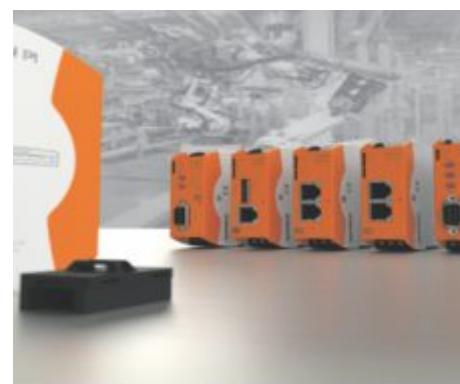
Processor	: BCM2837
Clock rate	: 1.2 Ghz
Number of cores	: 4
RAM	: 1 GByte
eMMC Flash	: 4 GByte

2 types & possibilities

RevPi Core

Processor	: BCM2835
Clock rate	: 700 MHz
Number of cores	: 1
RAM	: 500 Mbyte
eMMC Flash	: 4 GByte

- ▶ To transform Revolution Pi into an industrial control unit, various digital I/O modules, amongst other things, can be connected to the base module RevPi Core.
- ▶ The I/O modules come in three versions :
 1. connector with two rows of 14 pins each
 2. 16 digital inputs
 3. 16 digital outputs
- ▶ All versions have the same 28-pin I/O connector at the front.



Digital I/O modules

(RevPi DIO with 14 inputs and outputs) (RevPi Core 3 and RevPi AIO on DIN rail)

Analog I/O module

Fieldbus connection

(RevPi Gateways)

We currently offer gateways for the network protocols shown below :



Embedded Solutions

IC Solutions

- ▶ Thanks to its compact size, the KUNBUS-IC is perfectly suitable especially for small devices or for devices with little space for the communication interface.
- ▶ The KUNBUS-IC modules allow your device to be integrated into a corresponding network without major development effort.
- ▶ They contain all components required, such as bus drivers, Optocouplers, transducers, microcontrollers as well as the required memory and bus chips.

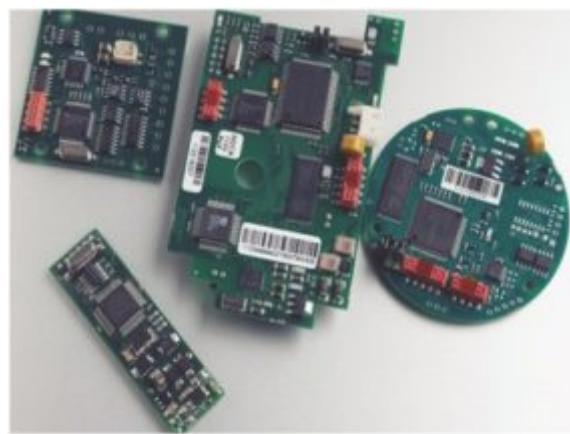


ASIC's Solutions

- ▶ Industrial connector RJ45 IDC quick-connect technology, no tools required Category 5e/6A
- ▶ Industrial connector RJ45 Version V6; category 5e IDC quick-connect technology
- ▶ Module holder, RJ45, female / IDC For TS35 DIN rail Category 6
- ▶ RJ45 panel connector for front installation 22.5 mm female/female 1:1 ,Category 5e/6
- ▶ Control cabinet bushing M12 - RJ45 female/female 1:1 Category 5e
- ▶ Cable gland, RJ45, female / IDC Version V6 Category 5e/6, IDC, no tools required
- ▶ Cable gland RJ45 female / female Version V6 Category 5e
- ▶ Supports Profinet, SERCOS 3, EtherCAT, Ethernet/IP, Powerlink, Modbus-TCP many-more.

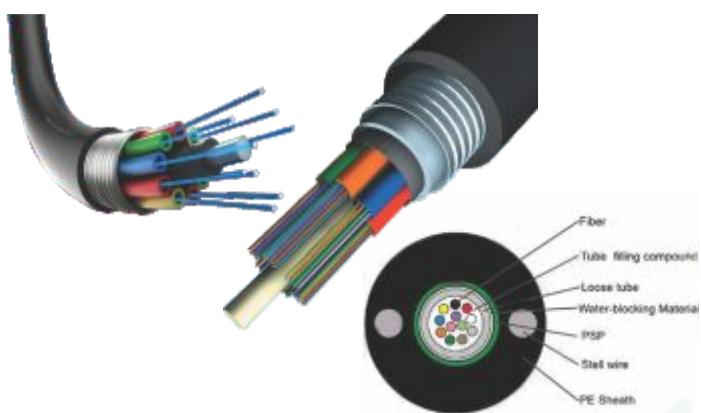
Process Automation Solutions

- ▶ T280, HART adapter with analog input.
- ▶ T210, Modbus RTU to HART converter.
- ▶ T810, The Wireless HART adapter with Modbus RTU interface.
- ▶ T410 Modbus RTU to Profibus PA built-in converter.
- ▶ T600 built-in FF converter for HART instruments.
- ▶ T610_C FF built-in module for customized applications.
- ▶ T610_B Modbus® to FF built-in converter for actuators and positioners.
- ▶ T610 Modbus to FOUNDATION fieldbus converter





Fibre Optic



OPTO Link Armored Cable

- ▶ Single Mode / Multimode.
- ▶ 4, 6, 8, 12, and 24 core Cable.
- ▶ Industrial grade rugged construction.
- ▶ High Crush Resistance.
- ▶ Suitable for indoor / outdoor & direct burial installation.
- ▶ Available in OM1, OM2, OM3, OS1, OS2, 9/125, 50/125, 62.5/125.
- ▶ LSZH fiber optic cables
- ▶ Customization on request

ADSS Outdoor FO Cable

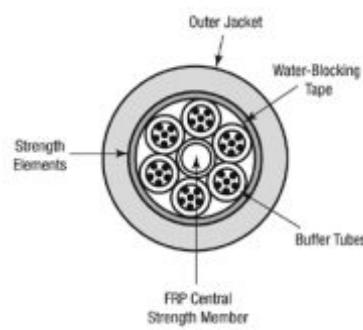
Applications

- ▶ All Dielectric Self Supporting cable (ADSS) for Outdoor use
- ▶ Particularly suitable for installation between poles with a span of 100, 150, 420 meter.
- ▶ Initial sag at 20 °C: 1% of span



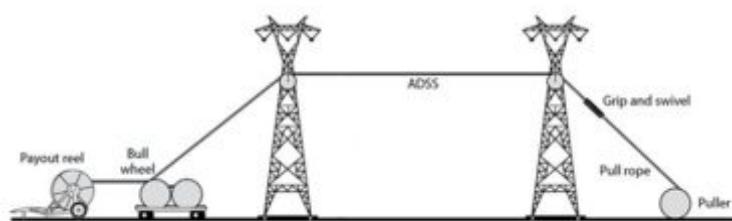
Features & Benefits

- ▶ Available in sizes from 6 to 144 fibers
- ▶ Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibres
- ▶ ($\varnothing 250 \pm 15$ m)
- ▶ Full dielectric construction, no grounding required
- ▶ Aramid yarns for tensile strength
- ▶ Installation-friendly because of the cable core kept free of grease (dry interstices)
- ▶ Length marking in meters for easy
- ▶ Inner Jacket Material – PE-Polyethylene
- ▶ Outer Jacket Material - PE – Polyethylene (Anti-Tracking)
- ▶ Available in OM1, OM2, OM3, OM4, 9/125, 50/125, 62.5/125, 125/250um.



Specifications

- ▶ Temperature Range (F1):
 - Transport/Storage -30°C to +70°C
 - Installation -5°C to +50°C
 - Operation -30°C to +70°C
- ▶ Water tightness (F5): Pass
- ▶ RoHS, IEC-794-1, IEC-60794-1, EIA/TIA-455 Approved





Fibre Optic

SFP Modules

- ▶ Provide speed 100Mbps, 1Gbps and 10Gbps
- ▶ Available for single mode/multimode
- ▶ High operating temperature range
- ▶ Distance coverage from 2km to 120km
- ▶ Wavelength: 1310nm, 1510nm, 1550nm, 1590nm
- ▶ Total industrial grade solution



LIU Box

- ▶ Fully Assembled LIU Box with Splice Trays, Pigtailed and Adaptors.
- ▶ Available in 4, 6, 8, 12, 16, 20, 24, 36, 48 FO Ports
- ▶ Choice of SC/ST Adaptors & Pigtailed.
- ▶ Housing available in MS, SS and Aluminum with powder coating
- ▶ Din-rail, Wall mount and 19" Rack Mounting options
- ▶ Easy installation
- ▶ Customization on request

Patch Cords

- ▶ ST-ST – DUPLEX / SIMPLEX.
- ▶ SC-SC – DUPLEX / SIMPLEX
- ▶ ST-SC – DUPLEX / SIMPLEX.
- ▶ MTRJ-SC – DUPLEX / SIMPLEX
- ▶ MTRJ – ST – DUPLEX / SIMPLEX
- ▶ MTRJ – MTRJ – DUPLEX / SIMPLEX
- ▶ LC – SC – DUPLEX / SIMPLEX
- ▶ LC – ST – DUPLEX / SIMPLEX
- ▶ LC – LC – DUPLEX / SIMPLEX
- ▶ Available in MM, SM, OM1, OM2, OM3, OS1, OS2 of 1, 2, 3, 5, 10 meters.
- ▶ Customization on request

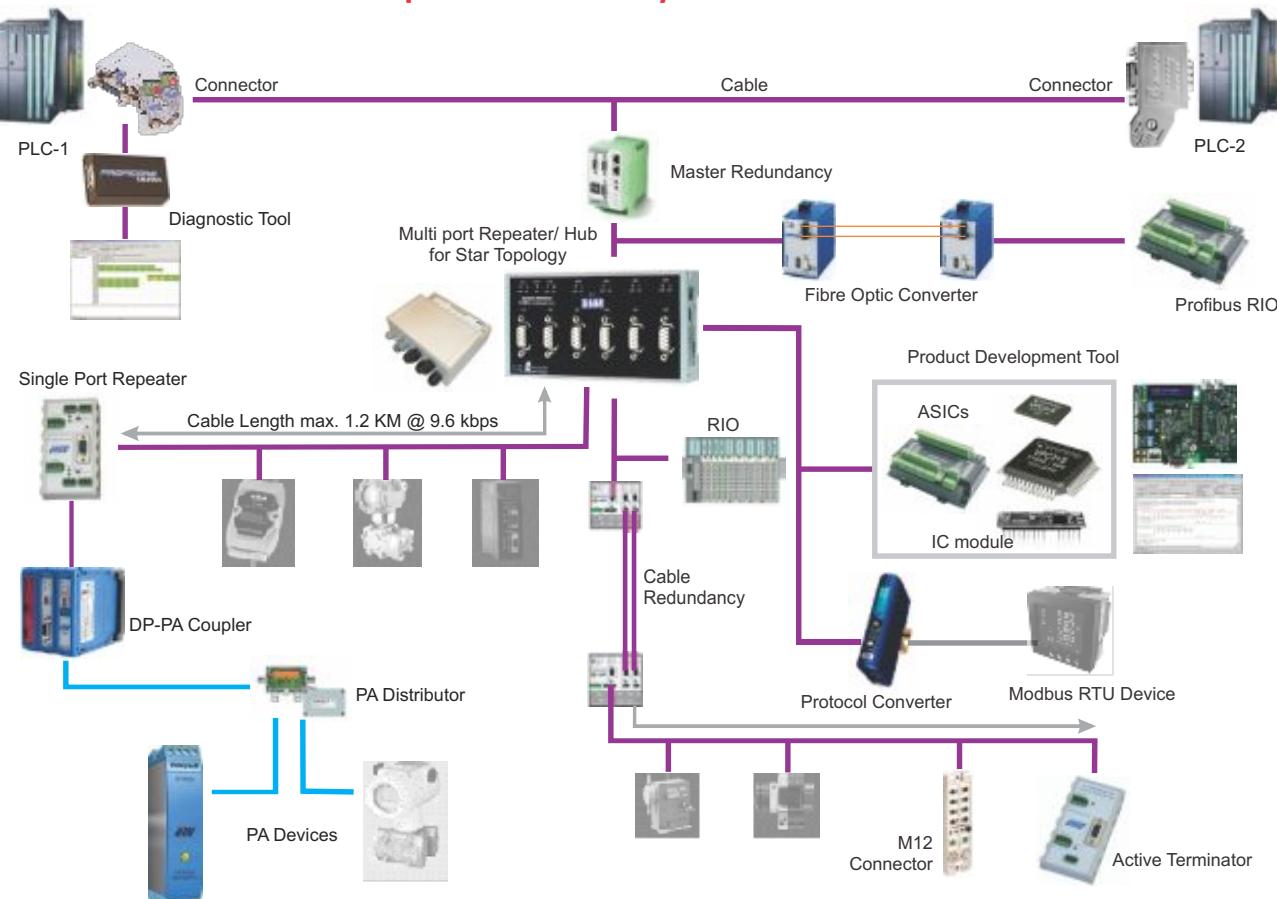


Pigtails/Adapter/Coupler

- ▶ Fiber Optic adaptors and Coupler available in MM, SM, OM1, OM2, OM3, SC-SC, SC ST, Metal, Plastic, Duplex, Simplex
- ▶ Excellent changeability and directivity
- ▶ 100% optic test (insertion loss)
- ▶ Accurate external size
- ▶ Fiber Optic pigtails available in M, SM, OM1, OM2, OM3, OS1, OS2, SC, ST, LC Duplex, Simplex
- ▶ Polish type available in PC, UPC, APC Finish, Hybrid
- ▶ Cable Diameter 0.9 mm with 1m, 2m, 3m lengths.
- ▶ Standard or custom configurations
- ▶ Splice tray, Splice Holder and cable glands

PROFIBUS

One Stop Solution for all your PROFIBUS needs!



Partnering with PROFIBUS is partnership with Leader!

Profibus International Competence Centre

India's 1st & Only Profibus International Competency Centre (PICC) is set up by UL Group. The engineers from all over the country look to PICC for technology seminars, training courses, Profibus development support, network validation reports and also the consultancy for the new network designs and installed networks.



Indian Profibus & Profinet Association

We are also authorized members for Profibus International Organization in this region of Asia and have played prominent role in forming Indian Profibus, Profinet Association (IPA). UL Group MD Mr Lalit Sahani & Mr Dileep Miskin are office bearers of IPA. Today IPA has more than 100 companies as active members and membership is ever-growing. IPA is a platform where all the members get connected with Profibus International which is non-profit multinational company with presence in 20 countries. Other benefits members get are presentation & visibility in exhibitions, road shows and seminars which are arranged throughout the year.





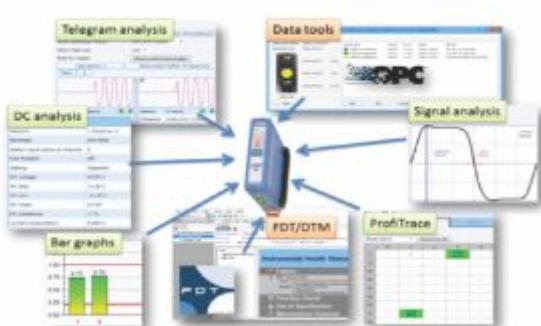
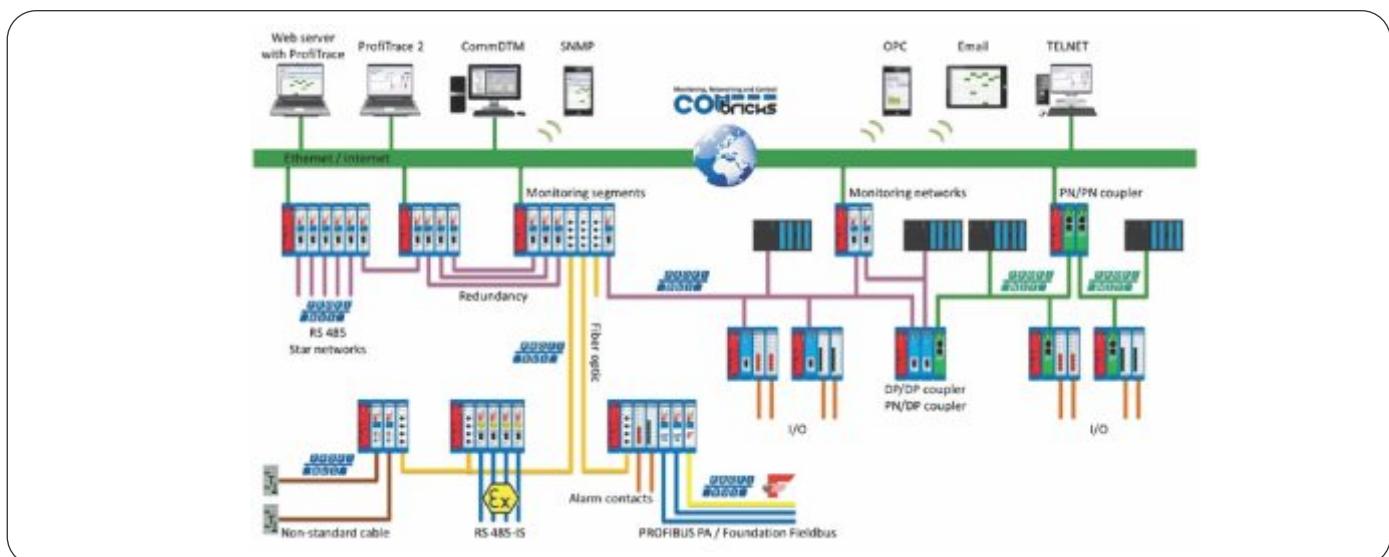
PROFIBUS



Online Monitoring & Networking

- ▶ ComBricks™ - The first PROFIBUS and PROFINET-based automation system that unites network components, permanent monitoring with ProfiTrace and remote I/O.
- ▶ Combricks Monitoring & Networking in Profibus DP/PA, PROFINET, FF Protocol.
- ▶ No need of any Software .
- ▶ ProfiTrace OE - Remote monitoring in a web browser
- ▶ The only product with an integrated oscilloscope for permanent PROFIBUS monitoring over Ethernet.

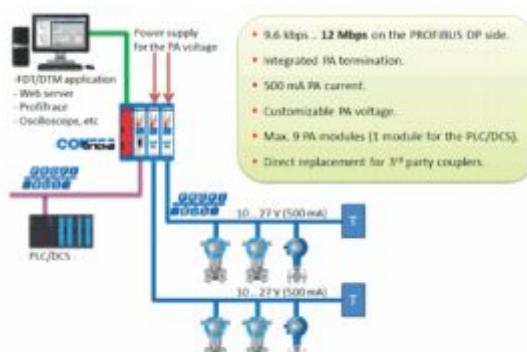
ComBricks Overview



Intelligent DP PA Coupler/ Link

- ▶ Seamless high speed integration to PROFIBUS PA Devices
- ▶ Adjusted bus parameters are not required and therefore suitable for all DCS and PLC systems, even running on 12 Mbps.
- ▶ Allows you to remotely monitor your PROFIBUS installations from anywhere in the world and will alert you if any faults arise or are likely to arise.
- ▶ Jitter, noise, DC current, DC voltage, bar graph and oscilloscope, it is all there and easy to access.

- ▶ The free CommDTM allows access for asset management tools over Ethernet.
- ▶ The integrated PA termination
- ▶ It does not require configuration and operates the same way as regular COMbricks repeaters.
- ▶ Can directly replace 3rd party Non-Ex PA couplers/links and can be used as a monitor behind existing 3rd party Non-Ex PA couplers.
- ▶ The only product with an integrated oscilloscope for permanent PROFIBUS monitoring over Ethernet.





PROFIBUS



Diagnostic Products

- ▶ Diagnostic Product are an essential tools for maintenance and troubleshooting as it boosts the capabilities of service, maintenance and engineering technicians.
- ▶ Application Areas:
 - Troubleshooting and maintains of Profibus network,
 - Commissioning of Profibus network,
 - Profibus product testing and verification,
 - Passive cable testing,
 - I/O testing of Profibus devices
 - Education

PC / Laptop Based Mobile Analyzer

- ▶ This outstanding and portable currently the most powerful mobile analyzer for PROFIBUS networks.
- ▶ Easy to use and unites all required elements in one to detect several PROFIBUS faults.
- ▶ USB Powered Device & Galvanic isolated Profibus interface
- ▶ **Live List:** Colors make it easy
- ▶ **Message Recording:** The absolute truth
- ▶ **Scope wave:** The easiest oscilloscope ever
- ▶ **Report:** We have proof
- ▶ **Bar Graph:** The bar graph - is a useful Utility to get impression of overall signal quality of the network.
- ▶ **DP Master:** Class1&2master,Without PLC/DCS Communicate Network
- ▶ **Profibus PA Probe Ultra:** PA Diagnostic



Handheld Diagnostic Tool

- ▶ Online functionality NetTEST II also detects sporadic errors in running systems
- ▶ With the DP Master functionality NetTEST II becomes an outstanding tool for the mobile commissioning of DP Slaves
- ▶ PROFIBUS network can be lined up without using a PLC
- ▶ Bar graph, Status Analysis, Different kind of line test
- ▶ Comprehensive Error Report, Generation Of Live List
- ▶ Signal level Measurement mobile commissioning. Event triggering, Baud rate Scan, Level display
- ▶ Cycle time of the DP Network



PROFIBUS



Profibus Tester - Handheld / PC Based

- ▶ Powerful diagnostic and troubleshooting tool
- ▶ Testing of cables, measuring the signals and analyzing the communication of PROFIBUS networks.
- ▶ Battery powered, integrated graphical display.
- ▶ Provides direct display of measurement results in stand-alone mode.
- ▶ Supports export of test results for advanced analysis.
- ▶ The cable test provides a detailed failure description and an estimate distance between failure and test location.
- ▶ Allows full testing of live PROFIBUS segments with minimum influence on their operation.
- ▶ The integrated master simulator allows bus testing.
- ▶ Single "suspicious" bus devices can be checked.



Profibus DP / PA Diagnosis via Ethernet

- ▶ DPMon & PAMon module gateway built with the isNet Lite can be extended to operate as a PROFIBUS DP & PA diagnosis and protocol monitor
- ▶ The module operates entirely passive & helps to detect and investigate sporadic problems in the data transmission on a PROFIBUS line, no telegrams will be sent to the PROFIBUS lines.
- ▶ Error counters or average time intervals, and for investigation of the physical signal quality the integrated oscilloscope is quite useful.
- ▶ The PA Monitor module has two independently working channels
- ▶ Physical signal quality the integrated oscilloscopes for every PA channel are quite useful
- ▶ No PC is connected to the NetLite as captured telegrams are stored on a SD card.



PROFIBUS



PRS – PROFIBUS-DP Master redundancy concept:
Switch and doubled DP Master.

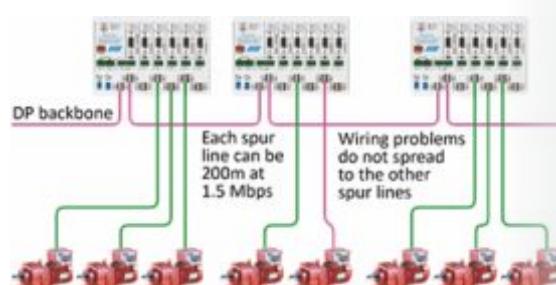
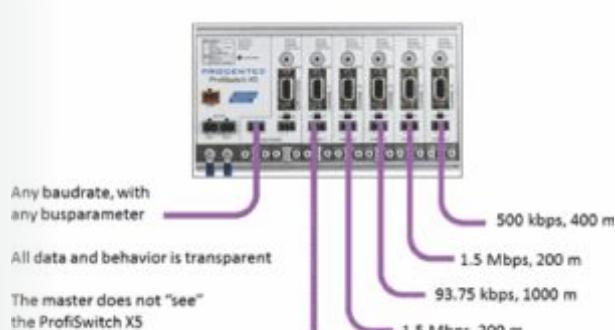
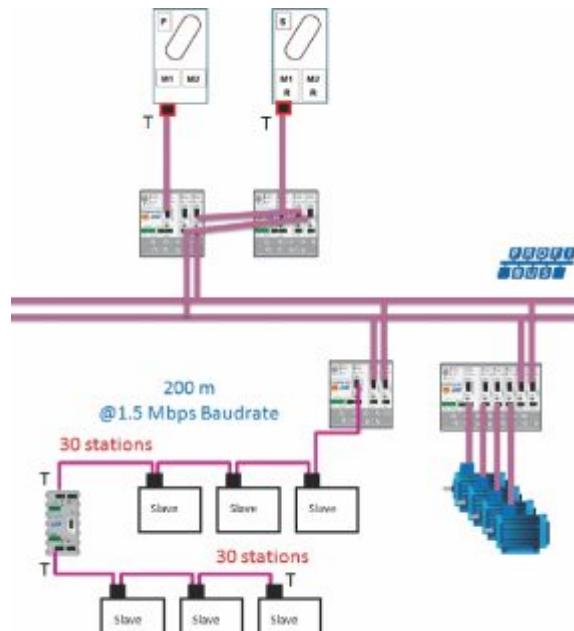


Cable Redundancy using Multi-Port Repeater

- ▶ ProfiHub B2+R, B5+R, B5+RD, X5 Is an Advanced Flexible, Robust network Component in Profibus as DP Repeater with Redundant Profibus Channels
- ▶ If bus redundancy is enabled, 2 segments will form a redundant pair
- ▶ Used in structure of Star/Tree Segment.
- ▶ B5+RD it is equipped with an additional integrated micro ProfiTrace diagnostic unit. The ProfiHub offers a PROFIBUS DP slave device to transfer bus statistics and device event information to the PLC/DCS system.
- ▶ X5 on each segment has customizable baudrate selection switch.
- ▶ Status LED's, Alarm Contacts
- ▶ Diagnostic port for Monitoring on Each Channel
- ▶ Integrated channel termination
- ▶ Suitable for PROFIsafe and MPI apart from Profibus DP
- ▶ Configurable grounding system
- ▶ Redundant power supply
- ▶ Hot slave insertion/removal during operation
- ▶ Galvanically Isolated & Short circuit protection on each channel

Master Redundancy Switch

- ▶ PRS – Intelligent PROFIBUS DP Master Redundancy Switch
- ▶ Top-hat rail based switch for the implementation of redundant PROFIBUS DP Master systems.
- ▶ Allows the connection of two identical DP Masters to the DP Slaves.
- ▶ Avoids galvanic contact between the DP Masters
- ▶ Masters be configured with identical PROFIBUS addresses, making Multi Master mode unnecessary and excludes double address conflict.
- ▶ In case of failure of the operational DP Master PRS physically switches over to the stand-by DP Master which seamlessly takes over the DP Slaves.



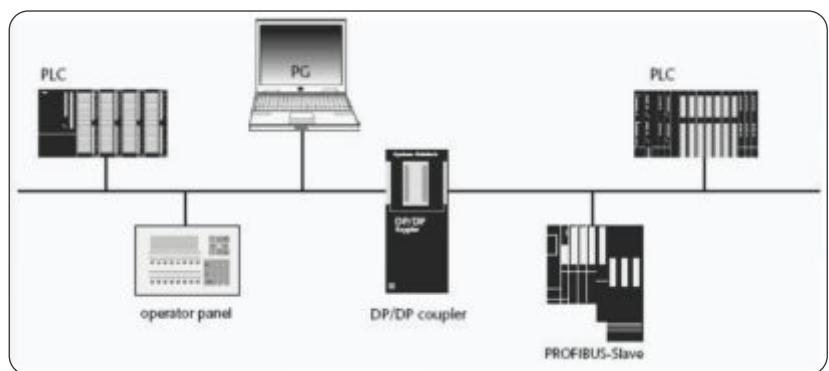


PROFIBUS



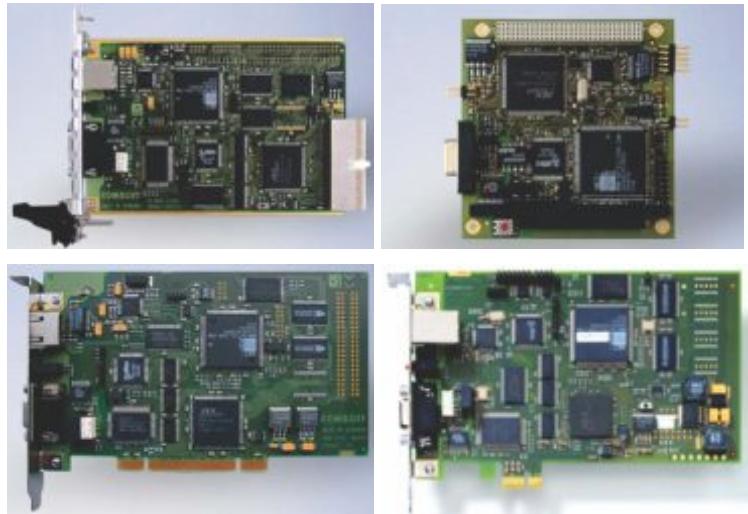
DP-DP Coupler

- ▶ Interlinks two PROFIBUS DP networks and permits data transmission between the masters and the two DP networks.
- ▶ Maximum size of the transmitted data: 244 Bytes I/P and 244 Bytes O/P data.
- ▶ The DP/DP coupler is configured in the PLC/DCS software by means of a GSD file.
- ▶ To get information of DP devices on Profibus.



PCI Cards

- ▶ Intelligent communication modules for PCs.
- ▶ Master or Slave functionality
- ▶ Handles all PROFIBUS protocol variants
- ▶ Interface with SCADA possible through OPC support
- ▶ Models: DF PROFI II PCI, DF PROFI II Compact PCI, DF PROFI II PC104+, DF PROFI II PCIe
- ▶ Communicate in Industrial PC
- ▶ Supported any diagnostic Tool



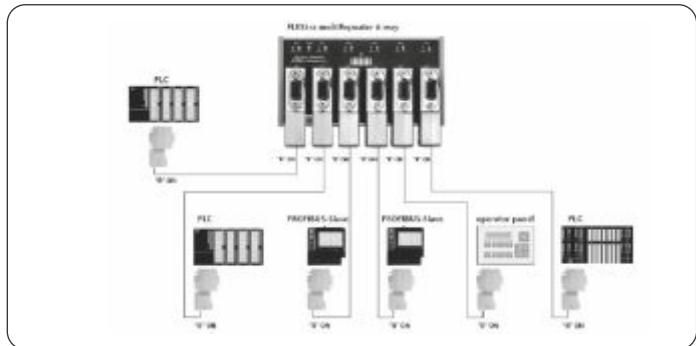
PCI Cards for Barmag Systems



- ▶ Desktop PCs as well as notebook devices without PROFIBUS interfaces can be connected to PROFIBUS stations within seconds based on the plug & play features of USB.
- ▶ Operational areas are mobile set up and configuration of field devices.
- ▶ The device is USB bus powered and it is not dependent on external power connections.
- ▶ Its high transmission rate of up to 12 Mbit/s is of special interest for fast application in the manufacturing process like drive set-up and diagnosis.



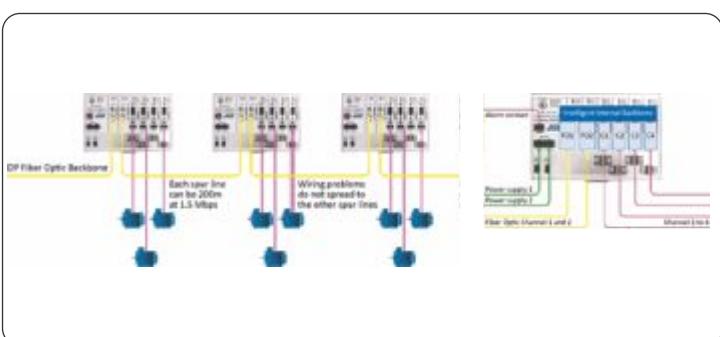
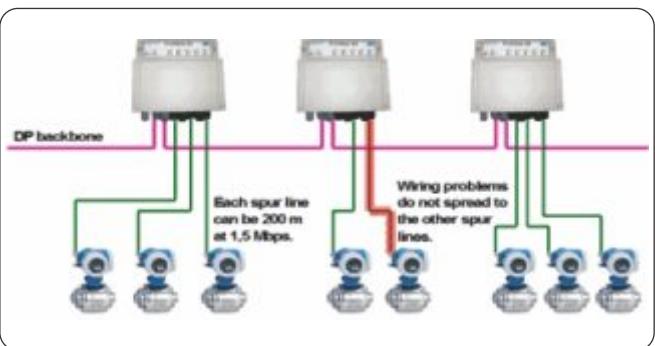
PROFIBUS



Multiport Repeater - IP20

Multiport Repeater - IP20

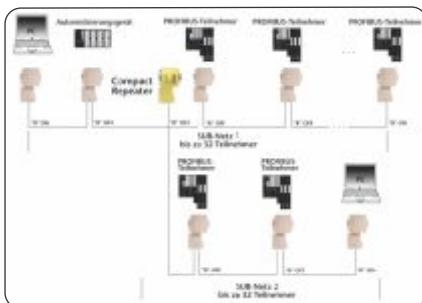
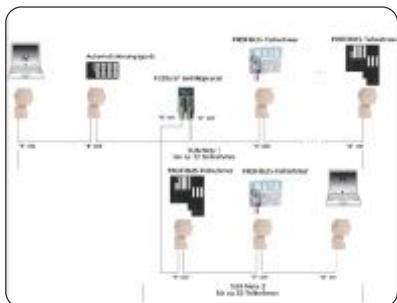
- ▶ The signals are restored in level, slope, and duty cycle.
- ▶ All Baudrate Support Automatically
- ▶ Profibus & MPI Both are supported
- ▶ The status LEDs integrated for each segment provide a quick overview of the current bus status
- ▶ Electrical isolation of all segments
- ▶ Star network with independent segments.
- ▶ Can be used for bus extension or as a spur line
- ▶ Increase the number of participants.
- ▶ DIP switch for switching off the individual segments and a switch for turning off all segments.
- ▶ PROFIBUS connectors are required for connection to the PROFIBUS cable.



Multiport Repeater with FO Backbone

- ▶ The ProfiHub B2FO2+ & B4FO2+ is a cost-effective solution to link PROFIBUS fiber optic to multiple RS 485 segments and vice versa.
- ▶ Enables reliable applications where long cable distances and an isolation between devices and segments are required.
- ▶ The massed junction of copper segments reduce expensive fiber optic couplers and create an object-oriented overview for the end user.
- ▶ Fiber optic to multi RS 485 Segments coupler for Point-to-point, bus- and star configurations
- ▶ 2 Fiber channels MM with 4 ST/BFOC connectors for 3 km cable length
- ▶ Multimode cable G62.5 / 125 (OM1) - 850 nm
- ▶ No limit in cascading

PROFIBUS



Single Port Repeater

- ▶ Increased RS 485 strength
- ▶ Isolated Channels (Repeater Segment)
- ▶ 31 devices per segment, 1.2 Km cable length (depends on transmission speed)
- ▶ No limit in cascading
- ▶ Redundant DC power supply (19..28 VDC)
- ▶ Integrated termination facilities (switches).
- ▶ Configurable grounding system (direct or capacitive).
- ▶ Screw terminals and DB9 connectors.
- ▶ Hot slave insertion/removal during operation
- ▶ Galvanically Isolated & Short circuit protection on each channel
- ▶ Available in IP 20, IP 65



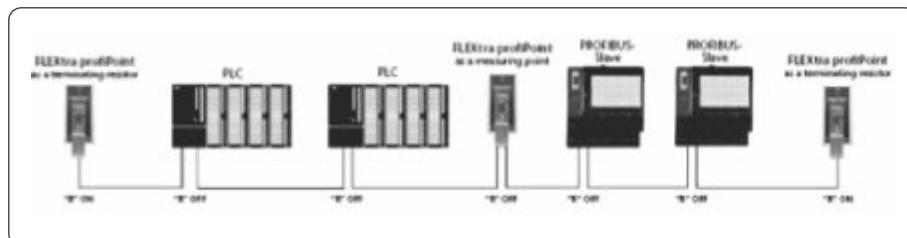
Compact Repeater

- ▶ Isolated Channels (Repeater Segment)
- ▶ Used as bus extension or spur line
- ▶ Used in MPI networks
- ▶ Status LEDs per segment
- ▶ Repeater function can be deactivated
- ▶ Electrical isolation.
- ▶ No Power supply.
- ▶ Compact repeater to network
- ▶ Models : Compact, Twin



Active Terminator

- ▶ Bus termination independent of terminal device due autonomous power supply
- ▶ Power supply independent of bus nodes
- ▶ Used as an active measuring point
- ▶ Diagnostic LEDs to indicate the status of the power supply
- ▶ Reliability & Flexibility provide Network.
- ▶ Active power terminator to Idle voltage
- ▶ Supply to active PROFIBUS components (Compact Repeater, NETLink, PROFIBUS diagnostic connector)
- ▶ T1 comes with removable screw terminals and 1 DB9 connector
- ▶ Redundancy: Power 1 OR 2



PROFIBUS



Connector - Metallic Body

- ▶ Available in 90, 0 , 35 Degree angled
- ▶ Metalized housing
- ▶ No loose parts
- ▶ Integrated programming / diagnostic port
- ▶ Integrated switchable terminating resistor
- ▶ Screw terminals
- ▶ With and Without LED Indication
- ▶ Easy Connect and Screw connect facility
- ▶ Optional DB9 with M12 Connectivity
- ▶ Support Rs 485 Technology

Connector - Metal Body

- ▶ Available in 90, 0 , 45 Degree angled
- ▶ Cable slots with transparent covers for high visibility (wiring, position of screen and cable)
- ▶ Full metal construction for noise immunity and harsh environment
- ▶ State monitoring via integrated LEDs for bus diagnosis
- ▶ Comfortable IDC technology for fast and reliable wire connection.
- ▶ Captive singe-screw-mounting system - no loose parts
- ▶ Integrated switchable termination resistor
- ▶ Integrated programming / diagnostic port
- ▶ Support RS 485 technology.



Connector - M12

- ▶ Male, 4, 5, and 8-Pole .
- ▶ 5 poles, B coding, especially suitable for Profibus signal cable
- ▶ Field attachable connector, M12 male connector 4, 5, and 8-pole with threaded joint, shieldable, assembling with screw terminals.
- ▶ Female, 4-, 5-, and 8-Pole
- ▶ Field attachable connector, M12 female connector 4, 5 and 8-pole with threaded joint, shieldable, assembling with screw terminals.



PROFIBUS



Network Design & Installation Support

- ▶ Operational bidding partners to all the leading OEM's, System Integrators and EPC Contractors.
- ▶ One stop solution for all Profibus needs such as Product, Service, Diagnostic & Training.
- ▶ Qualified on-site engineers with vast field experience for field analysis.
- ▶ Physically checked site data is sent to HO for expert analysis of the network.
- ▶ Best available tools used for analysis and troubleshooting purpose.
- ▶ Based on the observations modifications or corrections suggested.
- ▶ Submission of the detailed audit service report to customer.
- ▶ Industries served such as Automotive, Steel, Cement, Packaging, Pharmaceuticals, Chemical, Food & Beverages etc.

Diagnostic Services

- ▶ Profibus network troubleshooting
- ▶ Network audit services
- ▶ Network design & installation support
- ▶ 3rd Party audit service
- ▶ Annual maintenance contract (AMC's)



Training Programme

- ▶ Profibus Basics, Maintenance & Troubleshooting (2 DAYS)
- ▶ Certified Profibus Engineer (CPE)- DP (4 Days)
- ▶ Certified Profibus Engineer (CPA)- PA (2 Days)
- ▶ Profibus DP Development (2 DAYS)
- ▶ Certified Profibus Installer (2 Days)
- ▶ Profibus in House Training Program (3 days)





PROFINET

Connector

- ▶ Quick-connect technology Easy Connect®.
- ▶ Visual connection control.
- ▶ Heavy-Duty metal housing.
- ▶ Transfer-rates of up to 100 Mbps
- ▶ Easy to mount and meet the IP20 requirements
- ▶ 4-wired Twisted-Pair cables
- ▶ Contact elements are highlighted according to the colors of the wires to prevent wiring errors
- ▶ Models: 90 ° / 180°, RJ45, Easy Connect®, 10/100 Mbps



PN/PN Coupler

- ▶ Connect two PROFINET networks.
- ▶ Enables data transmission between the controllers of the two networks.
- ▶ Maximum size of the transmitted I/O data is 1,024 bytes.
- ▶ No additional configuration software is necessary.



Connector - M12

- ▶ Field attachable connector, M12 male connector, 3 and 4-pole with threaded joint, shield able, assembling with spring-type terminals.
- ▶ 0986 EMC 102: 4 poles, D coding, especially suitable for Industrial Ethernet data cable.
- ▶ Connector with threaded joint.
- ▶ EMC shield able.
- ▶ Assembling with spring-type terminals.



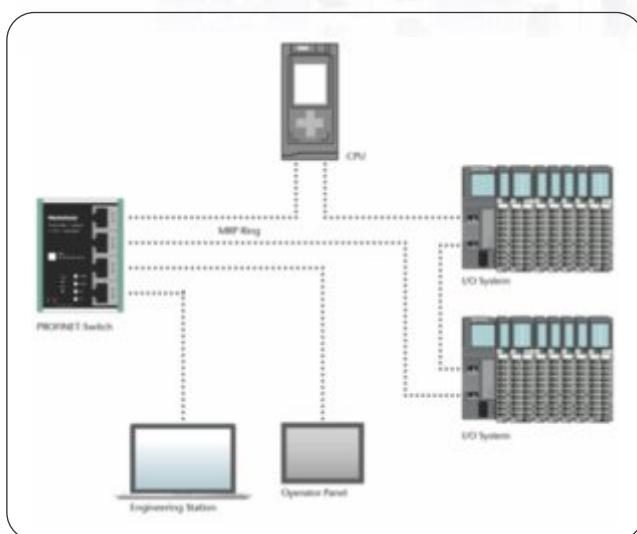
DP/PN Coupler

- ▶ Connects your PROFIBUS to PROFINET.
- ▶ Simple and uncomplicated connection is possible.
- ▶ Maximum size of the transmitted data is 244 bytes of input.
- ▶ And 244 bytes of output data.
- ▶ Projected via GSD file and GSDML file.
- ▶ No additional configuration software is necessary.



PROFINET

SWITCH 4, 8, 16 Port, Managed



- ▶ Prioritizing of the PROFINET frame traffic in the machine network
- ▶ Integration into the automation network with GSDML file.
- ▶ It is also possible to carry out a diagnosis and/or configuration via Telnet or SSH.
- ▶ The supported PROFINET protocols, such as LLDP, DCP, or even diagnosis alarms, can be easily configured and administered.
- ▶ Neighborhood detection
- ▶ Ring redundancy
- ▶ Each port can be activated or deactivated
- ▶ Diagnostic messages for network problems
- ▶ Identification and maintenance data
- ▶ PROFINET Conformance Class B
- ▶ Connects upto 4,8, 16 participants of PROFINET Network
- ▶ Port mirroring
- ▶ Time synchronization via SNTP

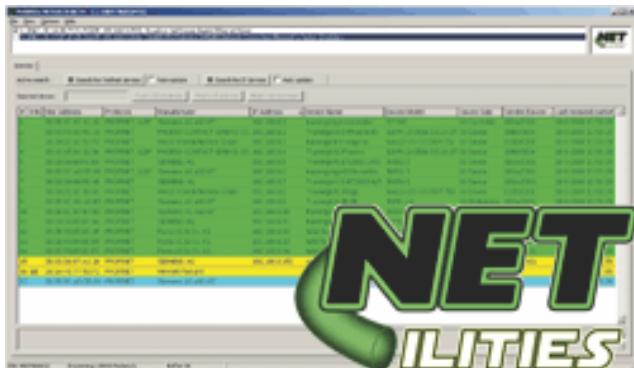
PCI Card

- ▶ The COMSOFT DF PROFINET IO board operates as a PN IO Controller.
- ▶ Efficiency is so huge, the new board achieves operations of 64 PROFINET devices per millisecond in the performance class RT.
- ▶ Excellent plant-wide networking, fast data communication and long-term availability are just a few of the many benefits.
- ▶ Operate large networks without any performance restriction.





PROFINET



Diagnostic Tool

- ▶ Compact and efficient tool.
- ▶ It generates a live list of the PROFINET/Ethernet network.
- ▶ A detailed report provides information about the reliability of the PROFINET network.
- ▶ Netilities utilizes the standard Ethernet/WLAN port on the PC or interfaces with a ProfiTap.
- ▶ Netilities is also used to set Device Names and IP addresses and export the detected devices to CSV.
- ▶ The LED test feature can visualize the targeted PROFINET device.
- ▶ Real Time scan / Live List of the complete network.
- ▶ Suitable for other Ethernet systems.

Monitoring Tool

- ▶ Usable for most PROFINET/Ethernet monitoring tools.
- ▶ No loss of messages.
- ▶ Time stamped messages.
- ▶ Does not endanger the real-time behavior.
- ▶ No security hazards is not visible for switches/devices.
- ▶ Grounding concept is not disturbed.



Handheld Cable Tester

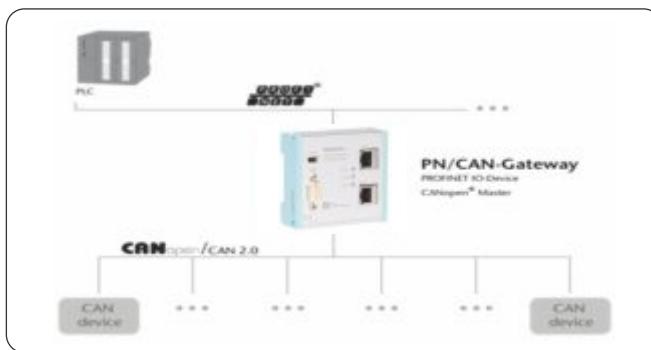
- ▶ Essential tool to verify the condition of the PROFINET cable after assembly and installation.
- ▶ With just 1 key-press the test result is directly displayed and continuously updated.
- ▶ Utilized on all other Ethernet networks with 4-wire and 8-wire shielded cables.
- ▶ This outstanding tool that fits in your pocket.
- ▶ Boost the efficiency of installers and maintenance technicians.



Training Programme

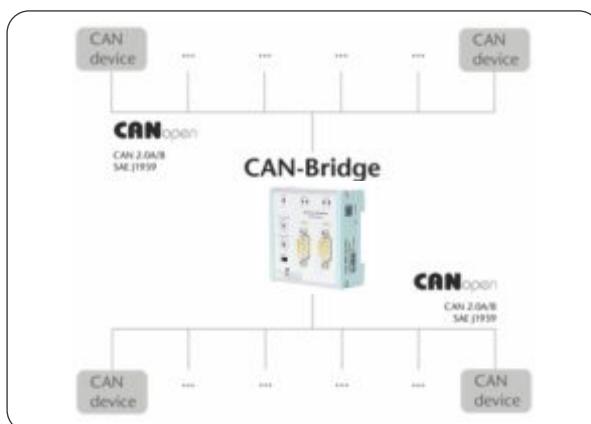
- ▶ Certified PROFINET Engineer (CPNE) (4 Days)
- ▶ PROFINET Technical Training (1 Days)

CANBUS



DP/CAN Coupler

- ▶ The I/O data of the CAN open® participants is shown in the PROFIBUS in a transparent and freely configurable manner.
- ▶ The DP/CAN coupler is integrated in the hardware configurator with a GSD file
- ▶ PB Coupler 12 Mbps & CAN up to 1 Mbps
- ▶ The PROFIBUS address is set using a DIP switch.
- ▶ 3 status LEDs
- ▶ USB port for firmware updates
- ▶ Up to 15 CAN open participants
- ▶ CANopen master and CAN Layer 2 possible

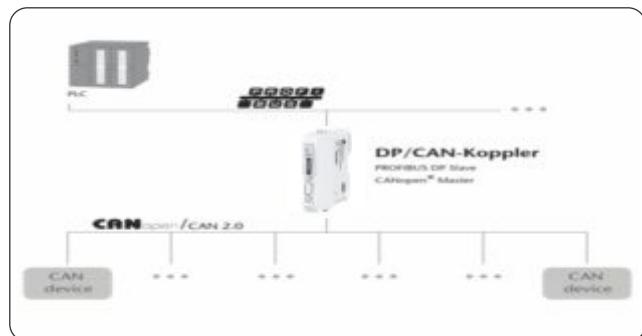


Connector

- ▶ Available in 90 & 0 Degree angled
- ▶ With & Without PG Port
- ▶ Metalized housing
- ▶ No loose parts
- ▶ The switch can also be operated in the installed condition.
- ▶ The setting is clearly visible.
- ▶ additional connection jack
- ▶ Integrated switchable terminating resistor
- ▶ Screw terminals
- ▶ With and Without LED Indication
- ▶ Easy Connect and Screw connect facility
- ▶ Optional DB9 with M12 Connectivity
- ▶ Support RS 485 Technology

PN/CAN Gateway

- ▶ PN/CAN gateway is a PROFINET I/O device and supports transfer rates up to 100 Mbps full duplex; and up to 1 Mbps on the CAN bus
- ▶ The PN/CAN gateway is integrated with a GSDML file in the hardware configurator
- ▶ No other software tools for configuration
- ▶ handling blocks for programming are necessary, making gateway use straightforward.
- ▶ Supports the CANopen master protocol
- ▶ Up to 127 CANopen slaves possible.
- ▶ SDO communication, emergency messages, participant monitoring with heartbeat and node guarding
- ▶ Up to 16 PDOs can be configured for each CANopen® slave



CAN Bridge

- ▶ CAN networks have different transfer rates or work with different protocols,
- ▶ A flexibly adjustable filtering logic can accept freely selectable identifiers and transfer them to the other network.
- ▶ Connect different CAN networks (different transmission rates / different protocols)
- ▶ Automatic detection of transmission rates
- ▶ 5 LEDs indicate the status of the device and the connected CAN networks.
- ▶ The CAN bridge allows a flexible design of the network topology; star and tree structures as well as extensive line structures can be implemented.





Distributed Field bus I/O System



TB 20 Distributed Field bus I/O system is used for I/Os in the field to receive data from field & collectively gives to their respective bus system for data transmission. It's electrically isolated from backplane bus & also wire break detection alarm.

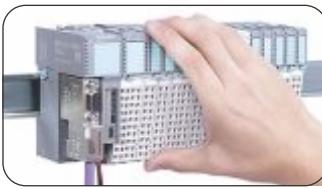
USB device port for online diagnostics, configuring parameters, setup, and firmware updates with "TB20 ToolBox"

TB20 ToolBox simulation for setting up the I/O system without a higher-level controller in order to test the system's operation (I/O check)

With the TB20 I/O system you generate efficient and functional added value for a variety of application areas – irrespective of the field bus and proven in practice!



Three-component module design



Ideal handling, achieved with a compact design



Clear, unique labels



Hot-Swap capability

TB 20 TOOL BOX

Makes it easy to methodically design TB20 systems. From selecting and positioning components and configuring their parameters to printing label strips and documentation for projects

- ▶ SMART PLANNING AND CONFIGURATION
- ▶ Real Time Diagnosis
- ▶ Importing & Exporting Symbols
- ▶ Simulation





Component For S7

CANopen Solutions for Siemens

CM CANopen

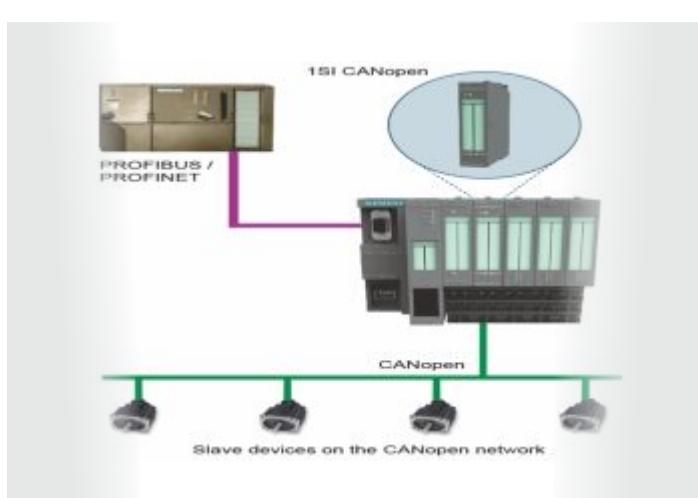
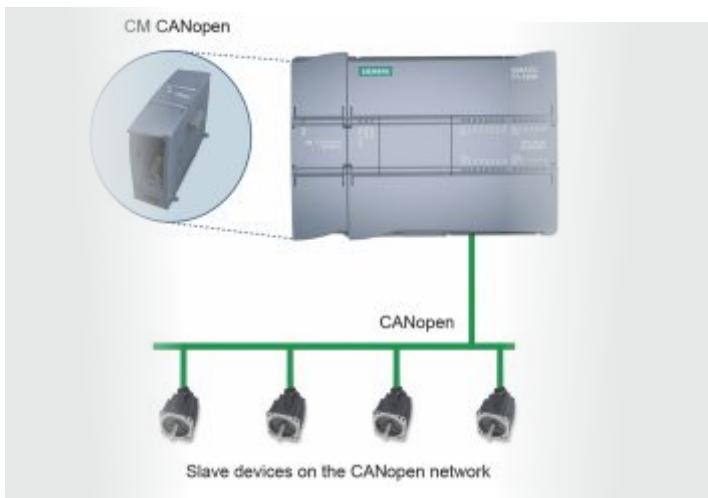


1 SI CANopen



- ▶ The CM CANopen enables system integrators to connect any CANopen or CAN 2.0A device to the SIMATIC S7-1200 PLC. The module plugs into the communication module interface of the S7-1200 and acts as a bridge between the CANopen or CAN devices and the SIMATIC basic controller, allowing integrators to choose from a wider range of automation products when designing their system.
- ▶ Transparent CAN 2.0A functionality with the CM CANopen
- ▶ CAN 2.0A supported
- ▶

- ▶ The 1 SI CANopen module brings CANopen connectivity to the SIMATIC ET200S modular I/O system, enabling full integration between devices on a CANopen network and the ET200S. Furthermore, the addition of 1 SI CANopen module into the ET200S system allows a CANopen network to be seamlessly controlled from PROFIBUS and PROFINET.
- ▶ The 1 SI CANopen module is supported by all interface and CPU modules of the SIMATIC ET200S modular I/O system, with the exception of the Basic and Compact versions.
- ▶ Transparent CAN 2.0A functionality with the 1 SI CANopen
- ▶ Functionality supported in transparent CAN mode
- ▶





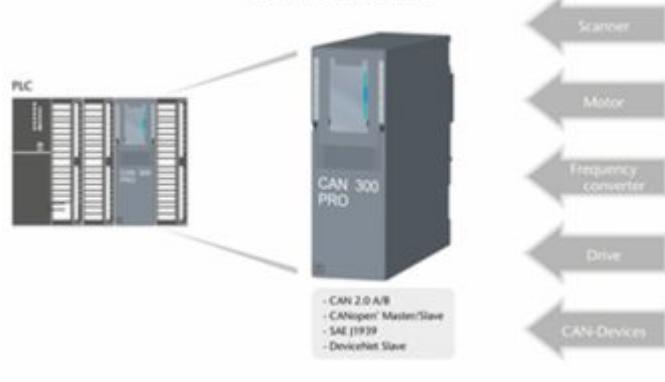
Component For S7



Communication Module for CANbus

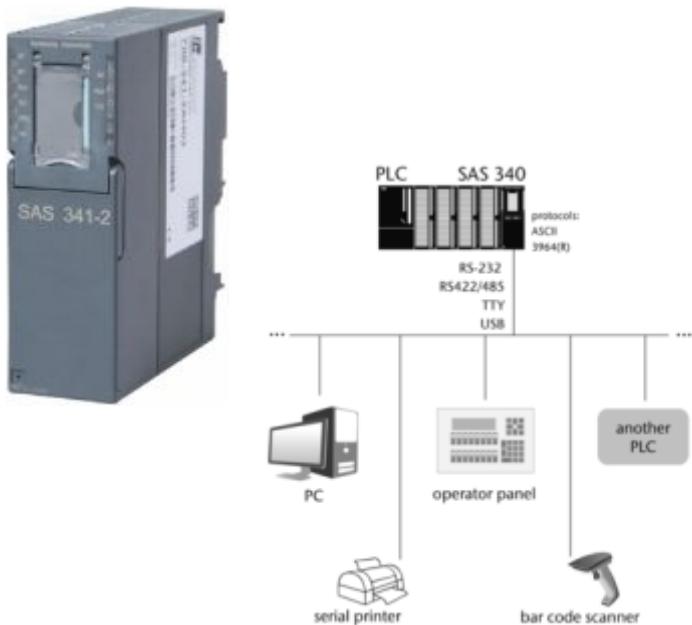
- ▶ Supports CAN 2.0A (11 bit) and CAN 2.0B (29 bit) frames with a freely selectable transfer rate from 10 kbps to 1 Mbps.
- ▶ CAN Module Send telegram CAN Master & CAN Slave
- ▶ There are 16 freely settable timers available in the CAN 300 PRO
- ▶ DIP switch for setting the transfer rate and station address facilitates commissioning
- ▶ Replacement of the parameterization or the module during servicing can be carried out quickly.
- ▶ 6 LEDs indicate the operating status of the module. There is a USB interface for diagnostics and parameterization.
- ▶ Extensive CAN bus diagnostics possibilities
- ▶ Extended ambient temperature
- ▶ The module can be plugged into either the central frame or the expansion frame
- ▶ CAN Module Send telegram CAN Master & CAN Slave
- ▶ It supports CAN 2.0A (11 bit) and CAN 2.0B (29 bit) frames with a freely selectable transfer rate from 10 kbps to 1 Mbps.
- ▶ The CAN 400-1 can be operated as Layer 2, CANopen® master or CANopen® slave.
- ▶ DIP switches for address + transfer rate
- ▶ USB interface for parameterization and diagnostics
- ▶ 1 CAN interface & CAN 2 Interface

CAN 300 PRO



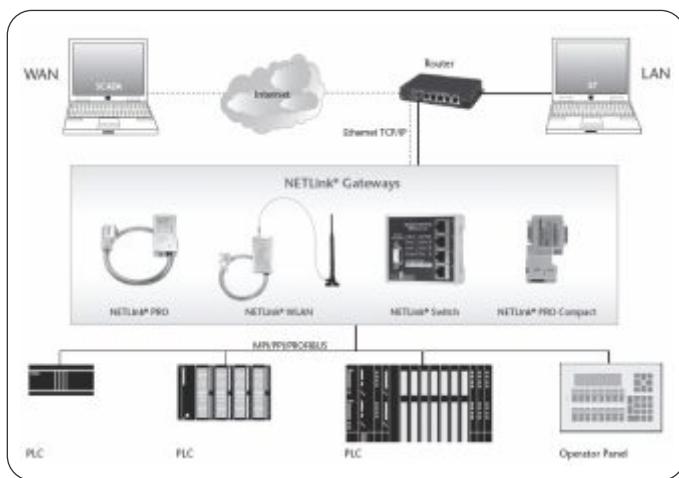
Communication Module for Serial Interface

- ▶ The SAS range of serial communication module for use in S7-300* systems.
- ▶ It allows the connection to the PLC of serial devices such as barcode scanners, operator terminals, serial printers, PCs, PLCs of other manufacturers and supports the protocols ASCII and 3964R.
- ▶ The features advanced functions such as support for higher baud rates up to 115 kBaud, making it flexible without any loss of compatibility.
- ▶ The handling blocks supplied enable simple and flexible integration into the PLC.
- ▶ The module is parameterized in the hardware configurator of the PLC.
- ▶ The expanded functionalities can also easily be activated with the handling blocks.
- ▶ A virtual COM port driver enables the use of software that expects a COM interface
- ▶ The SAS 340-1 & 341-1 has 1 x RS422/RS485
- ▶ The SAS 340-2 & 341-2 has 2 variant 2 x RS232, 2 x USB & 2 x RS422/RS485





Component For S7



Memory Cards / Micro Memory Cards

- ▶ The memory card with a capacity of 4,12,24,256, MByte & 2GByte is suitable for use in the S7-1200*/S7 1500*
- ▶ The micro memory card with a capacity of 64,128,256,512 kByte & 1,2,4,8 MByte is suitable for use in the S7-300* and ET200S
- ▶ The Flash EPROM Card with a capacity von 256 kByte is designed for use in CPU modules from CPU 412 to CPU 417.
- ▶ The RAM Card with a capacity von 64,256 kByte & 1MByte is designed for use in CPU modules from CPU 412 to CPU 417 400 Series

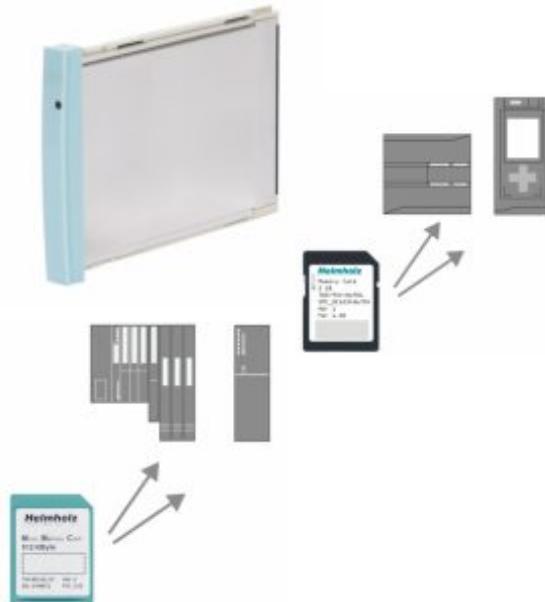


Front Connector & Accessories

- ▶ Front Connector with cable, spring-type terminal & easy connect facility
- ▶ Front Connector without cable, spring-type terminal & easy connect facility
- ▶ Front adaptor for S7 modules, FastPlug
- ▶ Available in 20, 40 pin
- ▶ Mounting Rails

Configuration Tools

- ▶ Programming, configuring and visualizing S7 PLCs
- ▶ Flexibility, compact design and even more application benefits.
- ▶ Power is supplied via the CPU of the automation unit or optionally by an external 24V DC power unit.
- ▶ MPI/PPI/PROFIBUS to Ethernet TCP/IP via USB, Wireless, Ethernet Switch media.
- ▶ Ethernet to Profinet Gateways.

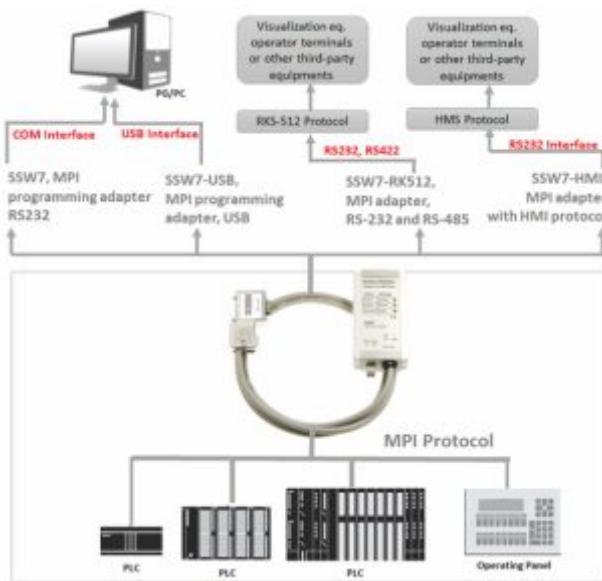


Input / Output Modules

- ▶ Component S7 IO module from UL-Helmholz range is Compatible modules for equivalent to ET-200 system.
- ▶ One to One equivalent Card.
- ▶ No any configuration.
- ▶ Available in Front Connector Screw ,Easy. PIN 20,40 .
- ▶ ALL Siemens S7 series spare available in Helmholtz Make AI AO DI DO PT 100.
- ▶ S7 I/O Module, Din Rail, Memory Card



Component For S7



Interface Converter - MPI Bus

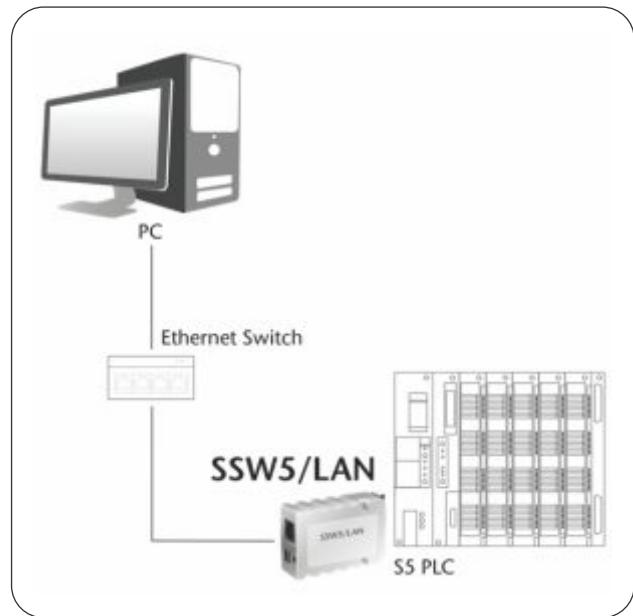
MPI (Multi-Point Interface) is the integrated interface for SIMATIC products such as controllers, panels, programming devices, PCs, etc. Transmission media of MPI includes electrical standard RS485, optical medium, etc. which are also used by PROFIBUS.

FEATURES:

- ▶ Programming and Visualization
- ▶ Transfer rate upto 115kbps
- ▶ Power Supply from the AD or external 24V
- ▶ Parameterization and diagnostic functions are possible using the SHTools software.

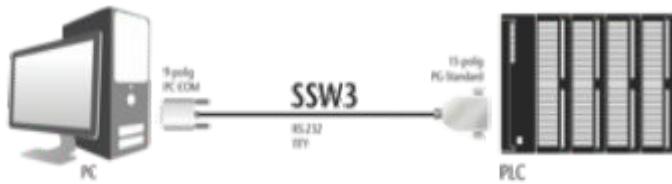
S5 Interface Converter

- ▶ A special virtual COM driver enables the use of common programming tools, such as STEP* 5 V7.2 from Siemens.
- ▶ The power is supplied via the CPU or externally (24 V).
- ▶ Virtual COM port for all common commissioning tools
- ▶ Fits onto any standard S5-CPU
- ▶ Unique detection on the network through device names
- ▶ Program S5 via TCP/IP



SSW3 Interface Converter

- ▶ The RS232/TTY converter is completely integrated into the 15-pin connector
- ▶ Housing, an external power supply is therefore not required.
- ▶ The transmission of data signals takes place over an RS232 connection.
- ▶ Every programming software on a PC
- ▶ Online coupling with the AD with data exchange
- ▶ Visualization and coupling software
- ▶ The cable is 5 m long. 10 & 15 mtr Long.



Product Range

Product Group	Range
Industrial Interface	<p>SMPS: Single/ Three Phase; 0.75 A- 100 A; As per CE/UL/CSA/TUV approved</p> <p>Signal Isolators & Converters: Current/ Voltage/ Frequency/ Temperature. Two & Three Way Isolation. Programmable Converters</p> <p>Relays: Electromechanical/ Solid State/ Miniature. Basel PCB Mounted; 2/3/4 Change Over. Coil Voltages up to 220 V DC</p> <p>Forcibly Guided Contacts Relays</p> <p>Barriers & Isolators: Intrinsically Safe Area Barriers & Isolators; HART Management Software & Hardware</p>
Sensor- Actuator Solutions	<p>Active I/O Module: Standalone IP67 /IP 68/IP69K modules and bus connectors/cables for field wiring</p> <p>I/O Systems -LioN-Link: the new modular IP67 distribution system for decentralized utility.</p> <p>Passive Distributors: Actuator/Sensor distribution boxes - for effective bundling of parallel wiring, with M8 or M12 sockets.</p> <p>Sensor Cables: Cord sets, Double-ended, Single Ended Sensor Cable</p> <p>M12 M8 M23 7/8" Circular Connectors/and Adapters: Connectors and Cord sets for Actuators, Sensors and Data & T-Connectors (Splitters) and Adaptors.</p> <p>Valve Connectors, Form A, B, C (GDM-Series): Rectangular connectors for hydraulic, pneumatic and electromagnetic actuators</p>
Cables	<p>Control: Unshielded 6 Shielded; Stationary / Drag Chain; PVC/TPE/HFF R/PUR/FRLS. As per VDE/CE/UL/CSA/HAR standards</p> <p>Power: Copper / Aluminum; Un-armoured/ Armoured; XLPE/ PVC/ HFFR/ FRLS. As per VDE/CE/UL/CSA/ IEC</p> <p>Data & Signal: Unshielded 6 Shielded; Cored/ Paired; Stationary / Drag Chain; PVC/TPE/HFFR/PUR/FRLS/ PE. As per VDE/CE/UL/CSA</p> <p>Instrumentation: Un-armoured/ Armoured; Unshielded/ Shielded; Paired/ Triad; XLPE/ PVC/ HFFR/ FRLS. As per BS 5308</p> <p>Servo: Unshielded 6 Shielded; Stationary / Drag Chain; PVC/TPE/HFFR/PUR. Suitable for SIEMENS; INDRAMAT; LENZE etc. As per VDE/CE/UL/CSA/ DESINA standards</p> <p>VFD: Shielded; XLPE/PE/PVC/TPE/HFFR As per VDE/CE/UL/CSA</p> <p>Encoder: Shielded; Stationary / Drag Chain; PVC/TPE/HFF R/PUR. Suitable for SIEMENS; HEIDENHAIN; NUM; B6R; FANUC; INDRAMAT; BERGER LAHAR etc. As per VDE/CE/UL/CSA/ DESINA Std.</p> <p>Robotics: Unshielded b Shielded; Cored/ Paired; TPE/PUR/ POLYOLEFINES. As per VDE/CE/UL/CSA</p> <p>Field Bus: Profibus; Profinet; Modbus; DeviceNet; Ethernet; CANOpen; CC-Link; EIB/KNX; Foundation Field Bus etc</p> <p>High Temperature: SILICON/FEP/PTFE/ ETFE/ SPL. POLYMER COMPOUND. 105 -1400 Deg.C. As per VDE/CE/UL/CSA</p> <p>Material Handling: Control/ Power; Un-shielded/Shielded; Round/ Flat; PVC/TPE/PUR/ EPR/ NEOPRENE/ SPL. RUNBBER COMPOUND. For Festooning/ Drum Reeling. As per VDE/CE/ HAR standards</p> <p>Single Cores: PVC/XLPE/PUR/HR-PVC/FRLS/HFFR. As per IS 694/IEC/VDE/UL/CSA/HAR/BS standards Fire Alarm / Survival/ Resistance: As per IEC 60331/ BS 5839-I</p> <p>Welding: PVC/ FPR. As per HAR/IS standards</p> <p>Co-axial: RG 6/11/58/59/62/71/174/178/179/187/188/213/214/ 216/223/316</p> <p>Customized: Spiral; Cable Assemblies far SERVO; FEEDBACK; RESOLVER</p>
Cable Accessories	<p>Glands: Polyamide/ Metal; PG/Metric/NPT. As per VDE/UL/CSA</p> <p>Conduits: Polyamide/PVC/PE/POLYPROPELYNE. As per VDE/CE/UL/CSA standards EMC Clamps & Heat Shrinking Sleeves</p> <p>Lugs: Insulated; Non-Insulated; Twin / Round; Fork; PIN: Insulated & Non Insulated / Tabs & Receptacles: Insulated b Non Insulated</p>
Thermal Management	Thermostats; Hygrostats; Heaters; Fan Heaters; Fan Filter Unit; Drain Valves; Pressure Compensating devices.
Tools	Cutting; Stripping & Crimping Tools
Panel Wiring Solution	LSC Wiring Solution
Sheet Metal & Bus Bar Processing Tools & Machines	<p>Control panel punching tools</p> <p>Cu/Al busbar punching/ Bending & Cutting Tools & Machines</p> <p>DIN rail, wire duct and busbar cutting.</p> <p>Metal core drilling machines and accessories.</p> <p>Thick metal sheet punching tools.</p> <p>Metal edge deburring and beveling tools.</p> <p>Magnetic Weight Lifters</p>

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