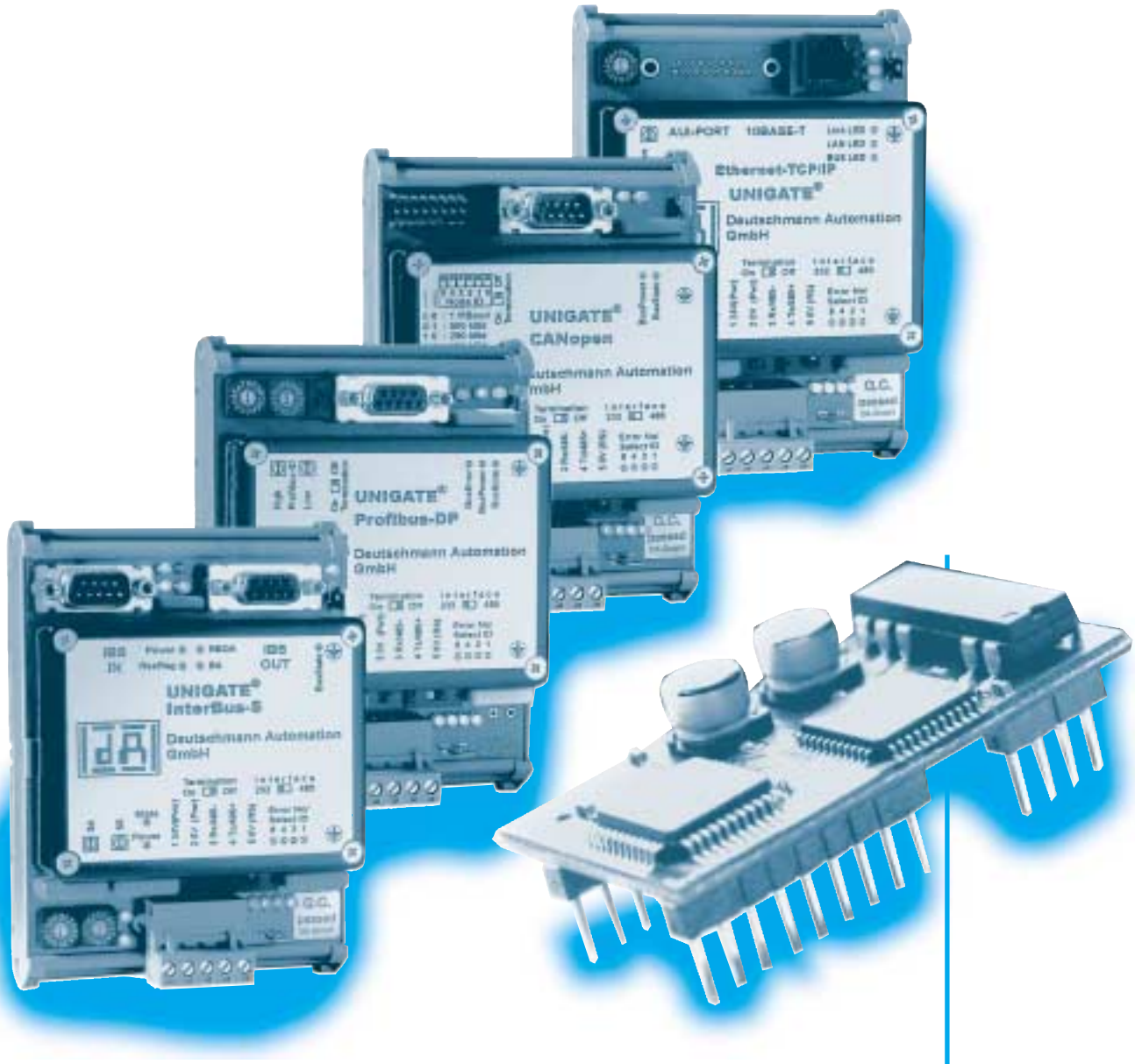
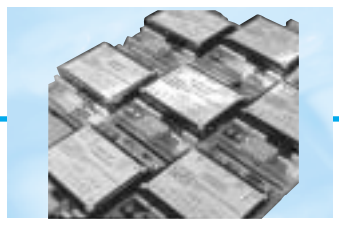
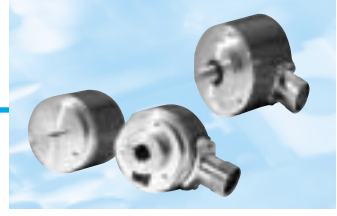
Deutschmann Automation GmbH

Gateways - UNIGATE®

Easy to the fieldbus







Issue 2002

A bus for everyone

Dear Customer
Welcome to our new catalogue all about the UNIGATE® series of fieldbus gateways and accessories from Deutschmann Automation.
For a long time bus systems have been established in industrial applications. Experts agree: The number of standard fieldbuses is still on the increase in spite of various standardization efforts. So very few automation components feature a connection option for each of the bus options supported in the UNIGATE® range. We take on this responsibility for you making connection simple for you. Deutschmann Automation has qualified resellers throughout the world and we are pleased to be at your assistance on the spot and at any time.

Please ask us what UNIGATE® has to offer for you or just have a look at our website at
http://www.deutschmann.de

Michael M. Reiter

We are looking forward to hearing from you!

UNIGATE® – made by Deutschmann Automation

Deutschmann Automation was founded in 1976 and managed a breakthrough in the field of electronic cam controls in 1982. Since 1997 we have been working on a range of fieldbus components and have been developing the UNIGATE® series of gateways. Now we are offering a product range, that comprises all fieldbuses relevant to the market as well as customized solutions, which are available from our wide distribution network. We endeavour to make sure we are up to date on all market trends and 25% of our employees are working intensively on the further development of UNIGATE® range.

Our international sales and marketing activities are controlled directly from our headquarter in Bad Camberg, Germany.

At present 21 employees guarantee we maintain our leading role with innovative products. The success of our approach is demonstrated by the constant growth of our company.

Quality made by Deutschmann

In January 2001 Deutschmann Automation GmbH was certified to DIN EN ISO 9001:2000 for the following activities:

Development, production and sales of electronic cam controls, rotary encoders and fieldbus components. Our most important aim is to realize a high quality control requirement in developing, producing and selling our products and to supply our customers with high quality reliable products as documented with this certificate.

All our products come with a 24 month warranty period. In addition to our strength in innovation, the demand for precision and quality are the most important aspects in the production of our products!


TÜV CERT

CERTIFICATE

The TÜV CERT Certification Body of TÜV Anlagentechnik GmbH

hereby certifies in accordance with TÜV CERT procedures that

Deutschmann Automation GmbH
Max-Planck-Straße 21
D-65520 Bad Camberg

has established and applies a quality system for

development, production and sales of electronic cam controls, rotary encoders and fieldbus components
EAC-Scope: 19, 18 / exclusion: without

An audit was performed,
Report No. 003062
Proof has been furnished that the requirements according to

DIN EN ISO 9001:2000

are fulfilled.

The certificate is valid until January 2004
Certificate Registration No. 01 100 003062

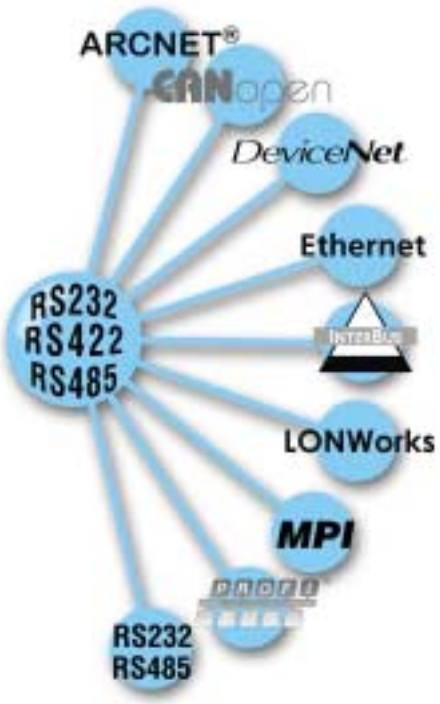
TÜV

UNIGATE® – The bridge between fieldbus-worlds

More and more designers, manufacturers and end users are faced with the need to integrate a wide variety of components and systems with fieldbuses.

The development period, license fees, royalties, development tools, training courses, test equipment and fieldbus diversity lead to runaway costs. No simple task for those in charge. With UNIGATE® we offer the optimised solution for your products.

With the help of the Deutschmann WINGATE® software and additional software products, such as "Protocol Developer®" the use of the UNIGATE® range of gateways is made easier. UNIGATE®-gateways convert from RS232, RS422 and RS485 interfaces to any of the following fieldbuses:



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Training Courses – A Compass for the fieldbus-jungle

Deutschmann Automation has developed a training concept for the subject of fieldbus systems.

The one-day courses are directed to developers, constructing engineers, people in charge of the production, technicians and decision makers, who want to achieve a good overview of the market situation for fieldbus systems.

Fieldbus specialists offer you an overview of the “fieldbus-world”, of possible applications and the advantages that result from the use of fieldbus gateways. We will demonstrate how a quick and cost effective integration of devices, without a fieldbus connection, can be connected to a fieldbus via a standard seriel interface.

Find confidence in the daily fieldtested know-how of our experts.

We shall:

- give an extensive overview on all commercially available fieldbuses
- demonstrate functions and specific features of the single buses
- show application and optimisation potentials
- show connection possibilities between different fieldbuses
- show how it is possible to link from fieldbus to an RS232/485/422-interface

We are prepared to structure the contents of the training in accordance with your needs.
Please contact us to discuss what you need.

Latest Internet with detailed download area

www.deutschmann.de - more than just an Internet-address

In addition to the usual information we are constantly offering extensive extra options.

A highlight of our Internet service is the download area: There our current instruction manuals, catalogues, brochures and fieldbus-certificates for the UNIGATE®-series are placed at your disposal in electronic form as either pdf- or zip-files.
The very latest software versions are also available such as WINGATE® the programming software for the fieldbus gateways and WINLOC® for the cam controls which can be downloaded free of charge.

The latest addition to our service is the Hotline button. Send us a short description of your request and we will be able to help you along. Deutschmann Automation not only provides a good service for its products but also the very latest in web based performance via our data highway to www.deutschmann.de

A visit is worth a try!

Where can gateways be used?

Gateways are used in many different applications. Numerous manufacturers trust Deutschmann Automation’s fieldbus know-how.

For instance the following products operate with fieldbus technology from Deutschmann Automation:

- frequency controls
- operator terminals
- temperature controllers
- cam controls
- safety controllers
- laser barcode scanners
- sensors
- rotary encoders
- touch-panels
- cooling systems
- fire protection flaps
- interrupt free power supplies
- various applications in mechanical engineering
- positioning controls
- alarm systems
- current analysers
- escalators
- elevators
- signal converters
- sanitary controls
- scanners
- scales
- controls for sewage plants
- applications in the automotive industry
- measuring systems
- and much more

Before we describe our specific products, we would like to introduce the mode of operation of the UNIGATE® series of gateways

Mode of operation of the system

1. General explanation
Communication is split into seven layers, layer 1 to layer 7, in accordance with the ISO/OSI-model.
The Deutschmann Automation gateways convert layers 1 and 2 of the customized bus system (RS485/RS232/RS422) to the corresponding fieldbus system.

Layers 3 to 6 are forwarded in different ways depending on the respective fieldbus. Layer 7 is forwarded transparently on the standard gateways. However, customized adaptations are also possible (e.g. modifications of existing profiles of the fieldbus systems).
The gateway can be configured using the WINGATE® software supplied.

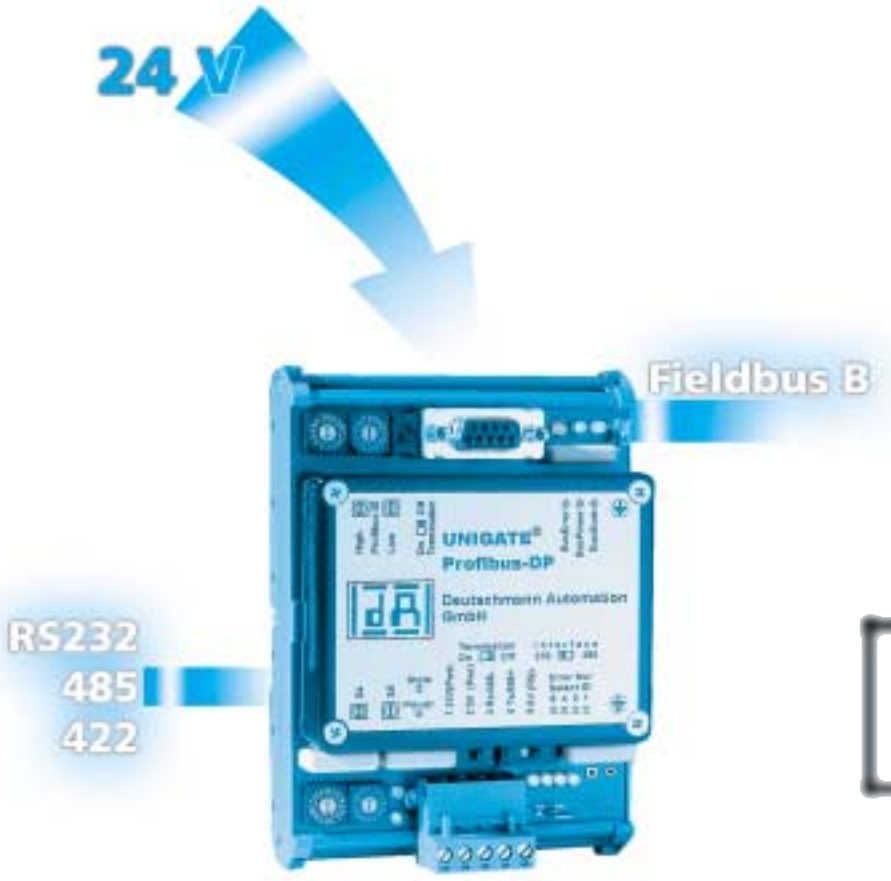
2. Interfaces
The gateway features the interfaces for RS232 and RS485 or RS232 and RS422. Selection is made using a slide switch accessible to the customer. The gateways therefore allow access to the device connected to a single RS232-interface or to multiple devices connected to the RS485-bus via an ID or a corresponding fieldbus-address.

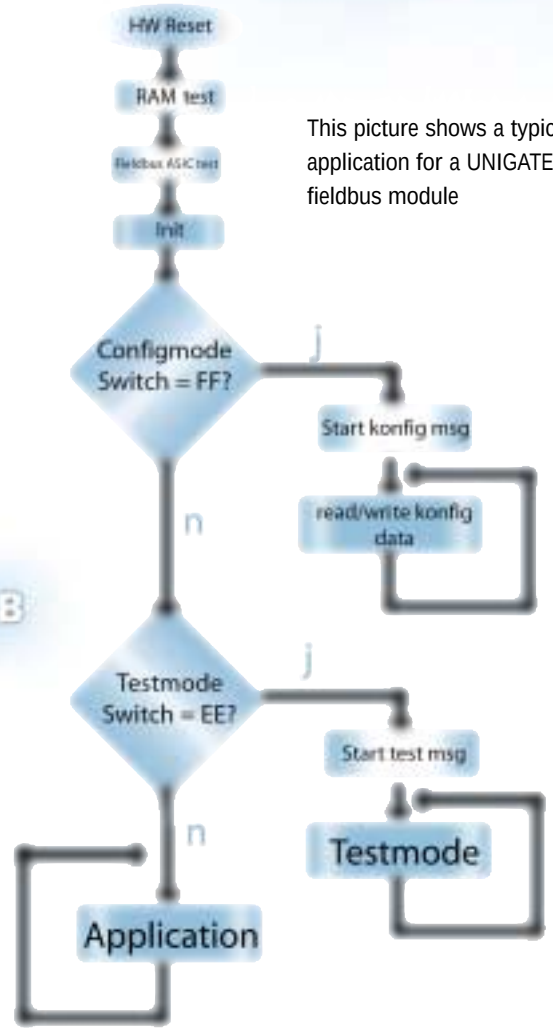
3. Data exchange
In the gateway the data received via the fieldbus is forwarded to the external device in accordance with the selected protocol. The external device responds in accordance with the protocol conventions.

4. Data exchange RS232/RS485/422
The data exchange via the RS-interface can be configured as follows:
- cyclical
- only when fieldbus-input data changes
- only when the fieldbus-trigger byte changes

Trigger byte
Length byte
User data

Data structure:
Trigger and length bytes are only used if configured accordingly.





This picture shows a typical application for a UNIGATE® fieldbus module

RS-fieldbus gateways – of the series UNIGATE®

Deutschmann Automation offers the RS-fieldbus solutions with UNIGATE® series of gateways for all major fieldbuses currently on the market. A detailed description of all our current UNIGATE® gateways follows. Since our product range is constantly expanding, please contact us if your requirement is not mentioned. UNIGATE® RS-gateways contain the following standard protocols:

- Modbus RTU
- Modbus ASCII
- 3964R
- RK512
- universal 232
- transparent
- customized
- control over character delay time
- start-/end-character

UNIGATE® IC

With UNIGATE® IC it is possible for the user to create his individual script using the PC-tool **Protocol Developer®** that is available free of charge. The user can quickly and easily write a script and load it into a script-gateway, thereby eleminating any additional expense for protocol adaptation.

Write your protocol independently.

Commercially available standard protocols, such as Modbus RTU (master/slave), Modbus ASCII, 3964R, RK512 and many more are already stored as script commands. When calling up the corresponding command, the complete protocol has been loaded and the data can be edited on the fieldbus side as desired by the end user with maximum flexibility and speed. A large library of example scripts is available in the download area of our web site at www.deutschmann.de to make the work easier. A hotline is also available when needed for the Protocol Developer®.

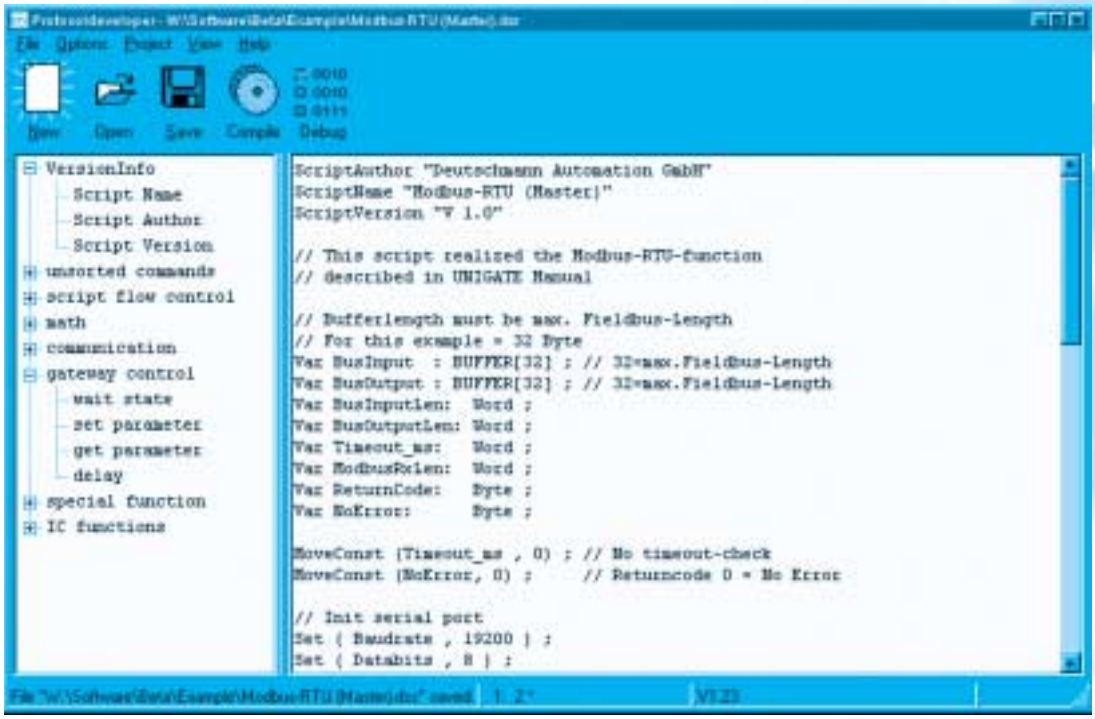
What is a script?

A script is a sequence of commands that are executed in that exact order. Because additional mechanisms are given that control the program flow in the script, it is possible to assemble more complex processes from these simple commands.

The script is memory-oriented. This means all variables always refer to one memory area. While developing a script you do not have to take care of the memory management. Protocol Developer® takes on this responsibility for you.

Essentially the hardware of the gateway does not differ from that of the standard unit. However, a special additional debug-variant is available which is helpful for testing a script.

Compared to the standard gateway, this development gateway features an additional RS232-interface. This allows a PC as well as the customer's protocol interface to be connected at the same time and be tested through the debug-mode of the Protocol Developer®.



Protocol Developer®

With the development of Protocol Developer® we were able to create a very important tool for our gateways, which allows you to create your own protocol with this software.

Protocol Developer® allows you to create your own individual protocol. Thereby saving you time and costs.

To date fieldbus gateways from Deutschmann Automation have proven successful in innumerable applications.

In the past customized protocols had to be adapted at the factory. This brought about engineering costs, especially in low volume applications. The Protocol Developer® PC-tool enables the user to easily carry out their own protocol adaptation.

When this tool was developed all requirements and experience gained by Deutschmann Automation and its customers in the last couple of years were taken into consideration.

The user-friendly 32 bit Windows® software allows free programming via scripts. The Protocol Developer® markedly extends the fields of application of fieldbus gateways and makes handling more convenient.

WINGATE®

The easy way to configure Deutschmann UNIGATE® gateways under Windows® 95/98 and Windows® NT 4.0.

Using the 32 bit PC-software WINGATE® all parameters of the connected gateway of the connected UNIGATE® - RS can be set as for instance:

- baud rate
- number of start-, data- and stopbits
- paritybits etc.

In addition, the required protocol is selected and if necessary configured. For example protocols such as DICNET, Modbus ASCII, Modbus RTU, Transparent, Universal 232, 3964R or RK512 can be selected.

WINGATE® is constantly being refined in cooperation with the hardware development of our gateways. For example it is now possible to perform a firmware download with the help of WINGATE®.

ARCNET

ARCNET was introduced in 1977 as a computer networking system by US-company Datapoint. With a data transmission rate of 2.5 Mbit/s it has now been edged out of this sector by the much faster Ethernet.

Since ARCNET is real-time capable, it is now increasingly used in industrial applications.

In addition to the comparatively low costs and the easy handling, the determining character of this token-passing procedure is often quoted as a good argument for the use of ARCNET in the automation industry.

UNIGATE® - ARCNET

The unit UNIGATE® - ARCNET adapts a serial interface to the ARCNET fieldbus in accordance with ATA/ANSI 878.1. In this application it functions as a gateway and operates as standard-compliant ARCNET-participant.

Technical data

Characteristics	ARCNET
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	9-pole D-SUB or KOAX
Physical separation	
- fieldbus-side	Standard
- RS-side	Optional
Bus termination resistance	
- fieldbus-side	Adjustable (at RS485)
- RS-side	Adjustable
Fieldbus ID	Adjustable
Fieldbus baud rate	Up to 5 Mbaud (adjustable)
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE®-RS-version or adjustable by a script in the UNIGATE®-SC series.
Fieldbus data format	Up to 254 byte
Diagnosis	8 status LED's
Technology	COM 20020
Others	
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10…50 Hz, 1 G/50…150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

ARCNET®

CANopen

CAN allows efficient transmission of digital input and output data as well as data from a higher communication (i. e. parameters). It features extensive error analysis and a highly effective transmission rate.

When properly configured CAN is ideal for geographical small real-time systems, with distributed intelligence and high reliability requirements. Beyond this various potential applications arise for systems where this specific protocol characteristics are well suited.

CAN has a high degree of transmission reliability. The arbitration, filtering of messages, error detection and error restriction as well as the confirmation of receipt are implemented in the hardware.

UNIGATE® - CANopen

The unit UNIGATE® - CANopen adapts a serial interface to CANopen in accordance with CIA DS 301. In this application it functions as a gateway and operates as CANopen slave. It can be operated by any standard-compliant master.

Technical data

Characteristics	CANopen
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	In accordance with CANopen-standard
Physical separation	
- fieldbus-side	Standard
- RS-side	Optional
Bus termination resistance	
- fieldbus-seite	Adjustable
- RS-side	Adjustable
Fieldbus ID	Adjustable by a DIP-switch
Fieldbus baud rate	Up to 1 Mbaud adjustable by a DIP-switch
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE® - RS-version or adjustable by a script in the UNIGATE® - SC series.
Fieldbus data format	2 SDO, 10 PDO maximum
Diagnosis	8 status LED's
Technology	SJA 1000
Others	GL-certified
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10...50 Hz, 1 G/50...150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

CANopen

DeviceNet

DeviceNet, a CAN-based low-priced field-bus, as costly wiring is eliminated. It was developed by Allen Bradley (Rockwell Automation). Mainly it is used to interconnect industrial plant.

UNIGATE® - DeviceNet

The unit UNIGATE® - DeviceNet adapts a serial interface to DeviceNet in accordance with DeviceNet specification release 2.0. In this application it functions as a gateway and operates as DeviceNet group 2 only slave. It can be operated by any standard-compliant master.

DeviceNet

Technical data

Characteristics	DeviceNet
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 or RS232 and RS422 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	According to DeviceNet-standard (5-pole screw-plug connector)
Physical separation	
- fieldbus-side	Standard (external bus supply)
- RS-side	Optional
Bus termination resistance	
- fieldbus-side	Adjustable
- RS-side	Adjustable
Fieldbus ID	Adjustable by a DIP-switch
Fieldbus baud rate	Up to 500 Kbaud (adjustable by a DIP-switch)
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE® - RS-version or adjustable by a script in the UNIGATE® - SC series.
Fieldbus data format	Group 2 slave
Diagnosis	8 status LED's
Technology	SJA 1000
Others	change of state, bit-strobe, polling, GL-certified
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10...50 Hz, 1 G/50...150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

Industrial Ethernet

Ethernet was developed in the mid-70s, to link a large number of equal stations over different communication levels (optical fiber cable, two-wire lines, coaxial cables).

Ethernet alone only offers a data transport from a sender to one or more receivers. No confirmation is issued for correctly received packets and errors are not corrected. No guarantee of the receipt of the complete data is given. These functions have to be served by protocol layers of overriding importance. For this the TCP/IP-protocol is particularly suitable.

UNIGATE® - Ethernet 10 BaseT or AUI

The unit UNIGATE® - Ethernet adapts a serial interface to an Ethernet with TCP/IP-/UDP-protocol. In this application it functions as a gateway and operates as a server. It can be operated by any computer system with UDP- and/or TCP/IP protocol. Webserver-functionality is already included in this low-priced module.

For the different supported serial transmission protocols, see table.

Technical data

Characteristics	Ethernet 10 BaseT
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 or RS232 and RS422 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	RJ45 or AUI (D-SUB)
Physical separation	
- Ethernet-side	Standard
- RS-side	Optional
Bus termination resistance	
- RS-side	Adjustable
- TCP/IP-address	Adjustable
Baud rate	10 Mbaud
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE® - RS-version or adjustable by a script in the UNIGATE® - SC series.
Supported Ethernet-protocols	UDP, TCP/IP, http
Diagnosis	9 status LED's
Technology	CS8900
Others	10 BaseT or AUI
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10...50 Hz, 1 G/50...150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

Industrial Ethernet

In the years to come Ethernet will reach a high growth rate in control and remote monitoring levels. On the sensor/actor level, however, the established standard fieldbuses, such as Profibus, INTERBUS, DeviceNet will still play key roles in future.

For the device manufacturer this means that in future they will still have to equip their field units with many different bus connections.

WebServer inside

UNIGATE® - Ethernet 10/100 BaseT

This module is equipped with a 32 bit risc-processor and has an available memory of 4 MB. This memory is also sufficient for extensive HTML-pages and allows various applications with the module. With up to 128 variables information can be read out from the connected device via an HTML-page or Applets such as JAVA etc. As an alternative known protocols, such as TCP/IP, UDP, FTP etc. can also selected.

For the different supported serial transmission protocols, see table.

Technical data

Characteristics	Ethernet 10/100 BaseT
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 or RS232 and RS422 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	RJ45 or AUI (D-SUB)
Physical separation	
- fieldbus-side	Standard
- RS-side	Optional
Bus termination resistance	
- RS-side	Adjustable
- TCP/IP-address	Adjustable
Baud rate	10/100 Mbaud (autodetect)
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE® - RS-version or adjustable by a script in the UNIGATE® - SC series.
Supported Ethernet-protocols	UDP, TCP/IP, http, DHCP, FTP, ICMP
Diagnosis	9 status LEDs
Technology	Netarm 32 bit risc-processor
Others	
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 76 mm (W x H x D) DIN-rail version
Weight	Approx. 400 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10...50 Hz, 1 G/50...150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

Industrial Ethernet

INTERBUS

Internationally INTERBUS is one of the most popular fieldbus systems.

INTERBUS is an open fieldbus system for progressive automation, as it uniformly combines the complete process interface system with all conventional controls. Sensors and actors can be cross-linked, machines and parts of plants can be controlled, manufacturing cells can be cross-linked and higher systems can be connected via the serial bus cable.

Topologically INTERBUS is a ring system, which means that all participants are actively integrated into one closed data bus. Each participant regenerates the incoming signal and passes it on. Compared to other ring systems the specific feature of the INTERBUS-system is that the outgoing data wire and the return wire run within one cable through every participant. Resulting in the physical appearance of a line or a tree structure. A main string starts from the bus master, from which subsystems can be built for structuring the overall system. This way the bus system can be adapted for any application.

UNIGATE® - INTERBUS

The UNIGATE® - INTERBUS adapts a serial interface to the INTERBUS-fieldbus. It functions as a gateway and operates as INTERBUS slave. It can be operated by any standard-compliant master.

Technical data

Characteristics	INTERBUS
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 or RS232 and RS422 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	According to INTERBUS-standard
Physical separation	
- fieldbus-side	Standard
- RS-side	Optional
Bus termination resistance	
- RS-side	Adjustable
Fieldbus-baud rate	500 Kbaud
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE® - RS-version or adjustable by a script in the UNIGATE® - SC series.
Fieldbus data format	Up to 32 byte
Diagnosis	11 status LED's
Technology	SUPI3
Others	Optional : PCP channel
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g as DIN-rail version
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10...50 Hz, 1 G/50...150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

INTERBUS

LONWorks

LON, or more precisely LONWorks, developed by the US-company Echelon, is a communication system for distributed applications, mainly for building automation, but also for production, process, storage and conveying as well as for systems for the power, gas and water supply industries.

LON cannot directly be assigned to the sensor/actuator level or the higher communication. It is more a question of the distribution of control functions. These control functions are divided into small tasks, that are to be completed in decentralized intelligence, similar to the client/server idea. Decisions are to be made directly on the node, without putting stress on further bus systems or other components, such as data processors of overriding importance.

LON allows the data transmission via various medias and different topologies. As a result the data transfer rate and the complete network dimension can vary considerably.

UNIGATE® - LONWorks

The unit UNIGATE® - LONWorks adapts a serial interface to the LON-bus. UNIGATE®-LONWorks module communicates in accordance with the LONTalk-protocol and can communicate with all LONWorks-nodes, corresponding to that protocol. Here it functions as a gateway and can be operated at any LON-bus.

Technical data

Characteristics	LONWorks
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 or RS232 and RS422 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	According to the LONWorks-standard
Physical separation	
- fieldbus-side	Standard
- RS-side	Optional
Bus termination resistance	
- Bus-side	-
- RS-side	Adjustable
Fieldbus-baud rate	78 Kbaud
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE® - RS-version or adjustable by a script in the UNIGATE® - SC series.
Diagnosis	8 status LED's
Technology	FTT-10A
Others	
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10...50 Hz, 1 G/50...150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

LONWorks

MPI

MPI is the internal bus system used by the Siemens Simatic® S7®

UNIGATE® - MPI Bridge

The unit UNIGATE® - MPI Bridge adapts a serial interface to the Siemens MPI-bus. In this application it functions as a gateway and can be operated by any S7® 300 – 400.

Technical data

Characteristics	MPI
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 or RS232 and RS422 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	9-pole D-SUB plug (socket)
Physical separation	
- fieldbus-side	Standard
- RS-side	Optional
Bus termination resistance	
- fieldbus-side	Adjustable
- RS-side	Adjustable
Fieldbus-ID	Adjustable
Fieldbus-baud rate	187.5 Kbaud
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE® - RS-version or adjustable by a script in the UNIGATE® - SC series.
Fieldbus data format	Up to 255 byte I/O
Diagnosis	8 status LED's
Technology	ASIC
Others	Direct connection to S7® PLC
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10...50 Hz, 1 G/50...150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

MPI

ProfibusDP

ProfibusDP (Decentralized Periphery), the most common Profibus-version was initiated by Siemens, for use in the fast sensor/actuator field. The cyclical polling of the connected (slave) nodes through a remaining master at the center. ProfibusDP is structured as a line. Using a low transfer rate and repeaters as required, the system may be operated over several kilometers. The main field of application for ProfibusDP is the fast, cyclical data exchange between central automation devices (such as programmable-logic controls) and multiple simple periphery devices (slaves). For this purpose a DP-master polls those slaves, that are assigned to it and places the data at the customer's disposal via a defined interface. In the case where there is only one master on the bus, then time-consuming token-passing is omitted.

UNIGATE® - ProfibusDP

The unit UNIGATE® - ProfibusDP adapts a serial interface to the ProfibusDP according to EN 50 170. It functions as a gateway and operates as ProfibusDP slave. It can be operated by any standard-compliant master.

Technical data

Characteristics	ProfibusDP
Supply voltage	10.8 - 30 V DC
Interface	RS232 and RS485 or RS232 and RS422 (switchable)
Connections	
- plug RS-side	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug bus-side	According to Profibus-standard
Physical separation	
- fieldbus-side	Standard
- RS-side	Optional
Bus termination resistance	
- fieldbus-side	Adjustable
- RS-side	Adjustable
Fieldbus-ID	Adjustable
Fieldbus-baud rate	Up to 12 Mbaud (autodetect)
RS-baud rate	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® - PC-software for UNIGATE® - RS-version or adjustable by a script in the UNIGATE® - SC series.
Fieldbus data format	Up to 244 byte I/O
Diagnosis	9 status LED's
Technology	ASIC
Others	Sync, Freeze GL-certified
Installation	On DIN-rail or installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10...50 Hz, 1 G/50...150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Short-circuit-proof	Yes
Overload protection	Thermal fuse

PROFI® PROCESS FIELD BUS

UNIGATE® IC – the miniature module

In the past, the integration of a fieldbus connection required large amounts of expenditure by the development engineers. On account of the diverse communication systems, it is not enough to compile the right combination of communication hardware on account of their standards and basics the different buses also require the corresponding fieldbus know-how.

Compact and economical
With the series UNIGATE® IC Deutschmann Automation provides the most important fieldbuses on the world market in an IC design. When the series was developed special emphasis was given to the size, costs and ease of integration.

Flexible and efficient
The UNIGATE® IC series is produced in a hybrid format and includes all analogue and digital components which are required for fieldbus implementation. Processor, flash memory, RAM, fieldbus ASIC and all analogue components as well as the optocoupler and power supply are united on the small face. 2 UART and a synchronous serial interface offer the highest flexibility. In the course of a redesign or of a new development the developer only has to take the required space for the IC into consideration and to design in the required connectors for the respective fieldbus. Now the fieldbus implementation is already completed. No change of firmware is necessary as the interface of the UNIGATE® IC series can be adapted to the customer's interface!

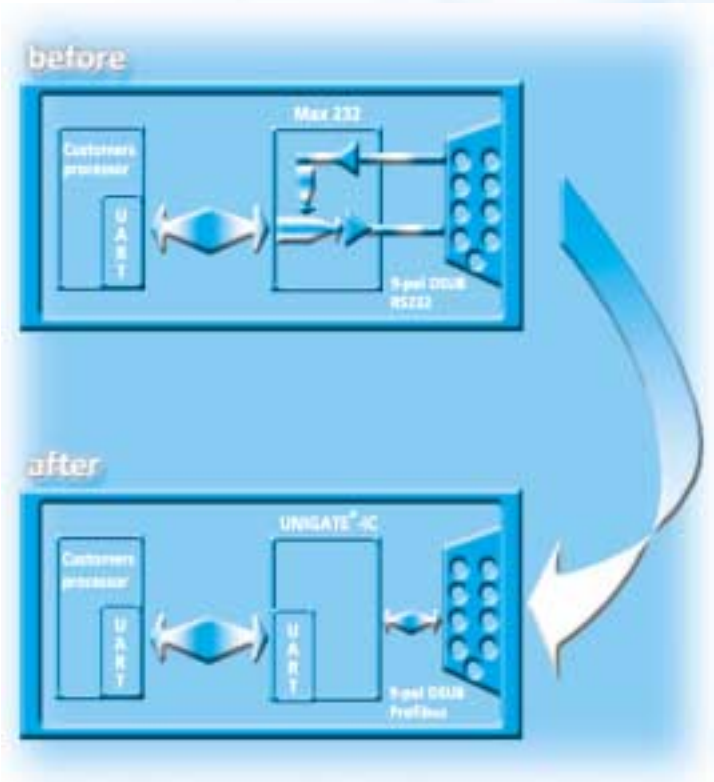
Expandable
An external power expansion e. g. through the connection of a shift register is possible without problems. This way for instance LED's, circuits, digital I/Os and so on can be realized easily.

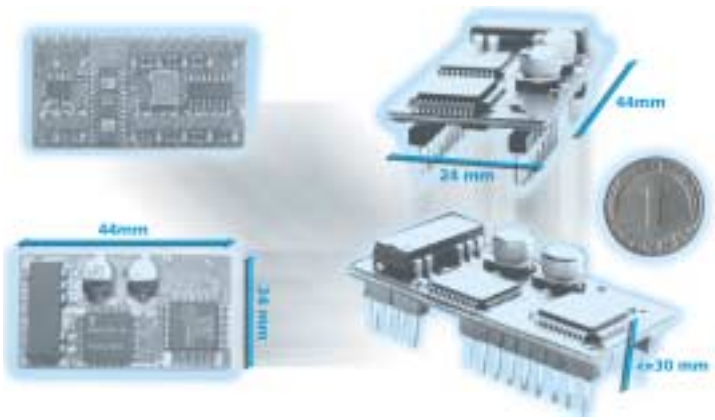
Full compatibility
The UNIGATE® IC series is available for CANopen, DeviceNet, Industrial Ethernet and ProfibusDP. On request further fieldbuses can be accomodated at short notice. The UNIGATE® IC series has a hybrid construction, for which those fieldbus ASICS, that have been in existence and tested for many years, are used and have been proved in our series UNIGATE® RS and SC. As a result highest reliability and compatibility is guaranteed right from the start.

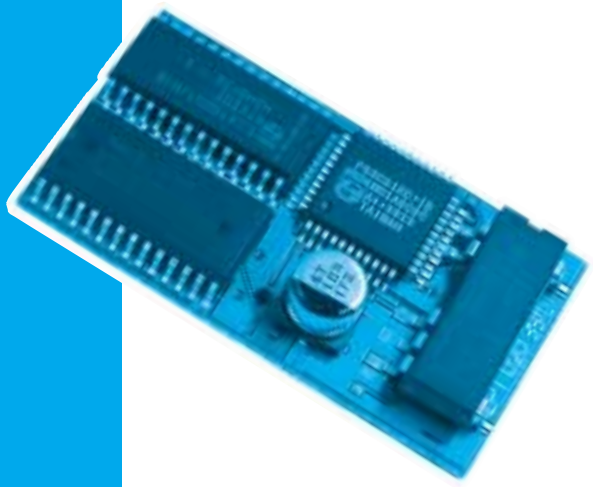
Continuity
All UNIGATE® IC elements are based on a common size format with the same PIN-layout (32DIL). Once this PIN-layout has been designed in to your product you can fit any supported fieldbus system (and the possibility to go from fieldbus to fieldbus). In this case, no software adaptations are required as the scripts are used irrespective of the bus.

Flexible protocol generation
With UNIGATE® IC the Protocol Developer® is used for the quick and economical generation of scripts. The users themselves are in the position to generate this script, however, it is also offered as service by Deutschmann Automation.

Useful tools
For the development or implementation phase, Deutschmann Automation offers helpful tools. In such a way a UNIGATE® IC basic-board is available that allows to make a connection of the UNIGATE® IC to the customer's device within a few minutes. Further details on page 26.







CANopen

CAN allows efficient transmission of digital input and output data as well as data from a higher communication (i. e. parameters). It features extensive error analysis and a highly effective transmission rate.

When properly configured CAN is ideal for geographically small real-time systems, with distributed intelligence and high reliability requirements. Beyond this various potential application arise for systems where this specific protocol characteristics are well suited.

CAN has a high degree of transmission reliability. The arbitration, filtering of messages, error detection and error restriction as well as the confirmation of receipt are implemented in the hardware.

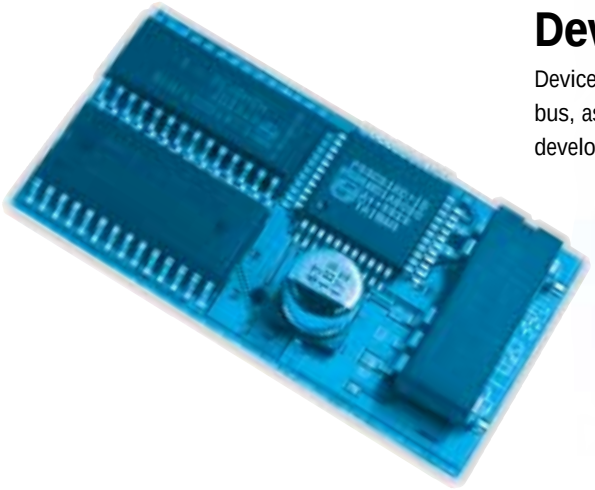
UNIGATE® IC - CANopen

The UNIGATE® IC - CANopen is a complete CANopen system that only needs to be connected to the processor of the corresponding device. In addition the required fieldbus connectors have to be taken into consideration. In the simplest case you just have to put the UNIGATE® IC where the previous RS-driver has been and the implementation is complete. With the Protocol Developer® the data exchange between the device and the UNIGATE® IC or between the fieldbus and the UNIGATE® IC is generated in script form. Further information on the Protocol Developer® and on scripts can be found on the pages 6 and 7.

For implementation tools such as a UNIGATE® IC – basic board UNIGATE® IC - RS232-adapter or UNIGATE® IC – RS485-adapter are available. With these boards an experimental setup with your device can be realized within a few minutes. A description of these tools can be found on page 26.

Technical data

Characteristics	CANopen
Supply voltage	5 V ± 5%, max. 250 mA DC
Interface	2 UART-interfaces, 1 synchronous serial interface
Physical separation	
- fieldbus-side	Standard
FieldbusID	Adjustable (via script)
Fieldbus-baud rate	Up to 1 Mbaud (adjustable via script)
UART-baud rate	Up to 625 Kbaud (adjustable via script)
Fieldbus data format	2 SDO, 10 PDO
Technology	SJA1000
Others	E.g. digital I/Os, analogue signals, shift registers,
	LED's, switches, etc. can be connected externally
Installation	32DIL
Dimensions	44 x 20 x 24 mm (W x H x D)
Weight	Approx. 14 g
Storage temperature	-40°C...+125°C
Operating temperature	-40°C...+85°C
Biult-in position	Any



DeviceNet

DeviceNet is a CAN-based low-priced fieldbus, as costly wiring is eliminated. It was developed by Allen Bradley (Rockwell Automation). Mainly it is used to interconnect industrial plant.

UNIGATE®IC - DeviceNet

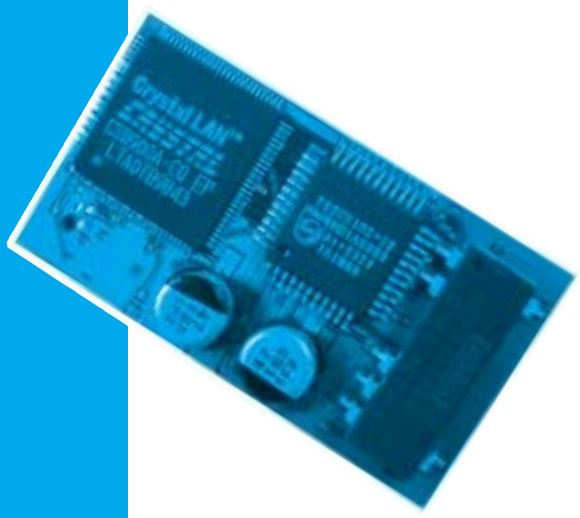
The UNIGATE® IC - DeviceNet is a complete DeviceNet system that only needs to be connected to the processor of the corresponding device. In addition the required fieldbus connectors have to be taken into consideration. In the simplest case you just have to put the UNIGATE® IC where the previous RS-driver has been and the implementation is complete. With the Protocol Developer® the data exchange between the device and the UNIGATE® IC or between the fieldbus and the UNIGATE® IC is generated in script form. Further information on the Protocol Developer® and on scripts can be found on the pages 6 and 7.

For implementation tools such as a UNIGATE® IC – basic board UNIGATE® IC - RS232-adapter or UNIGATE® IC – RS485-adapter are available. With these boards an experimental setup with your device can be realized within a few minutes. A description of these tools can be found on page 26.

Technical data

Characteristics	DeviceNet
Supply voltage	5 V ± 5%, max. 250 mA DC
Interface	2 UART-interfaces, 1 synchronous serial interface
Physical seperation	
- fieldbus-side	Standard
Fieldbus-ID	Adjustable (via script)
Fieldbus-baud rate	Up to 500 Kbaud (adjustable via script)
UART-baud rate	Up to 625 Kbaud (adjustable via script)
Fieldbus data format	Group 2 slave
Technology	SJA1000
Others	Change of state, Bit-strobe, polling
	E.g. digital I/Os, analogue signals, shift registers,
	LEDs, switches etc. can be connected externally
Installation	32DIL
Dimensions	44 x 20 x 24 mm (W x H x D)
Weight	Approx.14 g
Storage temperature	-40°C...+125°C
Operating temperature	-40°C...+85°C
Build-in position	Any

DeviceNet



Ethernet

Ethernet was developed in the mid-70s, to link a large number of equal stations over different communication levels (optical fiber cable, two-wire lines, coaxial cables).

Ethernet alone only offers a data transport from a sender to one or more receivers. No confirmation is issued for correctly received packets and errors are not corrected. No guarantee of the receipt of the complete data is given. These functions have to be served by protocol layers of overriding importance. For this the TCP/IP-protocol is particularly suitable.

UNIGATE® IC - Industrial Ethernet

The UNIGATE® IC - Industrial Ethernet is a complete Industrial Ethernet system that only needs to be connected to the processor of the corresponding device. In addition the required fieldbus connectors have to be taken into consideration. In the simplest case you just have to put the UNIGATE® IC where the previous RS-driver has been and the implementation is complete. With the Protocol Developer® the data exchange between the device and the UNIGATE® IC or between the fieldbus and the UNIGATE® IC is generated in script form. Further information on the Protocol Developer® and on scripts can be found on the pages 6 and 7.

For implementation tools such as a UNIGATE® IC – basic board UNIGATE® IC - RS232-adapter or UNIGATE® IC – RS485-adapter are available. With these boards an experimental setup with your device can be realized within a few minutes. A description of these tools can be found on page 26.

For the different supported serial transmission protocols, see table.

Technical data

Characteristics	Ethernet 10 BaseT
Supply voltage	5 V ± 5%, max. 250 mA DC
Interface	2 UART-interfaces, 1 synchronous serial interface
Physical seperation	
- Ethernet-side	Standard
TCP/IP-address	Adjustable (via script)
Baud rate	10 Mbaud
UART-baud rate	Up to 625 Kbaud (adjustable via script)
Support Ethernet-protocols	UDP, TCP/IP, http
Technology	CS8900
Others	E.g. digital I/Os, analogue signals, shift registers,
	LED's, switches and so on can be connected externally
Installation	32DIL
Dimensions	44 x 20 x 24 mm (W x H x D)
Weight	Approx.14 g
Storage temperature	-40°C...+125°C
Operating temperature	-40°C...+85°C
Built-in position	Any

ProfibusDP

ProfibusDP (Decentralized Periphery), the most common Profibus-version was initiated by Siemens, for use in the fast sensor-actuator field. The cyclical polling of the connected (slave) nodes through a remaining master at the center. ProfibusDP is structured as a line. Using a low transfer rate and repeaters as required, the system may be operated over several kilometers. The main field of application for ProfibusDP is the fast, cyclical data exchange between central automation devices (such as programmable-logic controls) and multiple simple periphery devices (slaves). For this purpose a DP-master polls those slaves that are assigned to it and places the data at the customer's disposal via a defined interface. In the case where there is only one master on the bus, then the time-consuming token-passing is omitted.

UNIGATE® IC - ProfibusDP

The UNIGATE® IC - ProfibusDP is a complete ProfibusDP system that only needs to be connected to the processor of the corresponding device. In addition the required fieldbus connectors have to be taken into consideration. In the simplest case you just have to put the UNIGATE® IC where the previous RS-driver has been and the implementation is complete. With the Protocol Developer® the data exchange between the device and the UNIGATE® IC or between the fieldbus and the UNIGATE® IC is generated in script form. Further information on the Protocol Developer® and on scripts can be found on the pages 6 and 7.

For implementation tools such as a UNIGATE® IC – basic board UNIGATE® IC - RS232-adapter or UNIGATE® IC – RS485-adapter are available. With these boards an experimental setup with your device can be realized within a few minutes. A description of these tools can be found on page 26.

Technical data

Characteristics	Profibus DP
Supply voltage	5 V ± 5%, max. 250 mA DC
Interface	2 UART-interfaces, 1 synchronous serial interface
Physical seperation	
- fieldbus-side	Standard
Fieldbus-ID	Adjustable (via script)
Baud rate	Up to 12 Mbaud (autodetect)
UART-baud rate	Up to 625 Kbaud (adjustable via script)
Fieldbus data format	Up to 96 byte I/O
Technology	ASIC
Others	Sync, Freeze, e. g. digital I/Os, analogue signals, shift registers,
	LED's, switches etc. can be connected externally
Installation	32DIL
Dimensions	44 x 9 x 24 mm (W x H x D)
Weight	Approx. 7 g
Storage temperature	-40°C...+125°C
Operating temperature	-40°C...+85°C
Built-in position	Any

PROFI® PROCESS FIELD BUS

Available versions of the series UNIGATE® SC, RS and IC

Performance characteristics/ fieldbus	ARCNET	CANopen	DeviceNet	Ethernet 10 BaseT
Device				
UNIGATE® RS232/485 Version with integrated standard protocol	✔	✔	✔	✔
UNIGATE® RS232/422 Version with integrated standard protocol	–	✔	✔	✔
UNIGATE® SC-232/485 Version for scripts	✔	✔	✔	✔
UNIGATE® SC-232/422 Version for scripts	–	✔	✔	✔
UNIGATE® SC-232/485 - Debug Version for testing scripts	✔	✔	✔	✔
UNIGATE® IC Version for scripts	❹	✔❶	✔❶	✔❷
Device options for t				
D9 9-pole D-SUB + 2-pole screw-plug-connector (for voltage supply) instead of 5-pole screw-plug-connector	☒	☒	☒	☒
AUI Port for Ethernet	–	–	–	☒
485 Version for ARCNET	✘	–	–	–
Coax Version for ARCNET	✘	–	–	–
GT Galvanic isolation for the RS232/485 or RS232/422-side	☒	☒	☒	☒
PL circuit board version without DIN-rail module or top cover	☒	☒	☒	☒
PD circuit board version without DIN-rail module but with top cover	☒	☒	☒	☒
AG Gateway installed in an aluminum die-cast housing (for details on the housing, see accessoirs)	☒	☒	☒	☒
EG Gateway installed in a high-grade steel housing (for details on the housing, see accessoirs)	☒	☒	☒	☒
KG Gateway installed in a polycarbonate housing (for details on the housing, see accessoirs)	☒	☒	☒	☒
Customized design	☒	☒	☒	☒
Starter- and developerkits and tools fo				
Starterkit for UNIGATE®RS232/485 Version	–	✔	✔	✔
Developerkit SC for UNIGATE®SC232/485 Version (includes Debug-gateway for the testing of scripts)	–	✔	✔	✔
Fieldbus Add-On for the series Unigate® IC (includes a UNIGATE® IC and a UNIGATE® IC-basic board)	–	✔	✔	✔
Developerkit IC for the series UNIGATE®IC (includes a UNIGATE® IC and a UNIGATE® IC-basic board)	❹	✔❶	✔❶	✔❷
UNIGATE®IC-basic board	❹	✔❶	✔❶	✔❷

✔ available version ✘ optional without extra charge ☒ optionally available for an extra charge ❶ available from February 2002

Ethernet 10/100 BaseT	INTERBUS 8 Byte	INTERBUS 32 Byte	LONWorks	MPI	ProfibusDP
version					
✔	✔	✔	✔	✔	✔
✔	✔	✔	✔	✔	✔
–	✔	✔	✔	✔	✔
–	✔	✔	✔	✔	✔
–	–	✔	✔	–	✔
❹	❹	❹	✔❸	❹	✔
he series RS and SC					
☒	☒	☒	☒	☒	☒
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
☒	☒	☒	☒	☒	☒
☒	☒	☒	☒	☒	☒
☒	☒	☒	☒	☒	☒
☒	☒	☒	☒	☒	☒
☒	☒	☒	☒	☒	☒
☒	☒	☒	☒	☒	☒
☒	☒	☒	☒	☒	☒
or the series UNIGATE® RS, SC and IC					
–	✔	✔	✔	–	✔
–	–	✔	✔	–	✔
–	–	✔	✔	–	✔
❹	❹	❹	✔❸	❹	✔
❹	❹	❹	✔❸	❹	✔

❷ available from April 2002 ❸ available from the 2nd/3rd quarter of 2002 ❹ implementation can be carried out on request

Connect fieldbus with fieldbus

Time and again a requirement turns up to connect devices that are equipped with the one fieldbus type to another fieldbus.

Provided that it is a slave/slave application, the corresponding gateways of the UNIGATE® RS or UNIGATE® SC series can be coupled via the serial interface. In these applications the data exchange can be carried out e. g. via the transparent mode.

This can also be achieved via the script version.

Technical data

Characteristics	CANopen	ProfibusDP
Supply voltage	10.8 - 30 V DC	
Interface	According to CANopen-standard	According to Profibus-standard
Connections	9-pole D-SUB	9-pole D-SUB to Profibus-standard
Galvanical separation	Standard	
Bus termination resistance	Adjustable	
Fieldbus-ID	Adjustable	
Fieldbus-baud rate	Up to 1 Mbaud (by DIP-switch)	Up to 12 Mbaud (autodetect)
Fieldbus data format	2 SDO, 10 PDO	Up to 96 byte I/O
Diagnosis	6 status LEDs	3 status LED's
Technology	SJA1000	ASIC
Others	Sync, Freeze	
Installation	DIN-rail mounting or installed in a housing	
Type of protection	IP24 or IP65-67 when installed in a housing	
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version	
Weight	Approx. 300 g	
Storage temperature	-25°C...+70°C	
Operating temperature	0°C...+45°C without forced convection 0°C...+65°C with forced convection	
Relative air humidity	Max. 80% not condensing No corrosive atmosphere	
Shock Vibration	15 G/11 ms 0.15 mm/10…50 Hz, 1 G/50…150 Hz	
Built-in position	Any	
Protection against incorrect polarity	Yes	
Short-circuit-proof	Yes	
Overload protection	Thermal fuse	

CANopen (master) - ProfibusDP (slave)

Currently on the market you can find a wide selection of components equipped with a CANopen interface. Due to the rapid expansion of Profibus applications, the task of connecting these units to an existing Profibus network turns up frequently.

This task can be elegantly solved with the UNIGATE® CANopen – ProfibusDP.

The unit serves as a coupler between a CANopen bus system and a ProfibusDP according to EN 50 170. The gateway acts on the Profibus-side as a slave and works on the CANopen-side as master. Using a mapping technique the user is in the position to determine which data is transferred from CANopen on ProfibusDP and vice versa. This mapping takes place in the PC tool WINGATE®.

RS

Various controls and systems are available on the market that operate with very different protocols. In order for these protocols to be cross-linked serially, a protocol conversion unit becomes indispensable.

UNIGATE® - RS

The unit UNIGATE® - RS – RS takes on this task. The two interfaces RS232 and RS485 or RS232 and RS422 are included at the serial side A and can be switched over on board. At the serial side B either the interface RS232 or RS485 is available.

Technical data

Characteristics	UNIGATE® - RS232 UNIGATE® - RS485
Supply voltage	10.8 - 30V DC
Interface RS-side A	RS232 and RS485 or RS232 and RS422 (switchable)
Interface RS-side B	RS232 or RS485
Connections	
- plug RS-side A	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug RS-side B	9-pole D-SUB-connector (socket)
Physical separation	
- RS-side B	Standard
- RS-side A	Optional
Bus termination resistance	
- RS-side A	Adjustable
- RS-side B	Adjustable
Rotary coding switch	
- RS-side A	Available
- RS-side B	Available
Fieldbus-baud rate	Up to12 Mbaud (autodetect)
RS-baud rate (both sides)	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® -PC-software for UNIGATE® -RS-version or adjustable by a script in the UNIGATE® -SC series.
Diagnosis	8 status LEDs
Technology	ASIC
Installation	On Din-rail installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10…50 Hz, 1 G/50…150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Shot-circuit-proof	Yes
Overload protection	Thermal fuse

RS

Various controls and systems are available on the market that operate with very different protocols. In order for these protocols to be cross-linked serially, a protocol conversion unit becomes indispensable.

UNIGATE® - RS

The unit UNIGATE® - RS – RS takes on this task. The two interfaces RS232 and RS485 or RS232 and RS422 are included at the serial side A and can be switched over on board. At the serial side B either the interface RS232 or RS485 is available.

Technical data

Characteristics	UNIGATE® - RS232 UNIGATE® - RS485
Supply voltage	10.8 - 30V DC
Interface RS-side A	RS232 and RS485 or RS232 and RS422 (switchable)
Interface RS-side B	RS232 or RS485
Connections	
- plug RS-side A	5-pole screw-plug-connector (optionally 9-pole D-SUB)
- plug RS-side B	9-pole D-SUB-connector (socket)
Physical separation	
- RS-side B	Standard
- RS-side A	Optional
Bus termination resistance	
- RS-side A	Adjustable
- RS-side B	Adjustable
Rotary coding switch	
- RS-side A	Available
- RS-side B	Available
Fieldbus-baud rate	Up to12 Mbaud (autodetect)
RS-baud rate (both sides)	For RS232 max. 57.6 Kbaud, RS485/RS422 max. 625 Kbaud. Baud rate for WINGATE® -PC-software for UNIGATE® -RS-version or adjustable by a script in the UNIGATE® -SC series.
Diagnosis	8 status LEDs
Technology	ASIC
Installation	On Din-rail installed in a housing
Type of protection	IP24 or IP65-67 when installed in a housing (optional)
Dimensions	90 x 125 x 55 mm (W x H x D) DIN-rail version
Weight	Approx. 300 g
Storage temperature	-25°C...+70°C
Operating temperature	0°C...+45°C without forced convection
	0°C...+65°C with forced convection
Relative air humidity	Max. 80% not condensing
	No corrosive atmosphere
Shock	15 G/11 ms
Vibration	0.15 mm/10…50 Hz, 1 G/50…150 Hz
Built-in position	Any
Protection against incorrect polarity	Yes
Shot-circuit-proof	Yes
Overload protection	Thermal fuse

Starterkit – your driving license to the fieldbus of your choice –

Starterkit - All in one
With the starterkit Deutschmann Automation offers the possibility to connect the RS232/ RS485/RS422 interface of your device to a fieldbus of your choice fast and without problems.

In our starterkit you get all what you need to start your fieldbus.

For this you require the UNIGATE®, the software WINGATE®, accessories, such as cables, a fieldbus dongle, a power supply as well as a screwdriver.

Simulate your unit on your PC
You will get familiar with the function and the operation mode of your UNIGATE® step by step by means of a software introduction giving you written instructions on your PC - so you can control your unit quickly and easily, where you need it with the fieldbus of your choice.

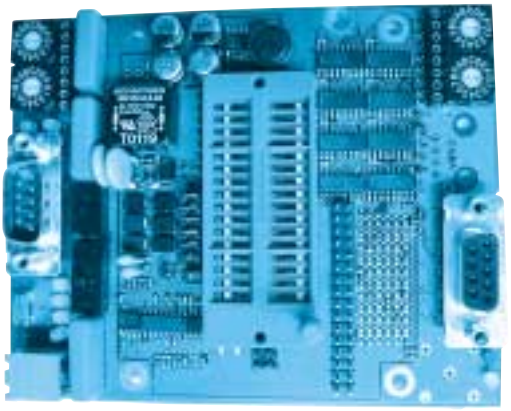
Starterkit – connects your unit with a fieldbus of your choice
If you already have your “driver’s license” then just connect the UNIGATE® and you can now work with your device without problems. You will be in the position to carry out adjustments that may be required. The UNIGATE® now connects the device and the fieldbus with your individual parameters.

Starterkits to Profibus, INTERBUS, CANopen, DeviceNet, Ethernet and LONWorks are available.

Developerkit

The **developerkit** SC contains a script capable debug-gateway for the selected fieldbus, a plug-in power supply for the UNIGATE® as well as a cable for connecting the gateway with the PC and it has a further serial connection for your product. Software and documentation complements the package. Also included is a free 3 month hotline service. With Protocol Developer® you write your script quickly and with the debug gateway you test it efficiently.

The **developerkit** IC contains a UNIGATE® IC for the selected fieldbus, a UNIGATE® - IC base-board to plug in the UNIGATE® IC, a plug-in power supply for the UNIGATE® as well as the connection cables as described before. The base-board contains a socket to plug in the IC, all RS and fieldbus connectors, switches and LED’s. In fact you cannot tell the difference from “regular” UNIGATE®. With the base-board you can connect your UNIGATE® IC to your product within a few minutes in order to prepare your implementation. You have direct access to all the functions of the IC via the base-board.



As a bonus **Add-On** accessory to the developerkit we offer a master simulation of the fieldbus-side. In addition to the corresponding fieldbus master simulator you receive the required connecting cable to the PC and the PC software for the representation of the RS and the fieldbus data.

Housing versions

Deutschmann offers 3 different housing versions:
Aluminum die-cast, high-grade steel and polycarbonate.

Aluminium housing

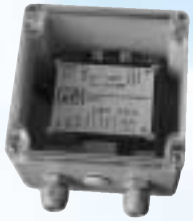
- Housing system with IP66 protection
- High EMC-screen behavior for protection against electro-magnetic radio interference
- Optimal installation for UNIGATE® RS/SC
- Overall dimension: 120 x 122 x 80 mm
- Material: Al Si 12, DIN 1725
- Type of protection: IP66, EN 60529

High-grade steel housing

- High-quality housing system for aggressive environments and hygiene fields
- Resistant industrial housing with IP66 protection
- Overall dimension: 150 x 150 x 78 mm
- Construction with bent - over sealing lip (gutter principle)
- High-quality material 1.4404 (316L)
- Material high-grade steel 1,25 mm,1.4404/316L
- Type of protection IP66 according to EN 60529

Polycarbonat housing

- Polycarbonate housing with transparent lid
- Overall dimension: 120 x 122 x 85 mm
- Body of housing: thermoplastic coated
- Lid and base secured by stainless steel screws
- Sealing type: key-feather-system with CR-toroidal sealing
- Type of protection IP66 according to EN 60529



Special competitor advantages of Deutschmann gateways

Customer satisfaction and the best possible quality of our products and services are our primary objective. Many customers – among them a large number of established large worldwide enterprises - show that we meet their demands. A summary of the arguments that Deutschmann stand for is as follows:

- ISO 9001-certified ✔
- Customer-oriented ✔
- 10 years successfully working with the communications systems ✔
- Competence and know-how ✔
- Complete fieldbus coverage ✔
- Common construction and handling of all product series ✔
- Customized protocol implementation ✔
- Protocol can be implemented by the customers themselves ✔
- Standard protocols ✔
- Detailed documentation available as manuals in German and English ✔
- The very latest internet – with detailed download area ✔
- Market and order quantity oriented price policy ✔
- Sliding-scale prices ✔
- Training offer arranged to your requirement ✔
- Competent technical consultation and fast help via our hotline service ✔
- Customized version and packaging ✔
- Extensive marketing and service network ✔

For further information log on to our website at

www.deutschmann.de

Efficiency and high reliability make our products indispensable all over the world.

Our complete service offers you everything:

- From advice before purchase through user support
- From the telephone hotline or Internet & e-mail to on-site service
- From the technical product training through to the extensive manual

You purchase a comprehensive service.

The most important aspect in the production of all our products is precision and quality! This applies both to the individual components and the finished product.

We are there for you!

Benefit from the dynamism, efficiency and creativity of a worldwide operating company because we offer convincing advantages!

- **Longevity of innovation**
  Your product selection will also be supported in the long term.
- **Innovation strength**
  All requirements of our applications will be included in innovations and new product concepts from the very beginning.
- **Export-reliability**
  Worldwide acceptance due to a major name – very important in the hotly contested market for machines and plant.

examined safety • guaranteed quality •

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