



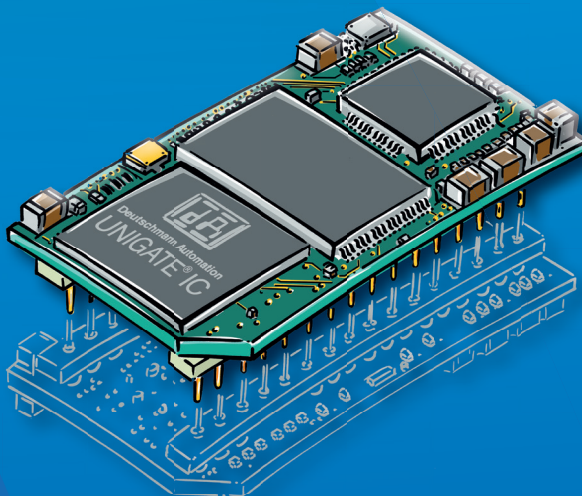
Deuschmann
your ticket to all buses

Embedded Solutions

UNIGATE®

IC/IC2

FAST EFFICIENCY



EtherCAT®

PROFI®
NET

EtherNet/IP®

PROFI®
BUS

CANopen®

DeviceNet®

ETHERNET TCP/IP

LONWorks

Modbus

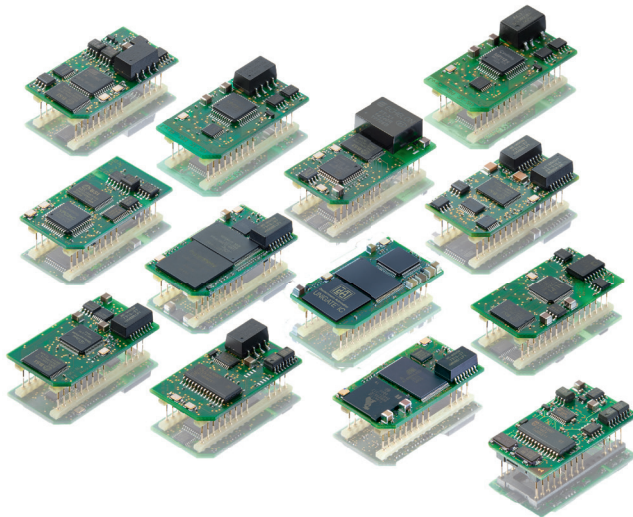
- > New processor generation
- > DIL32
- > Norm compliant
- > Certified
- > Programmable
- > Designed & manufactured in Germany

UNIGATE IC/IC2

Fast efficiency

Ready-to-install

Integrate without much development effort



The UNIGATE® IC is a ready to install fieldbus- respectively industrial Ethernet node in DIL 32 design. The enormous reduction of the development effort up to 70-80% holds a significant advantage in time-to-market.

The hardware development is reduced to the integration of the IC-socket and bus specific connectors.

Covering an area of only 45 x 25 mm, the module includes all necessary components such as microcontroller, Flash, RAM, Ethernet switches or fieldbus ASIC as well as octocoupler and bus driver. It can be connected to the microcontroller of the terminal device, or can operate as stand-alone.

The module handles the entire bus or Ethernet traffic and relieves the terminal device processor of this non-trivial task. The protocol of the terminal device will be implemented with a script. The free of cost PC-tool "Protocol Developer" generates the script and adapts it perfectly to the final product and the requirements of the bus.

Is your host working with a standard protocol such as Modbus? Then it's even easier, because the Protocol Developer has the protocols Modbus RTU / ASCII as master or slave, and also the 3964 (R) protocol with complete handshake and DLE doubling is already included in a simple script command. Changes to the firmware of the terminal are not necessary.

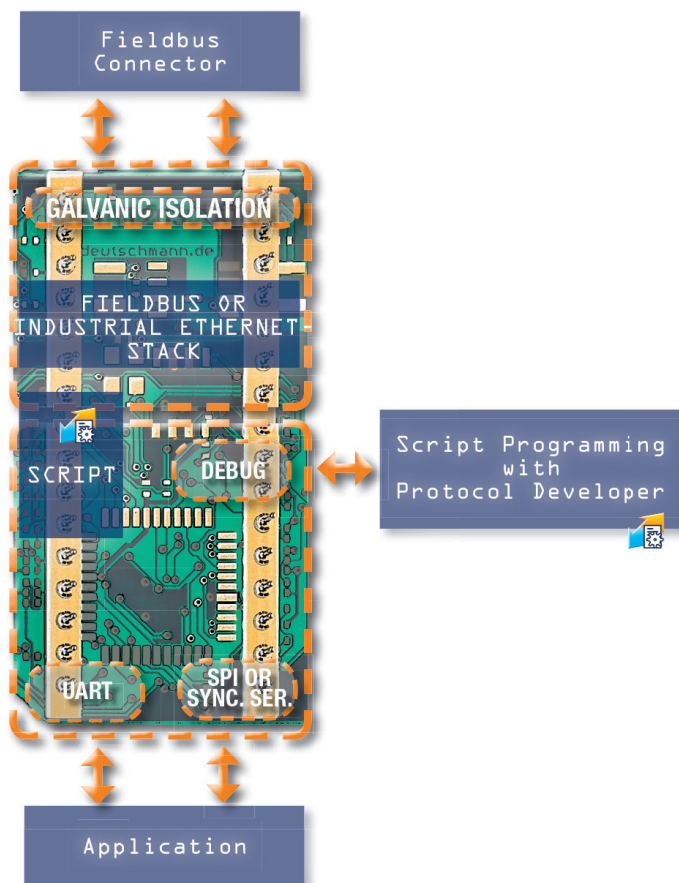
The hardware and software interfaces of the Deutschmann UNIGATE® IC series are standardized and functionally the same. A guarantee for the interchangeability between the different bus versions.

Design-In

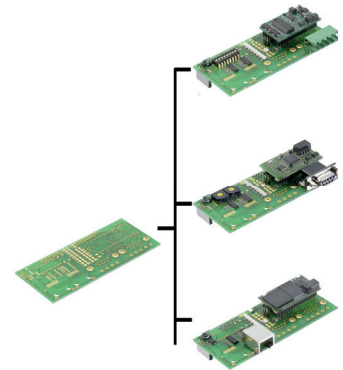
Deutschmann also offers UNIGATE® IC variants as a design-in solution. Design-in allows the customer to fit the design of the module to their needs and optimize for their own system. You're going to use our always further developed firmware.

- ▼ 70-80% reduced development effort
- ▼ Time-to-Market gain
- ▼ Assembly consists of standard components
- ▼ Connection to the host processor via UART interface
- ▼ Expandable via the synchronous serial interface e.g. for
 - ▼ „Stand-alone“-mode (without processor applications)
 - ▼ Shift-register connection (e.g. LED activation, read-in of switch positions)
 - ▼ Analog/digital converter (e. g. analog sensor, 4-20mA current loop)
- ▼ Easy integration into your electronics
- ▼ Adaptation of the terminal device firmware is dropped
- ▼ All active components are included except UNIGATEs without transformers
- ▼ Integrated isolation to FB interface
- ▼ Coverage of the major fieldbus and industrial Ethernet protocols with just one development

The Deutschmann UNIGATE® IC is extremely well suited for the use with terminal devices out of the automation technology. It does not matter whether it is a complex control or a simple actuator or sensor. Even control components – outside the classical automation technology – can be connected to the fieldbus world or Ethernet based buses with the UNIGATE® IC.



Application example



Example of a **customized board**. This board can be fitted for different fieldbuses.

Features

The Deutschmann UNIGATE® IC provides a complete fieldbus- respectively industrial Ethernet interface (Slave). The functionality of Ethernet based models includes a FTP- and a web server.

Benefit

A key benefit of the UNIGATE® IC series is the scripting ability. As a result, changes on the terminal device are no longer required. The flexibility of the script language provides the user freedom and opportunities; from a simple transparent data transfer through generating complex protocols up to preparation of the data. Standard protocols such as Modbus RTU (Master/ Slave), Modbus ASCII are included as complete script command.

UNIGATE IC/IC2

Technical overview

Stand-alone operation

The connection to terminal devices without a processor can be done via the clocked shift-register interface (synchronous serial interface / SPI). It allows the extension of the IC for digital and analog inputs and outputs through the port of shift registers, DA- or AD-converters. This way LEDs can be accessed, switch positions queried or analog signals read-in or read-out. The maximum input and output register width is each 256 bits.

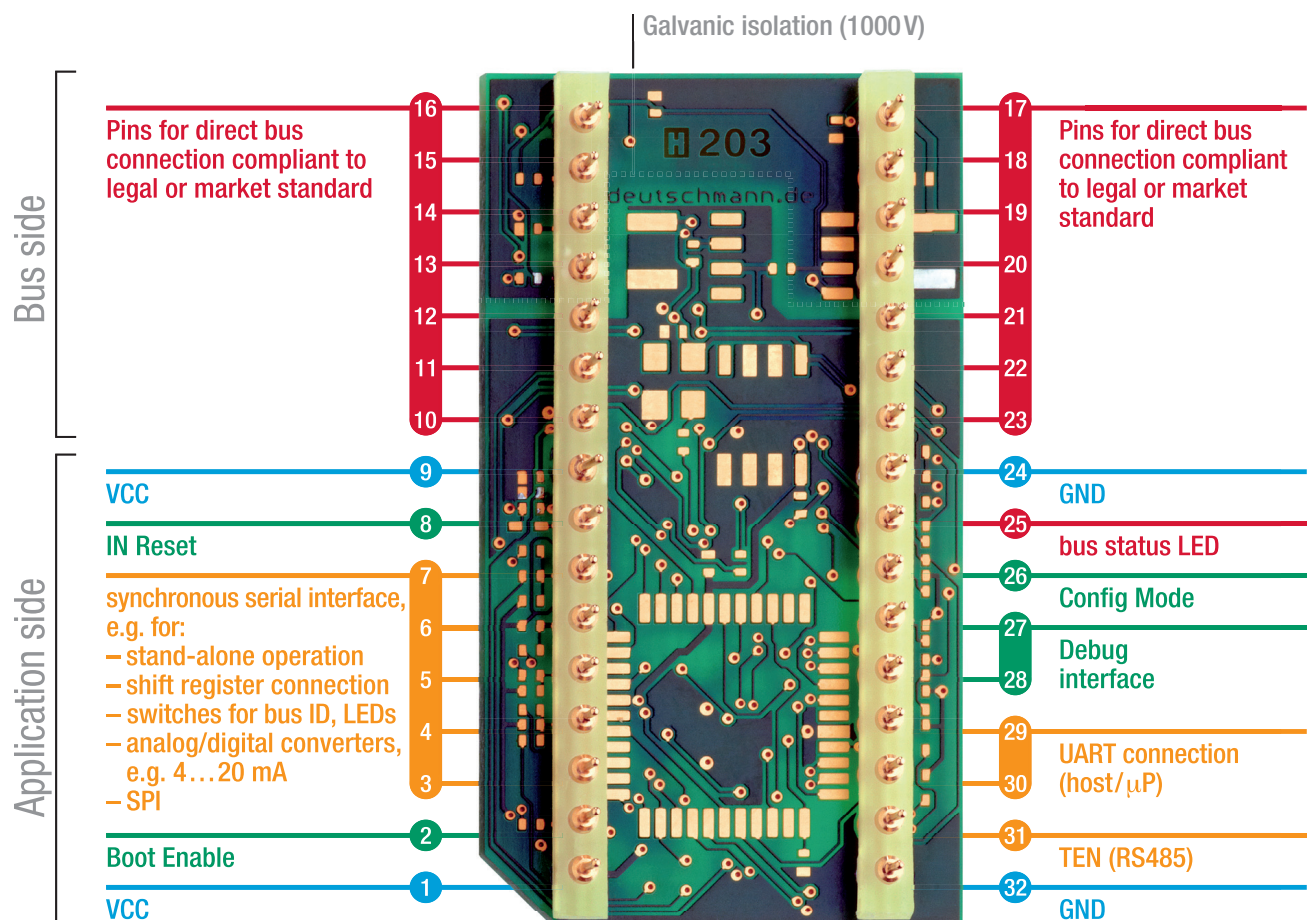
Processor-connection

For the use in systems with its own microprocessor, the UNIGATE® IC2 is connected via a UART interface with the processor of the final product. The communication between the device processor and the UNIGATE® IC2 is controlled by the script. With script technology it is possible to simulate complex protocols data can be processed and cached.

The key advantage: The firmware of the terminal device does not need to be touched!

Debug interface

The debug interface of the UNIGATE® IC can be used to test a script, or for diagnostic purposes.



New series UNIGATE IC2



UNIGATE® IC2 - The fast one

The new embedded series UNIGATE® IC2 is equipped with a Cortex-M4 controller and achieves much higher transfer rates for communication via SPI or UART.

The script execution time decreases by a factor of 50-80, depending on the commands used. As a result, the UNIGATE® IC2 are able to process even large scripts very quickly.

With simple scripts, execution times in the microsecond range are possible.

The SPI bus achieves a transfer rate of 12 Mbit/s in Master mode. Further increases up to the maximum transmission rate of 33 Mbit/s are being tested. In slave mode, 10 Mbit/s are achieved. The UART interface supports baud rates of up to 6 Mbaud.

The UNIGATE® IC2 series is PIN-compatible with the still available series UNIGATE® IC(1). The scope of the firmware is identical and existing scripts can be reused. Only due to the changed timing are u.U. minor adjustments necessary.

The Deutschmann scripting language and the associated development environment "Protocol Developer" are unchanged and of course also used in the new UNIGATE® IC2 series.

UNIGATE® IC2 is now available in the PROFIBUS, EtherCAT, Fast Ethernet/ModbusTCP and PROFINET version. Further bus variants will follow and will be announced separately.

The heart of the Deutschmann UNIGATE® / Gateway series

- ▼ Flexible solutions are needed. With the usual configuration tools for protocol converters and gateways, the user has to work with the specifications of the manufacturer. To change this unfortunate condition Deutschmann developed its own script language as early as in 1999.
- ▼ The user only needs to process the data of the bus and barely has to look after the special characteristics of the fieldbus.
- ▼ The Protocol Developer supports a variety of functions to fit the received or to send data into the right “form”. Mathematics- or memory processing commands are known from other Script languages and are easy to understand implemented, even for laymen.
- ▼ Also the neatly arranged selection of examples enables a quick introduction to laymen.
- ▼ Another highlight is the included debug functionality. The common functionalities such as Single-step, running and stopping on breakpoint are available.
- ▼ Great emphasis is put on data security. You can activate special error detection routines on request.

What exactly is a script?

A script is a sequence of commands executed in a given order. A command is always a small, firmly outlined task. The script language also knows commands that control the program flow in the script, which is why you can assemble even complex processes with these simple commands.

Command groups overview

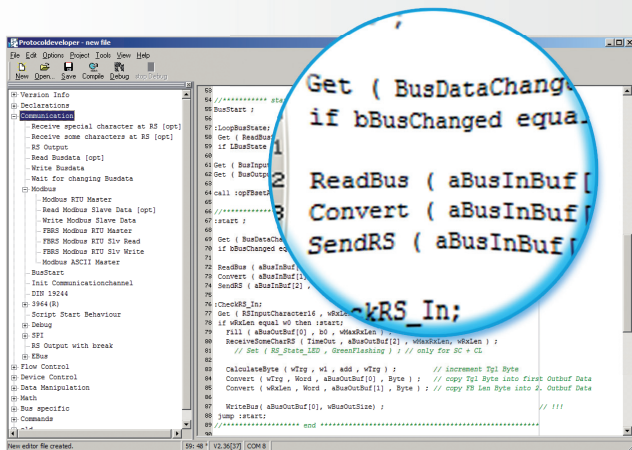
Declarations	variable declaration
Flow Control	Subfunction calls, jumps, branches
Math	Mathematical functions, data conversions
Communication	Send and receive data
Device Control	Set and read parameters. For example the baud rate for the serial interface.
Bus Specific	bus-specific values

The script programming gives you a flexible possibility to solve your communication task. On both sides, i.e., on the RS-side and on the bus side, data can be edited, converted

The amount of tasks which can be handled with a script is infinite.

Scripts are imaginable which

- automatically determine a participants data at the serial interface, edit this data and then outline it in the bus
- only carry out action if the bus data is altered
- carry out timed actions
- share communication states
- exchange the data between 2 serial participants (RS485) and present the state in the bus



Comfortable script commands

Wide range of functions

Marketable protocols are included as a script command

Quick induction

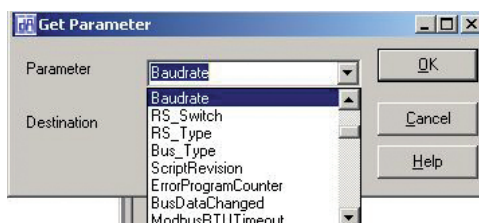
Picture 1: script example in the Protocol Developer

The 1x1 of the Protocol Developer

Picture one shows you an example script in the editor surface and the tree view of all available commands (Command-Tree). It is the tool for easy script generating for our script gateways, its operation is aimed on it.

In addition to programming via text commands, the Command-Tree also offers dialogue-based programming.

If defined, and necessary for the correlating command, a dialogue goes through the command parameters (picture 2) and inserts the resulting command into the script.

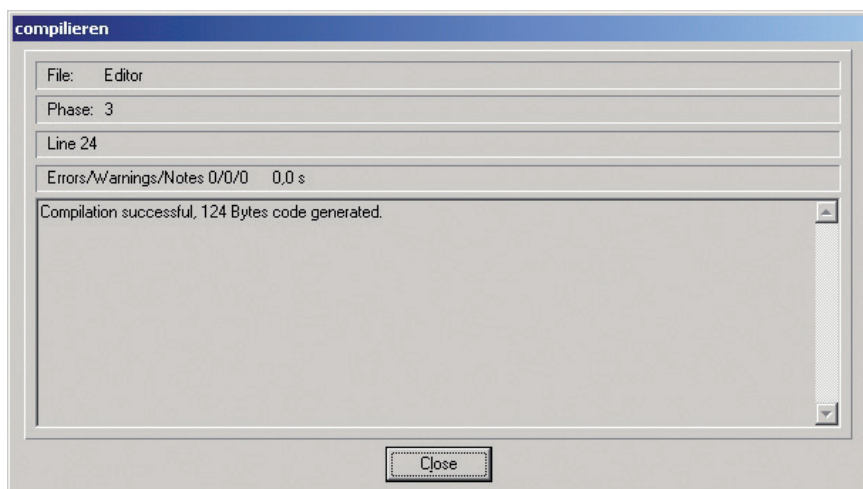


Picture 2: parameter

Compile

Before a script can be loaded into a UNIGATE®, it has to be compiled. The resulting code is very storage efficient. So even extensive a script fits comfortably in the internal memory of the UNIGATE®.

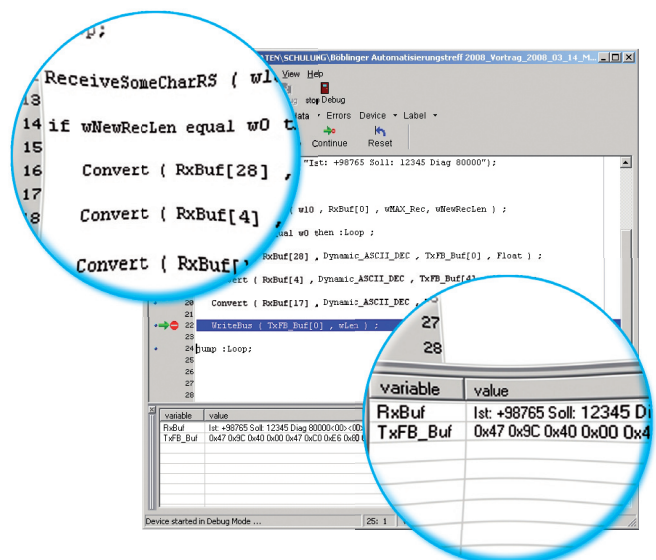
The loading of a script into the device can be done directly from the Protocol Developer. For serial programming a script-download tool is available.



Debuggen

All UNIGATE® devices have a built-in debugging interface. A special debug software is not needed. To test even extensive scripts quickly you'll find many functions for comfortable debugging, such as

- ▶ Breakpoints
- ▶ Single-step
- ▶ Display of the variables and their values
- ▶ Error display



Picture 4: debug window with variables and their content

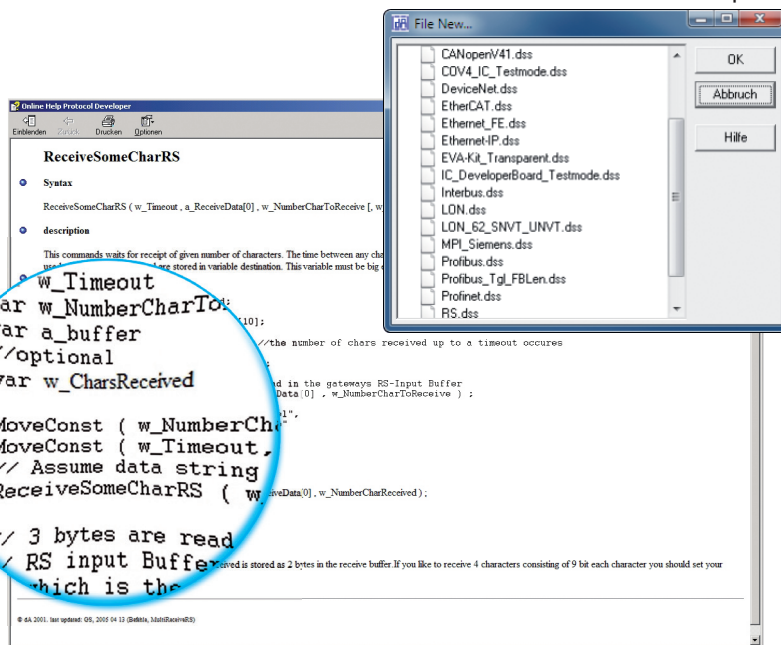
Support

The Protocol Developer contains a context-sensitive help function, in which a detailed description of all script commands is included.

Templates for different tasks and bus variants can be transferred directly and adapted to your own needs.

- Integrated debug environment
- Convenient test of the script
- Memory efficient compilation of script code
- Example for each script command
- Templates for each bus variant
- Workshops
- Support by phone / E-Mail

Picture 5: extract of the templates

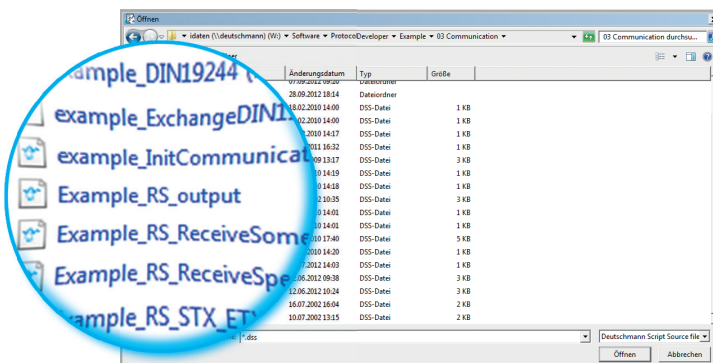


Picture 6: online help

Sample scripts

The free of cost Protocol Developer includes commented script examples for every script command.

In addition to our free hotline, you'll find further support in form of the latest versions of manuals and software tools available for free on our web page.



Picture 7: extensive library with example scripts

UNIGATE IC2/IC

Programming for more flexibility

PROTOCOL DEVELOPER

Deutschmann Script language

Advantage through flexibility

- No changes in your own firmware necessary
- Flexible and powerful script language, specifically created for the bus communication
- Easy to handle
- Customized commands on demand. For example if functions are missing or an optimization for time critical application is needed.
- You can create your own script, or Deutschmann creates your script for you
- Extensive support through help function, templates, examples, hotline and Workshops
- Devices can also be factory fitted with your script
- Scripts run on the UNIGATE® CL, UNIGATE® IC2/IC and UNIGATE® FALCON series
- Easy adaption for existing scripts to more Industrial Ethernet and fieldbuses.

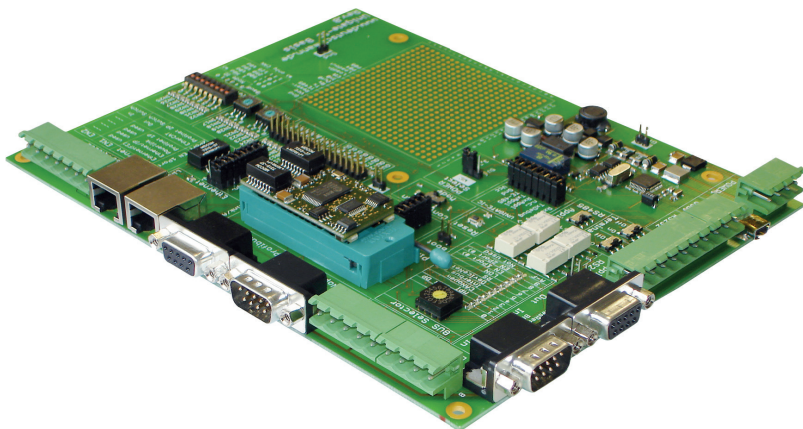
PROTOCOL DEVELOPER

The developer board was developed to ensure the quick implementation of the Deutschmann All-In-One bus node UNIGATE® IC into your own electronics. The unified interface supports all UNIGATE® IC models.

For the connection to a PC (with the DEBUG interface) there is both, an RS232 port and a USB port available.

The application can be connected either via RS232, RS485, RS422, or USB. To test the respective bus side, bus connections according the norm or market standard are available. The Deutschmann add-on packages (bus master simulation) are optionally available.

- ✦ The add-on has been designed to provide a simple master simulation.
- ✦ The add-on is quick to install and easy to handle.
- ✦ The included PC software allows to follow, the data exchange through a serial bus window and a bus windows.
- ✦ Depending on the bus versions there is technical literature included.
- ✦ Also you can use the existing bus master instead of the add-on.



UNIGATE IC/IC2

Technical overview

CANopen



5V
Art.-Nr. V3491

3,3V
Art.-Nr. V4346

- › Complete CANopen-Slave-interface
- › Max. 16 TPDO and max. 16 RPDO process data objects
- › Baud rate 10kbit/s to 1 Mbit/s
- › Isolated CANopen interface
- › CANopen Peer-to-Peer Messaging
- › 12 K Memory for Script code
- › Number SDO: 1
- › Number user objects: 255
- › CAN-Layer 2 Support by Script
- › Number errors in errorfield: 2
- › Generic EDS file

IC2 EtherCAT without transformer



3,3V
Art.-Nr. V4396

- › EtherCAT (CoE) Slave
- › 100 Mbit/s full-Duplex transmission
- › Max. 1024 byte input- and 1024 byte output data
- › UART up to 6 Mbaud
- › SPI-Bus transfer rate in Master mode: 12 Mbit/s
- › SPI-Bus transfer rate in Slave mode: 10 Mbit/s
- › Isolated EtherCAT interface with 2x RJ45 connector
- › Supports CANopen communication objects, PDO and SDO
- › Generic ESI file

CANopen 4X



5V
Art.-Nr. V3786

3,3V
Art.-Nr. V3758

- › Complete CANopen-Slave-interface
- › Max. 32 TPDO and max. 32 RPDO process data objects
- › Baud rate 10kbit/s to 1 Mbit/s
- › Isolated CANopen interface
- › CANopen Peer-to-Peer Messaging
- › 16 K Memory for Script code
- › Number SDO: 2
- › Number user objects 65535
- › CAN-Layer 2 Support by Script
- › Number errors in errorfield: 10
- › Generic EDS file
- + LSS, Script can read all Objects (also 1xxxH)
- + 1002H / 1004H / 1010H / 1011H / 1201H
- + On write by SDO
- + SDO-Block-Transfer

EtherNet/IP 2Port



3,3V
Art.-Nr. V3803

- › EtherNet/IP-Adapter function
- › Max. 1060 byte input- and 1060 byte output data
- › Bus baud rate 10/100 Mbit/s autotdetect
- › Isolated EtherNet/IP-interface with 2xRJ45 connector
- › IT-functions: Web server, FTP server
- › Generic EDS file



DeviceNet



5V
Art.-Nr. V3264

3,3V
Art.-Nr. V3800

- › Complete DeviceNet interface
- › Max. 255 byte input- and 255 byte output data
- › Baud rate 125-500 kbit/s
- › Isolated DeviceNet interface
- › DeviceNet functions: I/O Slave messaging, polling
- › Generic EDS file

IC2 Fast Ethernet/Modbus TCP



3,3V
Art.-Nr. V4360

- › Max. 1540 Bytes input- and 1540 Bytes output data
- › UART up to 6 Mbaud
- › SPI-Bus transfer rate in Master mode: 12 Mbit/s
- › SPI-Bus transfer rate in Slave mode: 10 Mbit/s
- › Baud rate 10/100 Mbit/s
- › Isolated Fast Ethernet interface with RJ45 connector
- › IT-functions: Web server, FTP server
- › Data-Flash: 1 MByte
- › Memory for file system: 1 MByte
- › Script and Config-Update via RS232 and FTP
- › Without magnetics: o.r
- + RAM-Disk

Modbus RTU



5V
Art.-Nr. V3517

3,3V
Art.-Nr. V3736

- › Isolated RS interface (RS232/RS485/RS422)
- › Up to 625 kBaud
- › Implementation proprietary/complex protocols
- › Implementation standard protocols e.g. Modbus RTU (Master/Slave), Modbus ASCII (Master/Slave), 3964 (R) (e.g. for RK512)

General specifications

- Serial interfaces 2x UART, 1x SPI or 1 x shift register
- Baud rates: Up to 6 MBaud depending on the variant
- Debug interface
- Up to 16K Script memory depending on the variant
- Dimensions: 25 x 45 mm (W x H)
- Weight approx. 9 g
- 32 DIL
- Ambient temperature:
-40°C to +70°C or -40°C to +85°C depending on the version
- CE and bus-specific certifications
- RoHS
- Reach

IC2 PROFIBUS



3,3V
Art.-Nr. V4329

General features:

- › Complete PROFIBUS-DP-Slave interface
- › Max. 244 Bytes input- and 244 Bytes output, max. 488 Bytes total
- › UART up to 6 MBaud
- › SPI bus transmission rate in Master mode: 12 Mbit/s
- › SPI bus transmission rate in Slave mode: 10 Mbit/s
- › PROFIBUS address adjustable
- › Automatical Baud rate recognition (9600 bit/s – 12 Mbit/s)
- › Isolated PROFIBUS interface for 9-pin. D-sub connector
- › Generic GSD file

IC2 PROFINET 2Port (1Port possible) - without transformer



3,3V
Art.-Nr. V4329

- › Complete PROFINET-IO-Device interface (slave)
- › Max. 1024 Bytes input and max. 1024 Bytes output data
- › Isolated PROFINET interface with 2x RJ45 connector (integrated Switch)
- › 1 Port operation possible
- › 100 Mbit Full-Duplex transmission
- › 32-Bit microprocessor for fast response time
- › Generic GSDML file
- › UART up to 6 MBaud
- › SPI bus transmission rate in Master mode: 12 Mbit/s
- › SPI bus transmission rate in Slave mode: 10 Mbit/s

UNIGATE IC/IC2

Technical overview

RS (serial interfaces on the bus side)



5V
Art.-Nr. V3517

3,3V
Art.-Nr. V3736

- › Isolated RS interface (RS232/RS485/RS422)
- › Up to 625 kBaud
- › Implementation proprietary protocols
- › Implementation standard protocols e.g. Modbus RTU (Master/Slave), Modbus ASCII (Master/Slave), 3964(R) e.g. for RK512

LONWorks



5V
Art.-Nr. V3458

- › Complete LONWorks Slave interface
- › Max. 512 Bytes input- and 512 Bytes output data, 62 In und Out SNVTs
- › Transceiver FTT-10A
- › 78 kBit/s
- › UART up to 625 kBaud
- › Fixed Neuron ID

MPI



5V
Art.-Nr. V3762

3,3V
Art.-Nr. V3570

- › Complete MPI-Slave interface
- › Isolated MPI interface
- › MPI-Master functionality
- › Max. 255 Bytes input- and 255 Bytes output data
- › UART up to 325kBaud

General specifications

- Serial interfaces 2x UART, 1x SPI or 1 x shift register
- Baud rates: Up to 6 MBaud depending on the variant
- Debug interface
- Up to 16K Script memory depending on the variant
- Dimensions: 25 x 45 mm (W x H)
- Weight approx. 9 g
- 32 DIL
- Ambient temperature:
-40°C to +70°C or -40°C to +85°C depending on the version
- CE and bus-specific certifications
- RoHS
- Reach

UNIGATE FALCON

NEW PRODUCT SERIES

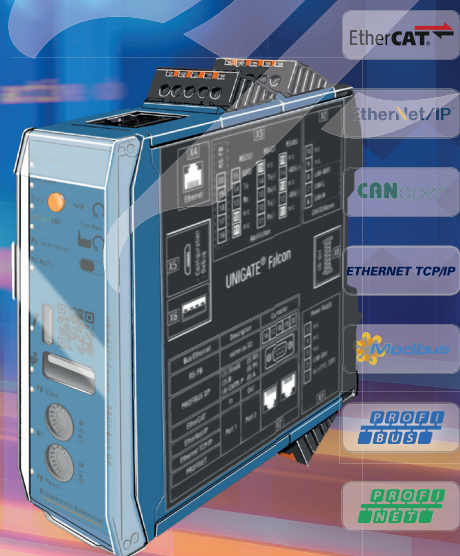
COMING IN 2025!

FUTURE PROOF GATEWAY AND PROTOCOL CONVERTER

- › Neue Prozessorgeneration
- › Kompakte Bauform
- › Neues Bedienkonzept
- › Schneller Datenaustausch

UNIGATE
FALCON

FOCUS ON SKILL





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Deuschmann Automation

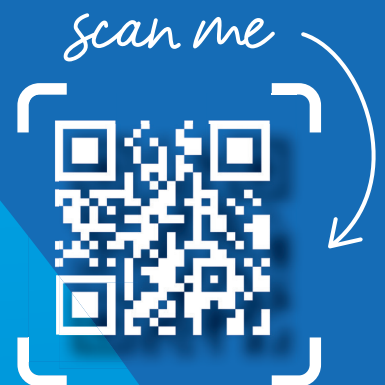


Deuschmann
your ticket to all buses

Gateway & Protocol Converter

UNIGATE *FALCON*

FOCUS ON SKILL



EtherCAT®

EtherNet/IP®

CANopen®

ETHERNET TCP/IP

Modbus

PROFI
BUS

PROFI
NET

- New processor generation
- New operating concept
- Available without housing
- Compact design
- Fast data exchange
- Designed & manufactured in Germany



Deutschmann Automation

Cam Controls | Fieldbus Gateways | Industrial Ethernet Products

Deutschmann Automation

The fast way to Industrial Ethernet

Deutschmann Automation, the specialist for industrial data communication, is a medium-sized German company located near Frankfurt.

The company designs and manufactures innovative network components for the sector of industrial data communication in the Industry 4.0 environment. Various series of Fieldbus and Industrial Ethernet gateways, and embedded solutions as well as development tools are offered under the brand name UNIGATE®.

A special feature of the UNIGATE® Gateway series is Brand labeling. With the customized design Deutschmann Automation not only gives you the opportunity to pre-configure the device and choose different housing colors, you can also apply your own logo.

In 2016 Deutschmann, who became known with cam controls, celebrated its 40th birthday.



Michael M. Reiter, General Manager Marketing and Sales, says: „Today, our company stands for innovative strength in the development of new network components and solutions for a wide range of applications - while at the same time providing consistency in our product range and comprehensive customer support“.

UNIGATE



FALCON

-focus on skill

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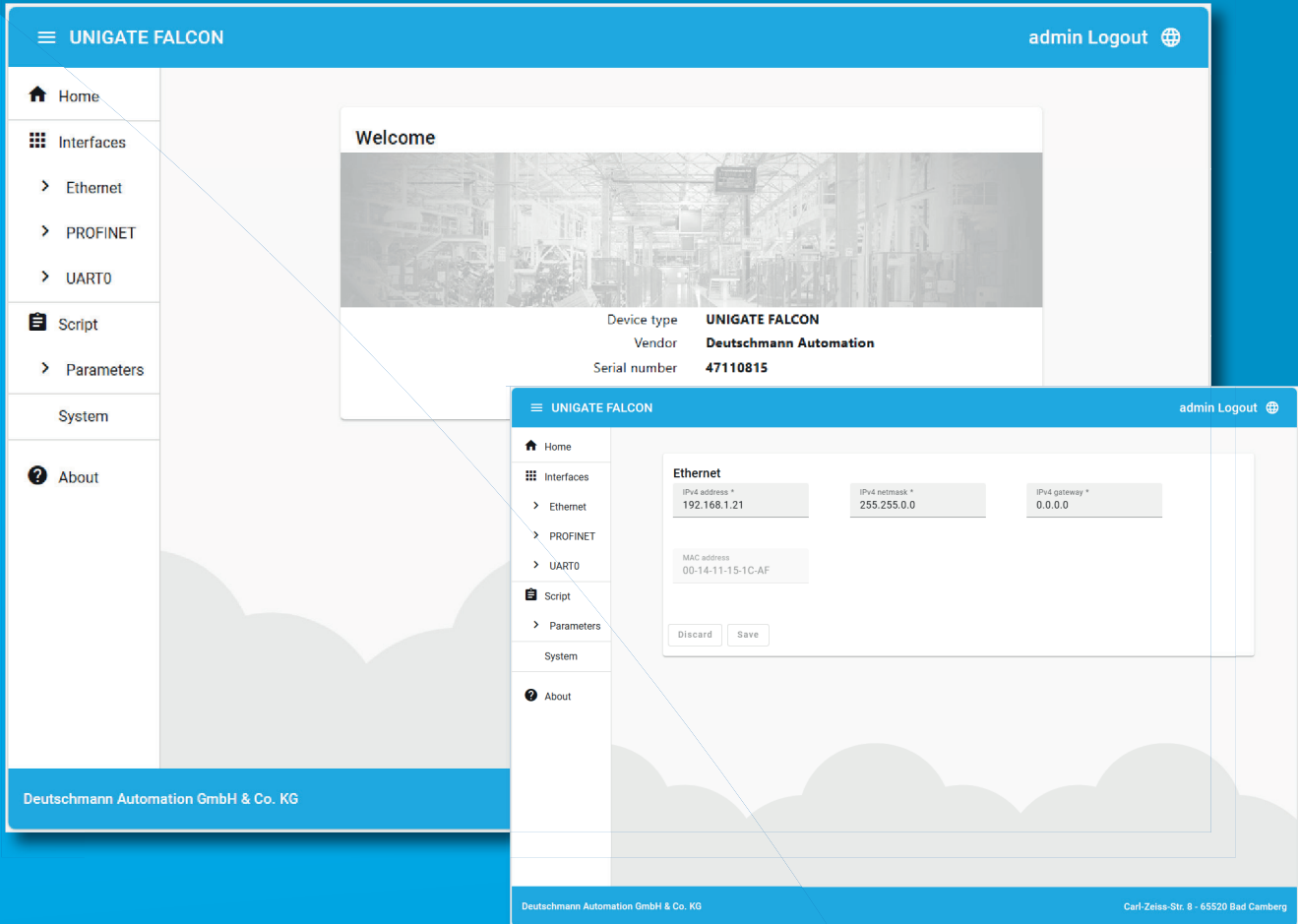
01

What sets us apart

Configuring or programming - Choose your own way

Configuration via web interface

The configuration of the UNIGATE® FALCON modules is done comfortably via web interface over the Ethernet interface.

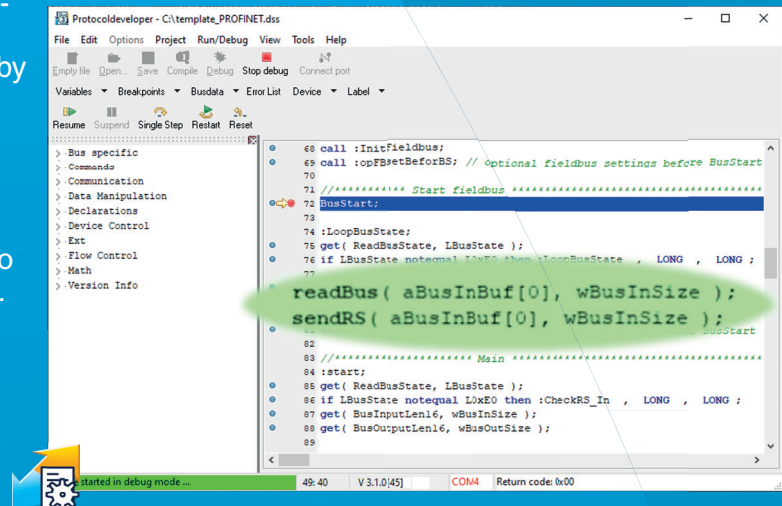


Protocol Developer - Flexibility via Deutschmann Script language

More complex applications, which cannot be presented via a pure configuration can be programmed via the Deutschmann Script language.

Free programming is possible with the Protocol Developer IDE and the easy-to-learn Deutschmann Script language developed by Deutschmann Automation.

It allows the emulation of proprietary protocols as well as the implementation of standard protocols. Simple scripts can be processed in a few microseconds. Script debugging is done via USB interface, so no additional debugging hardware is required.



Script example in the Protocol Developer

02

overview

UNIGATE

FALCON

General overview



UNIGATE FALCON

General overview

FUTURE PROOF GATEWAY

Compact housing - High data throughput - Fast data transfer



The new UNIGATE FALCON protocol converter/gateway series connects devices such as automation components with the desired Industrial Ethernet or fieldbus. In addition to the respective Industrial Ethernet or fieldbus interface, further interfaces are available, such as the serial interfaces RS232/RS422/RS485; Ethernet interface and a CAN interface (CANopen/CAN-FD/ CAN 2.0A/ CAN 2.0B).

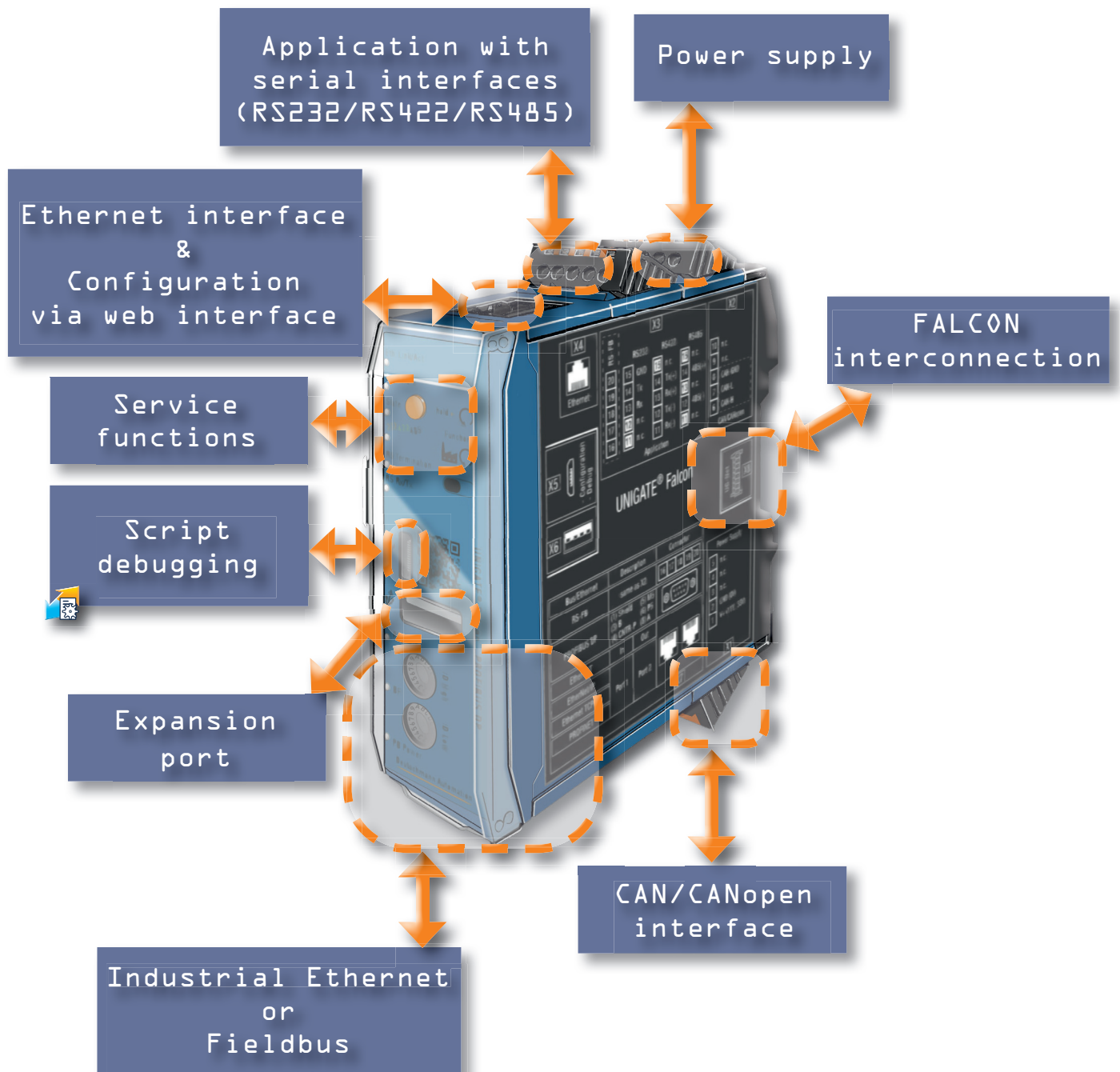
UNIGATE FALCON is available as an extremely compact DIN-rail device measuring 25 mm x 95 mm x 95 mm {W x H x D}.

The device is configured using a web interface via Ethernet. As an alternative to device configuration, UNIGATE FALCON can also be freely programmed using Deutschmann Automation's proven script language (mix of Basic & Pascal) and the Protocol Developer software. The script can be debugged via the μ USB interface. The cycle time of the script could be accelerated by a factor of 50 to 80 by using the latest processor technology.

This means that the data can be routed through the UNIGATE faster overall and is therefore available for retrieval at the respective interfaces more quickly.

Another feature is the integrated service functions, which can be called up via a button. A hardware reset or factory reset, for example, can be carried out without additional equipment.

- RS232, RS485 and RS422 on board
- The RS485 mode enables multi-drop communication (e. g. data acquisition from multiple nodes)
- Software controlled line termination (via configuration or button control)
- Same structure on the serial side in all variants
- The Ethernet or fieldbus side corresponds to the standards or the standard market versions
- Adaptation of the terminal device firmware is not necessary
- Modern, compact DIN-rail module
 - Uniform dimension across the entire family
- Also available as embedded module
- Wide voltage range from 10 to 33 VDC
- Built-in isolation on the industrial Ethernet and Fieldbus interfaces
- Configuration of the module via web interface over the Ethernet interface
- Configuration of the module via web interface
- Support of various serial protocols
 - Modbus RTU Master/Slave
 - Modbus ASCII Master/Slave
 - 3964(R) protocol
 - Generic protocol (e.g. ASCII communication)
- Script programming
 - E. E.g. for emulating proprietary protocols
 - Free programming via the Deutschmann Script Language (mix of Basic & Pascal) Protocol Developer software
 - Fast script processing
 - Script debugging via μ USB interface



UNIGATE FALCON

Technical overview

UNIGATE FALCON PRO - PROFIBUS-DP



■ PROFIBUS interface

- Complete PROFIBUS-DP slave interface
- Automatic baud rate detection (96 Kbit/s - 12 Mbit/s)
- Supports DPV0 and DPV1
- Isolated 9-pin D-sub connection
- PROFIBUS address adjustable via rotary switch
- Max. 244 bytes input and 244 output data, max. 488 bytes in total

■ Additional functions and interfaces

UNIGATE FALCON PRO - EtherCAT

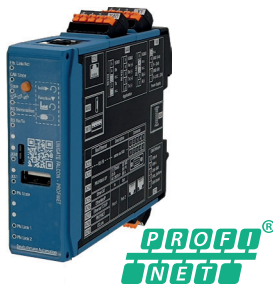


■ EtherCAT interface

- Supports CoE (CANopen over EtherCAT)
- 100 Mbit/s full duplex
- Isolated EtherCAT interface with 2x RJ45 connection (IN and OUT)
- Generic XML file (with configuration)
- Up to 1024 bytes input and 1024 bytes output data

■ Additional functions and interfaces

UNIGATE FALCON PRO PROFINET 2Port



■ PROFINET interface

- PROFINET device interface, conformance class B, real time communication (RT)
 - Note: Can also be operated in IRT network
- Max. 1024 bytes input- and 1024 bytes output data
- Cyclical- and acyclical data exchange
- 100 Mbit/s
- FTP-Server and Web server
- System redundancy (S2) and media redundancy protocol (MRP)
- PROFINET configuration via GSDML file
- Isolated 2x RJ45 connection (integrated 2 port switch)

■ Additional functions and interfaces

Additional functions and interfaces

■ UART application interface

- RS232/RS422/RS485 on board
- Transmission rate max. 6 MBaud

■ Ethernet interface

- Configuration via web interface
- Isolated 1x RJ connection
 - TCP/IP socket interface

■ CAN interface

- CANopen
- CAN Layer 2 (CAN 2.0A/CAN 2.0B)
- CAN-FD

■ Service menu

- Functions via push-button
 - Reset
 - Factory reset
 - Termination serial interfaces

PRO: Activation via chargeable activation code

UNIGATE FALCON - technical data

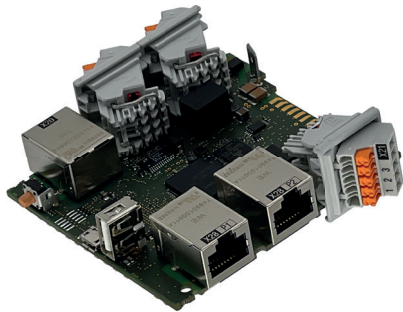
Protocols	<i>configurable</i>	Modbus RTU Master/Slave, Modbus ASCII Master/Slave, 3964(R); SSI Generic (e.g. ASCII communication)
	<i>more protocols via Script</i>	Customized protocols can be created via Script
Max. stations		31 (with RS485/422)
Baud rates		UART up to 6 MBaud
Physical standards		RS232/422/485; Ethernet; CAN (CANopen/CAN-FD/CAN 2.0A/CAN 2.0B)
Modbus commands		0x01 Read Coils, 0x02 Read Discrete Inputs, 0x03 Read Holding Registers, 0x04 Read Input Registers, 0x05 Write Single Coil, Write Single Register, 0x0F Write Multiple Coils, 0x10 Write Multiple Registers, Customized commands can be created.
Technical Details DINrail		Standard
Weight	approx. 105 g	
Dimensions (W x H x D)	25 mm x 95 mm x 95 mm	
Protection class	IP20	Protection against foreign bodies & water to IEC 529 (DIN 40050)
Housing material	Polyamide	
Installation position	Any	
Location	Switch cabinet	
Mounting	DIN rail	EN 50022
Certifications		
CE	2014/30/EU	EN61000-6-2 Immunity EN55011 class A Emission
RoHS		RoHS II Directive 2011/65/EU
REACH	downstream user	
Electrical Characteristics		
External power supply	10..33 V DC	
Hardware Characteristics		
Short-circuit protection	Yes	
Galvanic isolation on subnetwork	Yes	
Environmental Characteristics		
Operating temperature	-25°C (non condensing) up to +70°C	
Storage temperature	-40°C ... +100°C	
Relative humidity	0% - 95% non condensing	
Immunity and emission for industrial environment		
Electrostatic discharge	+/- 4 kV	EN 61000-4-2
Electro magnetic RF fields	10 V/m 80 MHz - 1 GHz 3 V/m 1,4 GHz - 2,0 GHz 1 V/m 2,0 GHz - 2,7 GHz	EN 61000-4-3
Fast Transients	+/- 1 kV	EN 61000-4-4
Surge protection	+/- 1 kV	EN 61000-4-5
RF conducted interference	10 V/rms	EN 61000-4-6
Emission (at 10 m)	40 dB 30 MHz - 230 MHz 47 db 30 MHz - 1 GHz	CISPR 16-2-3

UNIGATE FALCON Embedded

General overview

WITHOUT HOUSING

High data throughput - Fast data transfer



The new UNIGATE FALCON Protocol Converter/Gateway series is also available as an embedded version measuring 25 mm x 95 mm x 95 mm (L x W x H). Mounting via 4 mounting holes Ø 3,0 mm. The range of functions is identical to the DIN rail device.

UNIGATE Falcon is based on ARM Cortex-M processor technology, which ensures significantly higher data throughput compared to the previous generation. The transfer rates of the serial interface are about ten times faster in RS485/422 mode.

The device is configured using a web interface via Ethernet. As an alternative to device configuration, UNIGATE FALCON can also be freely programmed using Deutschmann Automation's proven script language (mix of Basic & Pascal) and the Protocol Developer software. The script can be debugged via the µUSB interface. The cycle time of the script could be accelerated by a factor of 50 to 80 by using the latest processor technology.

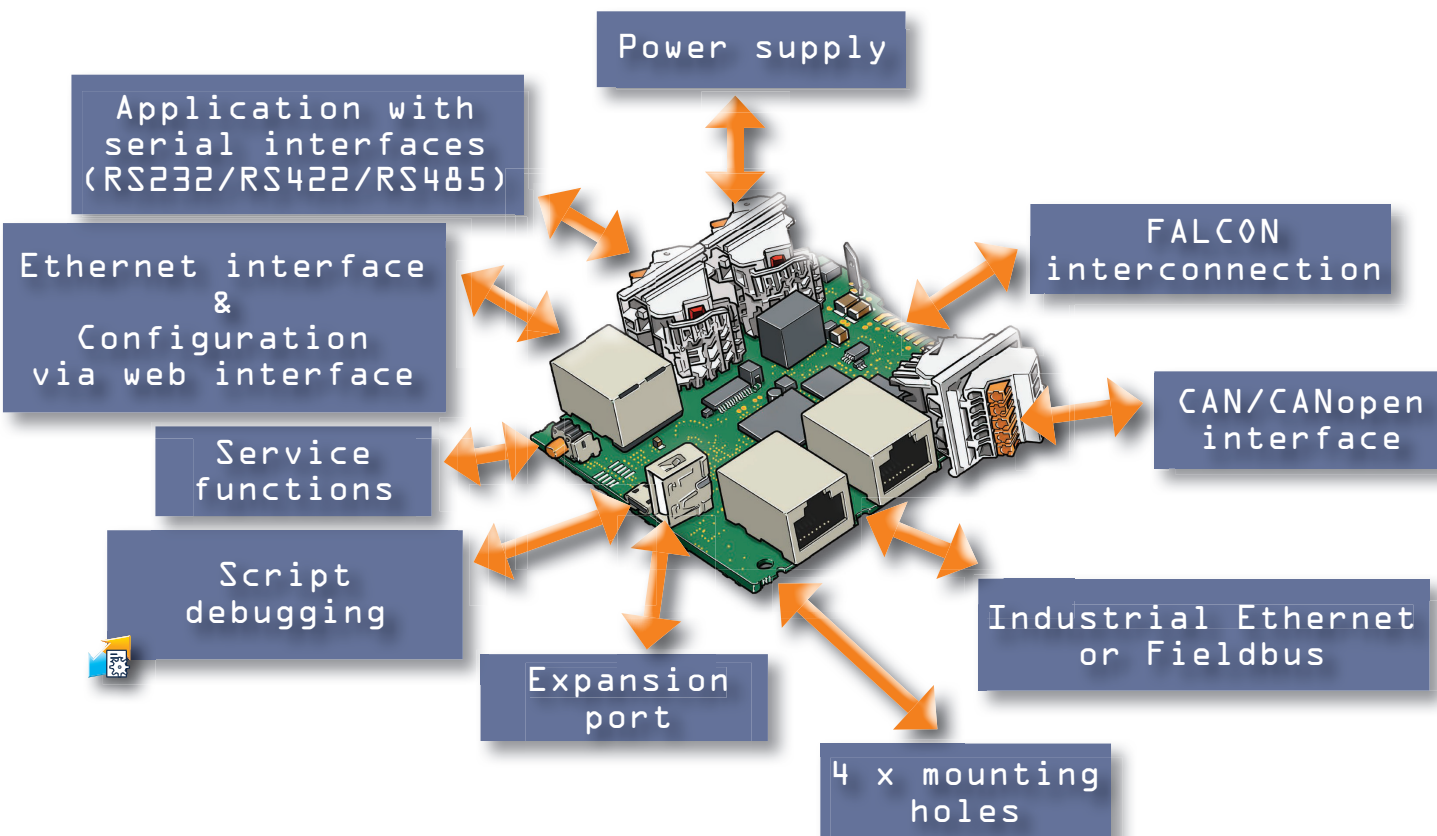
This means that the data can be routed through the UNIGATE faster overall and is therefore available for retrieval at the respective interfaces more quickly.

Another feature is the integrated service functions, which can be called up via a button. A hardware reset or factory reset, for example, can be carried out without additional equipment.

- RS232, RS485 and RS422 on board
- The RS485 mode enables multi-drop communication (e. g. data acquisition from multiple nodes)
- Software controlled line termination (via configuration or button control)
- Same structure on the serial side in all variants
- The Ethernet or fieldbus side corresponds to the standards or the standard market versions
- Adaptation of the terminal device firmware is not necessary
- Modern, compact DIN-rail module
 - Uniform dimension across the entire family
- Also available as embedded module
- Wide voltage range from 10 to 33 VDC
- Built-in isolation on the industrial Ethernet and Fieldbus interfaces
- Configuration of the module via web interface over the Ethernet interface
- Configuration of the module via web interface
- Support of various serial protocols
 - Modbus RTU Master/Slave
 - Modbus ASCII Master/Slave
 - 3964(R) protocol
 - Generic protocol (e.g. ASCII communication)
- Script programming
 - E. E.g. for emulating proprietary protocols
 - Free programming via the Deutschmann Script Language (mix of Basic & Pascal) Protocol Developer software
 - Fast script processing
 - Script debugging via µUSB interface

UNIGATE FALCON Embedded - SETUP

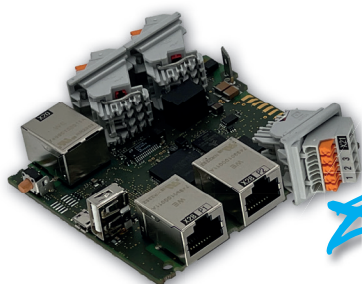
Structure



Application Example

■ Task

- Any Industrial Ethernet or fieldbus interface for your own device
- Integrated solution
- Without re-designing your own electronics
- No use of an external Protocol Converter or Gateway



■ Solution

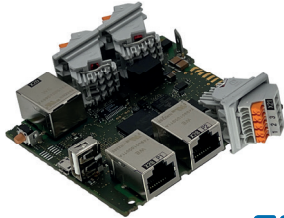
- Finished module without housing
- Mounting via 4 mounting holes $\varnothing 3.0 \text{ mm}$
- No re-design of your own electronics
- Functional scope identical to DIN rail module



UNIGATE FALCON Embedded

Technical overview

UNIGATE FALCON PRO EM1 - PROFIBUS-DP

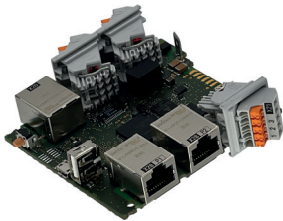


■ PROFIBUS interface

- Complete PROFIBUS-DP slave interface
- Automatic baud rate detection (96 Kbit/s - 12 Mbit/s)
- Supports DPV0 and DPV1
- Isolated 9-pin D-sub connection
- PROFIBUS address adjustable via rotary switch
- Max. 244 bytes input and 244 output data, max. 488 bytes in total

■ Additional functions and interfaces

UNIGATE FALCON PRO EM1- EtherCAT

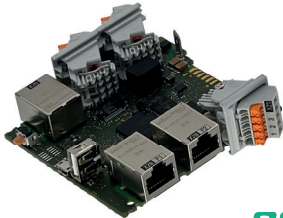


■ EtherCAT interface

- Supports CoE (CANopen over EtherCAT)
- 100 Mbit/s full duplex
- Isolated EtherCAT interface with 2x RJ45 connection (IN and OUT)
- Generic XML file (with configuration)
- Up to 1024 bytes input and 1024 bytes output data

■ Additional functions and interfaces

UNIGATE FALCON PRO EM1 - PROFINET



■ PROFINET interface

- PROFINET device interface, conformance class B, real time communication (RT)
Note: Can also be operated in IRT network
- Max. 1024 bytes input- and 1024 bytes output data
- Cyclical- and acyclical data exchange
- 100 Mbit/s
- FTP-Server and Web server
- System redundancy (S2) and media redundancy protocol (MRP)
- PROFINET configuration via GSDML file
- Isolated 2x RJ45 connection (integrated 2 port switch)

■ Additional functions and interfaces

Additional functions and interfaces

■ UART application interface

- RS232/RS422/RS485 on board
- Transmission rate max. 6 MBaud

■ Ethernet interface

- Configuration via web interface
- Isolated 1x RJ connection
 - TCP/IP socket interface

■ CAN interface

- CANopen
- CAN Layer 2 (CAN 2.0A/CAN 2.0B)
- CAN-FD

■ Service menu

- Functions via push-button
 - Reset
 - Factory reset
 - Termination serial interfaces

PRO: Activation via chargeable activation code

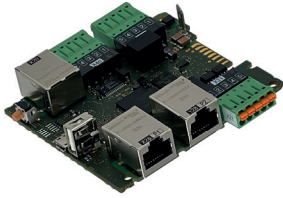
UNIGATE FALCON Embedded - technical data

Protocols	<i>configurable</i>	Modbus RTU Master/Slave, Modbus ASCII Master/Slave, 3964(R); SSI Generic (e.g. ASCII communication)
	<i>more protocols via Script</i>	Customized protocols can be created via Script
Max. stations		31 (with RS485/422)
Baud rates		UART up to 6 MBaud
Physical standards		RS232/422/485; Ethernet; CAN (CANopen/CAN-FD/CAN 2.0A/CAN 2.0B)
Modbus commands		0x01 Read Coils, 0x02 Read Discrete Inputs, 0x03 Read Holding Registers, 0x04 Read Input Registers, 0x05 Write Single Coil, Write Single Register, 0x0F Write Multiple Coils, 0x10 Write Multiple Registers, Customized commands can be created.
Technical Details Embedded		Information
Weight	approx. 47 g up to 68 g	Depending on version
Dimensions (W x H x D)	95 mm x 25 mm x 84 mm	Depending on version
Housing material	without housing	
Installation position	Any	
Location	Any	
Mounting	Via 4 mounting holes Ø 3,0mm	EN 50022
Certifications		
CE	2014/30/EU	EN61000-6-2 Immunity EN55011 class A Emission
RoHS		RoHS II Directive 2011/65/EU
REACH	downstream user	
Electrical Characteristics		
External power supply	10..33 V DC	
Hardware Characteristics		
Short-circuit protection	Yes	
Galvanic isolation on subnetwork	Yes	
Environmental Characteristics		
Operating temperature	-25°C (non condensing) up to +70°C	
Storage temperature	-40°C ... +100°C	
Relative humidity	0% - 95% non condensing	
Immunity and emission for industrial environment		
Electrostatic discharge	+/- 4 kV	EN 61000-4-2
Electro magnetic RF fields	10 V/m 80 MHz - 1 GHz 3 V/m 1,4 GHz - 2,0 GHz 1 V/m 2,0 GHz - 2,7 GHz	EN 61000-4-3
Fast Transients	+/- 1 kV	EN 61000-4-4
Surge protection	+/- 1 kV	EN 61000-4-5
RF conducted interference	10 V/rms	EN 61000-4-6
Emission (at 10 m)	40 dB 30 MHz - 230 MHz 47 db 30 MHz - 1 GHz	CISPR 16-2-3

UNIGATE FALCON Embedded

Push-in spring connection

UNIGATE FALCON PRO EM2 - PROFIBUS-DP



on request

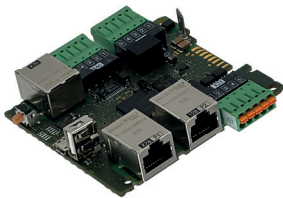


■ PROFIBUS interface

- Complete PROFIBUS-DP slave interface
- Automatic baud rate detection (96 Kbit/s - 12 Mbit/s)
- Supports DPV0 and DPV1
- Isolated 9-pin D-sub connection
- PROFIBUS address adjustable via rotary switch
- Max. 244 bytes input and 244 output data, max. 488 bytes in total

■ Additional functions and interfaces

UNIGATE FALCON PRO EM2- EtherCAT



on request

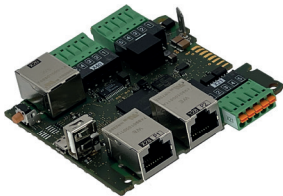


■ EtherCAT interface

- Supports CoE (CANopen over EtherCAT)
- 100 Mbit/s full duplex
- Isolated EtherCAT interface with 2x RJ45 connection (IN and OUT)
- Generic XML file (with configuration)
- Up to 1024 bytes input and 1024 bytes output data

■ Additional functions and interfaces

UNIGATE FALCON PRO EM2 - PROFINET



on request



■ PROFINET interface

- PROFINET device interface, conformance class B, real time communication (RT)
Note: Can also be operated in IRT network
- Max. 1024 bytes input- and 1024 bytes output data
- Cyclical- and acyclical data exchange
- 100 Mbit/s
- FTP-Server and Web server
- System redundancy (S2) and media redundancy protocol (MRP)
- PROFINET configuration via GSDML file
- Isolated 2x RJ45 connection (integrated 2 port switch)

■ Additional functions and interfaces

Additional functions and interfaces

■ UART application interface

- RS232/RS422/RS485 on board
- Transmission rate max. 6 MBaud

■ Ethernet interface

- Configuration via web interface
- Isolated 1x RJ connection
 - TCP/IP socket interface

■ CAN interface

- CANopen
- CAN Layer 2 (CAN 2.0A/CAN 2.0B)
- CAN-FD

■ Service menu

- Functions via push-button
 - Reset
 - Factory reset
 - Termination serial interfaces

PRO: Activation via chargeable activation code

UNIGATE FALCON Embedded

Without connector

UNIGATE FALCON PRO EM3 - PROFIBUS-DP



on request



■ PROFIBUS interface

- Complete PROFIBUS-DP slave interface
- Automatic baud rate detection (96 Kbit/s - 12 Mbit/s)
- Supports DPV0 and DPV1
- Isolated 9-pin D-sub connection
- PROFIBUS address adjustable via rotary switch
- Max. 244 bytes input and 244 output data, max. 488 bytes in total

■ Additional functions and interfaces

UNIGATE FALCON PRO EM3- EtherCAT



on request

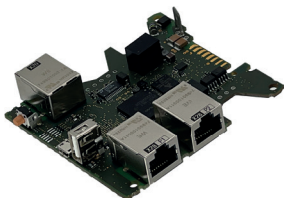


■ EtherCAT interface

- Supports CoE (CANopen over EtherCAT)
- 100 Mbit/s full duplex
- Isolated EtherCAT interface with 2x RJ45 connection (IN and OUT)
- Generic XML file (with configuration)
- Up to 1024 bytes input and 1024 bytes output data

■ Additional functions and interfaces

UNIGATE FALCON PRO EM3 - PROFINET



on request



■ PROFINET interface

- PROFINET device interface, conformance class B, real time communication (RT)
Note: Can also be operated in IRT network
- Max. 1024 bytes input- and 1024 bytes output data
- Cyclical- and acyclical data exchange
- 100 Mbit/s
- FTP-Server and Web server
- System redundancy (S2) and media redundancy protocol (MRP)
- PROFINET configuration via GSDML file
- Isolated 2x RJ45 connection (integrated 2 port switch)

■ Additional functions and interfaces

Additional functions and interfaces

■ UART application interface

- RS232/RS422/RS485 on board
- Transmission rate max. 6 MBaud

■ Ethernet interface

- Configuration via web interface
- Isolated 1x RJ connection
 - TCP/IP socket interface

■ CAN interface

- CANopen
- CAN Layer 2 (CAN 2.0A/CAN 2.0B)
- CAN-FD

■ Service menu

- Functions via push-button
 - Reset
 - Factory reset
 - Termination serial interfaces

¹PRO: Activation via chargeable activation code



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info@deuschmann.de | www.deuschmann.com

Technik wiki: wiki.deuschmann.de

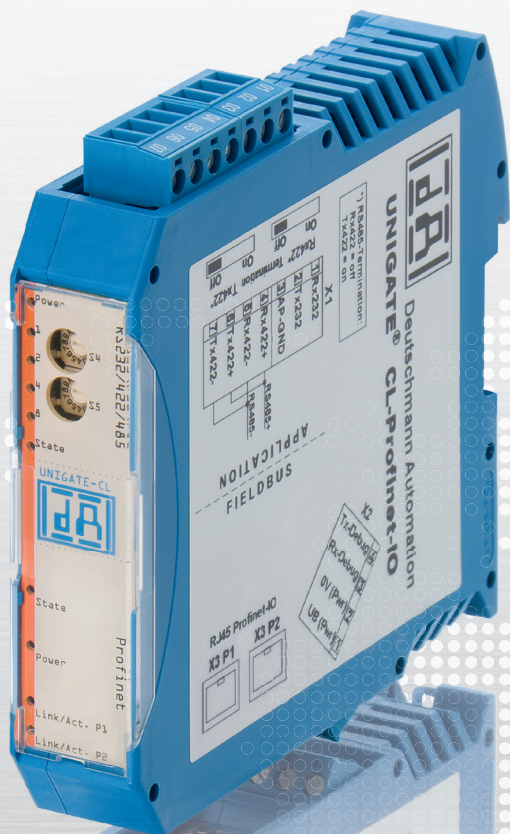


@deuschmann_DE



Deuschmann Automation

PROTOCOL CONVERTER UNIGATE® CL



- Easy installation
- Norm compliant
- Ready-to-use
- Configurable
- Programmable
- Designed & manufactured in Germany

THE INTELLIGENT
PROTOCOL CONVERTER
FOR



A SOLUTION FOR ALL DEVICES
WITH A SERIAL INTERFACE



Deutschmann
your ticket to all buses

The intelligent Protocol Converter

UNIGATE® CL – The solution for all devices with a serial interface

The Protocol Converter UNIGATE® CL connects devices such as automation components via their serial interfaces to the required fieldbus or industrial Ethernet standard. RS232, RS485 and RS422 interfaces are on Board as a standard feature.

The communication between the serial side and the bus takes place either through the device configuration and a selection of the commercially available protocol, such as Modbus ASCII, Modbus RTU (Master or slave), 3964 (R), RK512, DIN measuring bus, DIN 19244, or the device is controlled by a script.

This Script is created with the free PC tool, 'Protocol Developer'. You decide whether you want to program the Script yourself or hire Deutschmann Automation to do so.

A special feature of the UNIGATE® CL series is Brand labeling. With the customized design Deutschmann Automation not only gives you the opportunity to pre-configure the device and choose different housing colors, you can also apply your own logo.



Your Advantage

With the UNIGATE® CL modules from Deutschmann you bring existing components into modern networks. As a device manufacturer you save the self-development of the respective fieldbus or Ethernet based interfaces. The consistency of the Deutschmann UNIGATE® CL series allows once generated configurations and scripts to be used for other fieldbus and Ethernet based versions.

Advantage Deutschmann – This speaks for UNIGATE® CL

- Available for the most fieldbus and Industrial Ethernet versions
- RS232, RS485- and RS422 interfaces are on Board
- Same design on the serial side in all bus versions
- The fieldbus or Ethernet side meets the standards, respectively the standard market models.
- SSI protocol is supported e.g. for encoder
- Built-in isolation on the bus side, optionally on the serial side
- Configuration of the module via configuration tool WINGATE
- Free programming with Protocol Developer (Deutschmann Script language)
- No adjustment of the device firmware needed
- Additional debug interface on board
- Modern, slim, DIN rail
- Same Dimensions in all bus variants
- Brand labeling, pre-configured according to the customer
- Wide voltage range from 10 to 33 VDC
- When using the RS485 interface, multiple terminal devices can be used on a Protocol Converter (e.g. Modbus RTU).

Application example

Point-To-Point-Connection

Between the UNIGATE® and a component via one of the serial interfaces.

Component



BUS

PLC-Master

Master-Slave-Structure

When using the RS485-interface several terminal units can be linked and addressed specifically at the corresponding protocol (e. g. Modbus RTU-Master).

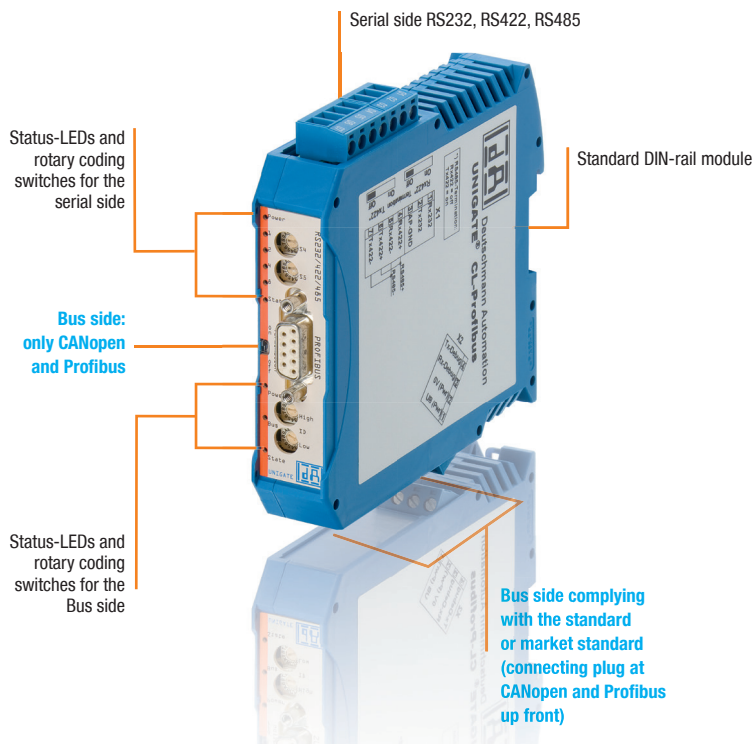
Components 1-n



BUS

PLC-Master

UNIGATE® CL design



Deuschmann

your ticket to all buses

➤ Point to point connection via any serial interface

➤ SSI protocol is supported e.g. encoder

➤ Master-slave structure, e.g. with Modbus RTU

➤ The converter can operate as a master or a slave

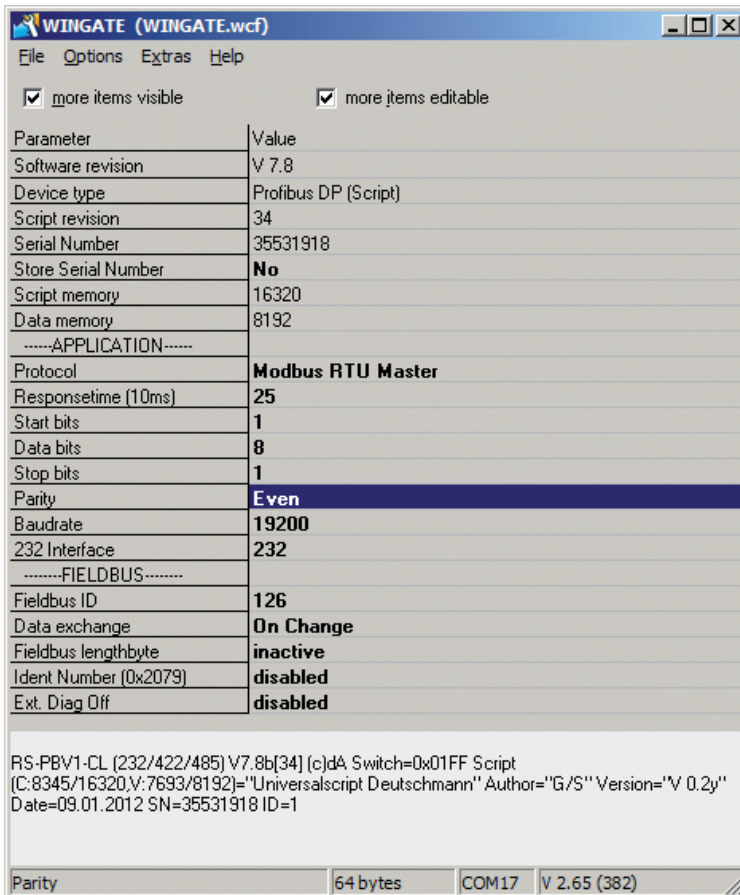
➤ Same mechanical design of all bus versions

➤ Space-saving housing

➤ Wide voltage range

➤ Brand labeling

- own logo
- own article description
- Pre-configuration, import your own script
- Neutral packaging
- Own front panel designed for your CI
- Own housing color



Picture 1: WINGATE® main window

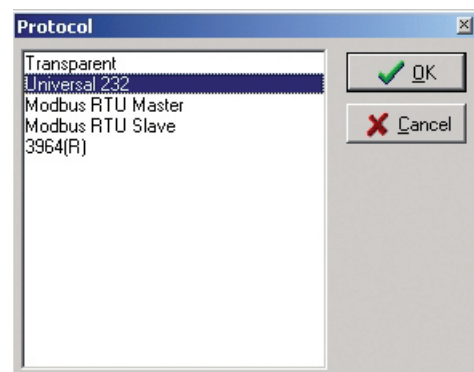
The implementation of the serial interface onto the industrial network is configured with the configuration tool WINGATE®. WINGATE® is running on Windows.

The configuration is loaded from the PC into the CL. A once created configuration can be saved and loaded in WINGATE® time and time again. It goes without saying that the created configuration can also be loaded from the UNIGATE® into the WINGATE®.

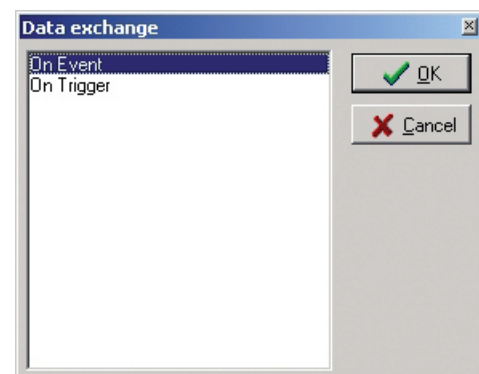
All CL models can handle the market standard protocols 3964(R), RK512, DIN 19244, DIN 66348-2 (measurement bus), Modbus ASCII and Modbus RTU (Master and Slave operation possible), and also a universal 232-protocol for a transparent data exchange.

The Technical Support of Deutschmann is by your side, whether you have any questions or need help generating your configuration.

The devices can be delivered pre-configured.



Picture 2: market standard protocols (extract)



Picture 3: subwindow parameter selection

- Comfortable configuration
- consistency for each bus
- Additional fieldbus mechanism



Protocol Developer

Deutschmann Script language

The heart of the Deutschmann UNIGATE® / Gateway series

- ▼ Flexible solutions are needed. With the usual configuration tools for protocol converters and gateways, the user has to work with the specifications of the manufacturer. To change this unfortunate condition Deutschmann developed its own script language as early as in 1999.
- ▼ The user only needs to process the data of the bus and barely has to look after the special characteristics of the fieldbus.
- ▼ The Protocol Developer supports a variety of functions to fit the received or to send data into the right "form". Mathematics- or memory processing commands are known from other Script languages and are easy to understand implemented, even for laymen.
- ▼ Also the neatly arranged selection of examples enables a quick introduction to laymen.
- ▼ Another highlight is the included debug functionality. The common functionalities such as Single-step, running and stopping on breakpoint are available.
- ▼ Great emphasis is put on data security. You can activate special error detection routines on request.

What exactly is a script?

A script is a sequence of commands executed in a given order. A command is always a small, firmly outlined task. The script language also knows commands that control the program flow in the script, which is why you can assemble even complex processes with these simple commands.

Command groups overview

Declarations	variable declaration
Flow Control	Subfunction calls, jumps, branches
Math	Mathematical functions, data conversions
Communication	Send and receive data
Device Control	Set and read parameters. For example the baud rate for the serial interface.
Bus Specific	bus-specific values



Deutschmann

your ticket to all buses

- ▼ **Comfortable script commands**
- ▼ **Wide range of functions**
- ▼ **Marketable protocols are included as a script command**
- ▼ **Quick induction**

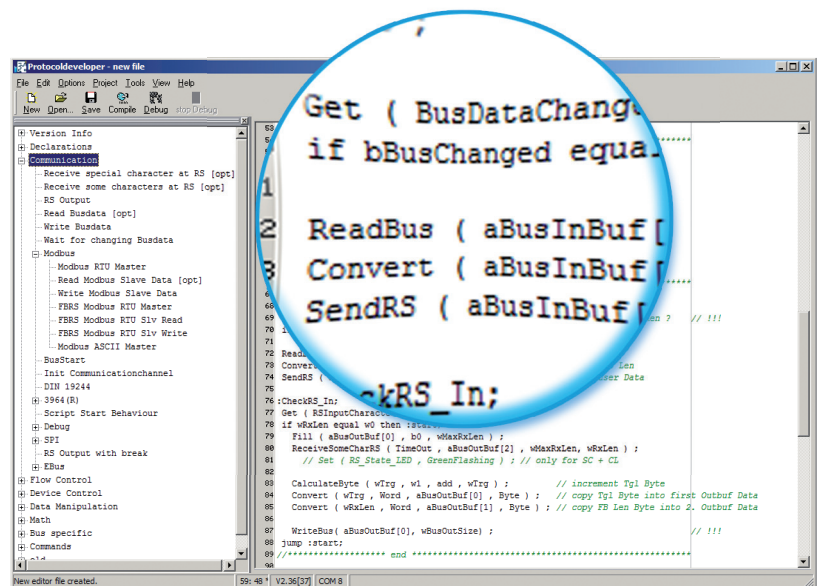


The amount of tasks which can be handled with a script is infinite.

Scripts are imaginable which

- automatically determine a participants data at the serial interface, edit this data and then outline it in the bus
- only carry out action if the bus data is altered
- carry out timed actions
- share communication states
- exchange the data between 2 serial participants (RS485) and present the state in the bus

The script programming gives you a flexible possibility to solve your communication task. On both sides, i.e., on the RS-side and on the bus side, data can be edited, converted and arranged.

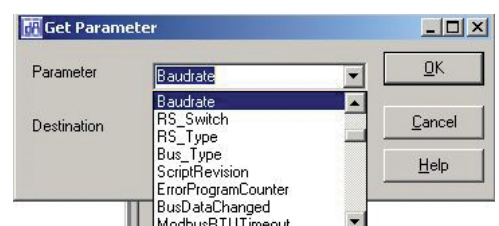


Picture 1: script example in the Protocol Developer

The 1x1 of the Protocol Developer

Picture one shows you an example script in the editor surface and the tree view of all available commands (Command-Tree). It is the tool for easy script generating for our script gateways, its operation is aimed on it.

In addition to programming via text commands, the Command-Tree also offers dialogue-based programming. If defined, and necessary for the correlating command, a dialogue goes through the command parameters (picture 2) and inserts the resulting command into the script.



Picture 2: command parameters



Protocol Developer



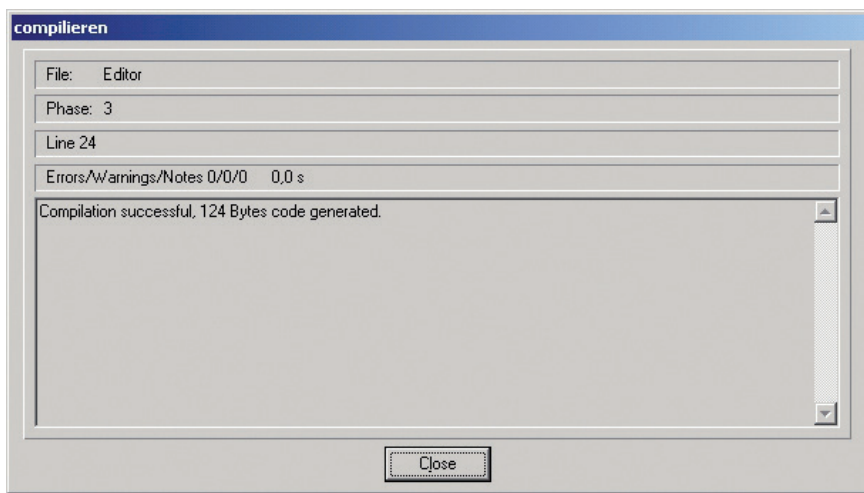
Deuschmann
your ticket to all buses

Compile

Before a script can be loaded into a UNIGATE®, it has to be compiled. The resulting code is very storage efficient. Even extensive scripts fit comfortably in the internal memory of the UNIGATE®.

The loading of a script into the device can be done directly from the PROTOCOL DEVELOPER. For serial programming a script-download tool is available.

- Integrated debug environment
- Convenient testing of the script
- Memory efficient compilation of script code
- Examples for each script command
- Templates for each bus variant
- Workshops
- Support by phone / E-Mail

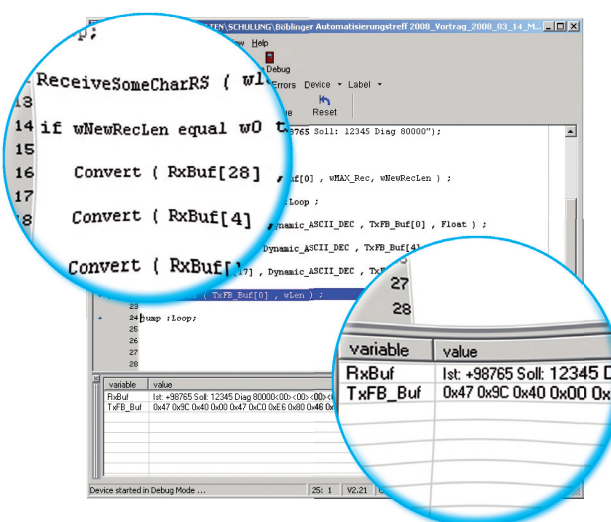


Picture 3: compilation

Debuggen

All UNIGATE® CL devices have a built-in debugging interface. A special debug software is not needed. To test even extensive scripts quickly you'll find many functions for comfortable debugging, such as

- Breakpoints
- Single-step
- Display of the variables and their values
- Error display



Picture 4: debug window with variables and their content

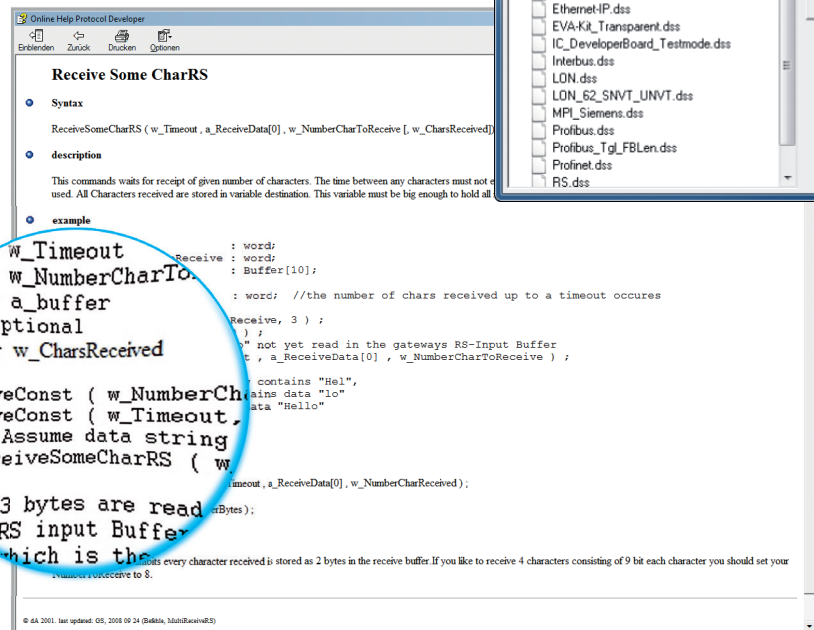
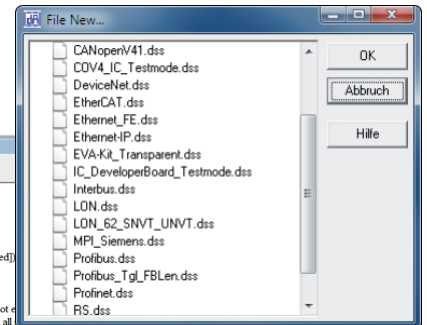


Support

The Protocol Developer contains a context-sensitive help function, in which a detailed description of all script commands is included.

Templates for different tasks and bus variants can be transferred directly and adapted to your own needs.

Picture 5: extract of the templates



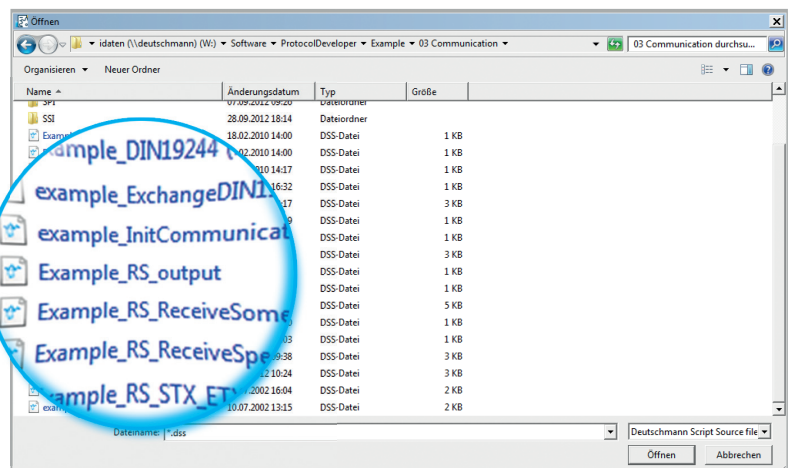
Picture 6: online help

Sample scripts

The free of cost Protocol Developer includes commented script examples for every script command.

In addition to our free hotline, you'll find further support in form of the latest versions of manuals and software tools available for free on our web page.

(www.deutschmann.com)



Picture 7: extensive library with example scripts



Protocol Developer



Deuschmann
your ticket to all buses

Advantage Deuschmann – Flexibility

- No changes in your own firmware necessary
- Flexible and powerful script language, specifically created for the bus communication
- Easy to handle
- Customized commands on demand. For example if functions are missing or an optimization for time critical application is needed.
- You can create your own script, or Deuschmann creates your script for you
- Extensive support through help function, templates, examples, hotline and Workshops
- Devices can also be factory fitted with your script
- Scripts run on the UNIGATE® CL, UNIGATE® IC and UNIGATE® FC series
- Easy adaption for existing scripts to more fieldbuses and industrial Ethernet.

- **Integrated debug environment**
- **Convenient testing of the script**
- **Memory efficient compilation of script code**
- **Examples for each script command**
- **Templates for each bus variant**
- **Workshops**
- **Support by phone / E-Mail**

UNIGATE® CL Starterkit – Affordable and compact

Deuschmann Starterkits are arranged in a way, which enables you to connect your product to the selected Fieldbus or Industrial Ethernet at the laboratory bench fast and low-priced. In order to meet the customers' requests our kits are split in two:

- The Starterkit contains the Gateway UNIGATE® CL in accordance with the selected Bus, the corresponding cables, the voltage supply as well as a CD with the software tools and a manual.
- The add-on has been designed to provide a simple master simulation. The add-on is quick to install and easy to handle. The included PC software allows to follow, the data exchange through a serial bus window and a bus windows. Depending on the bus versions there is technical literature included. Also you can use the existing bus master instead of the add-on.



Picture 1: Starterkit (Example PROFIBUS DP)



Picture 2: Add-On
(Example PROFIBUS DPV0)

Technical overview

CANopen  › Complete CANopen-Slave-interface › Max. 32 TPDO and max. 32 RPDO process data objects › Max. 255 Bytes input- and 255 Bytes output data › Baud rate 10kbit/s to 1 Mbit/s › Isolated CANopen interface with 9-pin. D-Sub connector › CANopen peer-to-peer messaging › Generic EDS file	EtherNet/IP 2Port  › EtherNet/IP adapter function › Max. 1060 Bytes input- and 1060 Bytes output data › Baud rate 10 or 100 Mbit/s › Isolated Ethernet interface with 2x RJ45 connector › IT functions: Web server, FTP Server › Generic EDS file 
DeviceNet  › Complete DeviceNet interface › Max. 255 Bytes input- and 255 Bytes output data › Baud rate 125-500 kbit/s › Isolated DeviceNet interface with 5pin. terminal connection › DeviceNet functions: I/O Slave messaging, polling › Generic EDS file	Fast Ethernet  › Complete Fast Ethernet Slave interface › Max. 1024 Bytes input- and 1024 Bytes output data › Baud rate 10 or 100 Mbit/s › Isolated Fast Ethernet interface with 1x RJ45 connector › IT-functions: Web server, FTP Server
EtherCAT®  › 100 Mbit/s Full-Duplex transmission › Isolated EtherCAT interface with 2x RJ45 connector › Supports CANopen communication objects, PDO and SDO › Max. 512 Bytes input- and 512 Bytes output data	LONWorks  › Complete LONWorks slave interface › Max. 512 Bytes input- and 512 Bytes output data, 62 In and Out SNVTs › Baud rate FTT-10A, 78 kBit/s › Isolated LONWorks interface with 4pin. Screw connector › Fixed Neuron ID



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Modbus TCP

Art.-No.

● V3681 ● ⚡ V3862
● V3778 ● ⚡ V3872



- › Complete Modbus-TCP slave interface
- › Max. 252 Bytes input- and 252 Bytes output data
- › Isolated Ethernet interface

MPI

Art.-No.

● V3556 ● ⚡ V3864
● V3779 ● ⚡ V3874



- › Complete MPI slave interface
- › Max. 92 Bytes input- and output data
- › Baud rate adjustable via script
- › Isolated MPI interface with 9-pin. D-sub connector

PROFIBUS

Art.-No.

● V3553 ● ⚡ V3649
● V3781 ● ⚡ V3876



- › Complete PROFIBUS-DP slave interface
- › Max. 244 Bytes input- and 244 Bytes output data, max. 488 Bytes total
- › PROFIBUS address adjustable via rotary switch
- › Automatical Baud rate recognition (9600 bit/s – 12 Mbit/s)
- › Isolated PROFIBUS interface with 9-pin. D-sub connector
- › Generic GSD file

General specifications:

- serial interfaces
RS232, RS485, RS422
- Baud rates: 110 bps to 625 Kbaud
- Debug interface
- 2 rotary coding switches on the serial side for free use of the customer
- Operating voltage: 10 to 33Volts
- Dimensions: 23 x 115 x 100 mm (W x D x H), without connector
- Weight approx. 140 g
- DIN rail IP20
- Storage temperature:
-40°C to +85°C
- Operating temperature:
-40°C to +85°C, variants with RJ45 socket
-25°C to +85°C
- Humidity 0 % to 95 % / non condensing
- CE and bus-specific certifications
- RoHS
- Reach

Delivery

- Each unit is supplied in a single pack
- Bulkpacks and special designs on request

● Deuschmann standard
● Grey housing

● ⚡ with galvanic isolation
● ⚡ with galvanic isolation

Technical overview

PROFINET 2Port		Art.-No.	● V3818 ●  V3866 ● V3859 ●  V3877
	› Complete PROFINET-IO-Device interface (slave) › Max. 1440 Bytes input and max. 1440 Bytes output data › Isolated PROFINET interface with 2x RJ45 connector (integrated switch) › 100 Mbit Full-Duplex transmission › 32-Bit microprocessor for fast response time › Generic GSD file		
			
RS		Art.-No.	● V3546 ●  V3839 ● V3783 ●  V3878
	› Complex/proprietary protocol implementation based on RS-interface (232/485/422) › Max. 1024 Bytes input and max. 1024 Bytes output data › Modbus RTU/ASCII (master or slave, 3964 oder 3964R and RK512) › Galvanic isolation of the fieldbus RS-side		

● Deutschmann standard
● Grey housing

●  with galvanic isolation
●  with galvanic isolation

Your notes



Deutschmann

your ticket to all buses

General specifications:

- serial interfaces
RS232, RS485, RS422
- Baud rates: 110 bps to 625 Kbaud
- Debug interface
- 2 rotary coding switches on the serial side for free use of the customer
- Operating voltage: 10 to 33Volts
- Dimensions: 23 x 115 x 100 mm (W x D x H), without connector
- Weight approx. 140 g
- DIN rail IP20
- Storage temperature: -40°C to +85°C
- Operating temperature: -40°C to +85°C, variants with RJ45 socket -25°C to +85°C
- Humidity 0 % to 95 % / non condensing
- CE and bus-specific certifications
- RoHS
- Reach

Delivery

- Each unit is supplied in a single pack
- Bulkpacks and special designs on request

Deutschmann - product line overview

ALL-IN-ONE-BUS NODE UNIGATE® IC/IC2 – Ready-to-install



- › Easy integration into your own electronics
- › Module consists of standard components
- › Connection to your host processor via UART or SPI
- › Flexible protocol adaption via Deutschmann script language
- › Standard protocols like Modbus, 3964R, etc. included
- › Designed and manufactured in Germany

UNIGATE® CX - Flexible Gateways to make incompatible networks compatible



- › Modular Gateway concept
- › Currently approx. 120 versions available
- › Easy configuration
- › Wide voltage and temperature range
- › Designed and manufactured in Germany

UNIGATE® MB - For all devices with Modbus RTU interface



- › RS232, RS485- and RS422 interfaces on Board
- › Easy configuration
- › Modbus RTU (master/slave), Modbus ASCII (master/slave)
- › Up to 24 Modbus requests configurable
- › Modern, slim DINrail
- › Designed and manufactured in Germany



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ELECTRONIC CAM CONTROLS - Still an essential tool



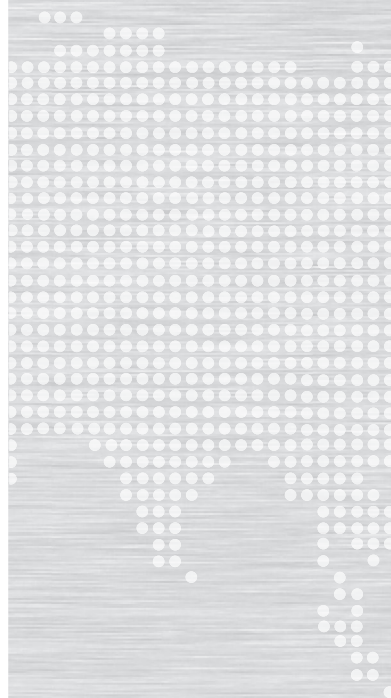
- › Diverse devices
- › Logic functionalities
- › Dynamic idle time compensation
- › Short, constant cycle times and a high number of outputs

➤ **Protocol Converter**

➤ **Embedded systems**

➤ **Gateways**

➤ **Electronic Cam Controls**



Global availability



The company

Deutschmann Automation, a German company based in Bad Camberg is working in the automation technology since 1976 and became known with cam controls in the 1980s.

In 1989 Deutschmann Automation started operating in the fieldbus technology. The development of one's first own bus system DICNET was an essential step. Since 1996 different fieldbus and Industrial Ethernet products are offered under the brand name UNIGATE®.

Thanks to a competent quality management and continuous enhancement Deutschmann became one of the leading suppliers in the automation industry. The entire development and manufacturing takes place in Germany.

We offer workshops for our All-In-One Bus nodes of the UNIGATE® IC series and the Software tool Protocol Developer. In these workshops you will learn everything you need to know about our products and how you can easily realize your projects with Deutschmann.

For all products the necessary documents and tools can be found, free of cost, on www.deutschmann.com. Furthermore on the Deutschmann Technology Wiki, wiki.deutschmann.de, technological information is easily accessible for our customers and users, cross-linking application know-how and ensuring that the information is up to date.

Our experts in development, sales and support have the right solution for your demands.



Deutschmann

your ticket to all buses



UNIGATE® CL

■ Protocol Converter
for all devices with a
serial interface



UNIGATE® IC

■ Easy integration
into your own
electronics



UNIGATE® CX

■ Making incom-
patible networks
compatible

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info@deutschmann.de
www.deutschmann.com

ELECTRONIC CAM CONTROLS



**FAST SWITCHING -
EVEN IN CASE OF DYNAMIC SPEEDS**

- Conventional cam controls
- Multifunctional devices
- Expandable devices for DIN-rail mounting
- High-speed devices
- Cam controls integrated in encoder housing
- Cam controls with Fieldbus- and PROFIBUS interface
- Operating and display terminals
- Comfortable PC-programming
- Absolute rotary encoders
- Pre-assembled cables
- Dynamic switching accelerators

CANopen

DeviceNet

EtherCAT

EtherNet/IP

ETHERNET TCP/IP

Modbus

MPI

PROFIBUS

PROFINET



Deuschmann
your ticket to all buses

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Foreword

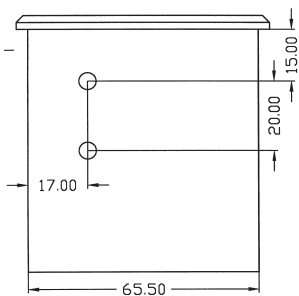
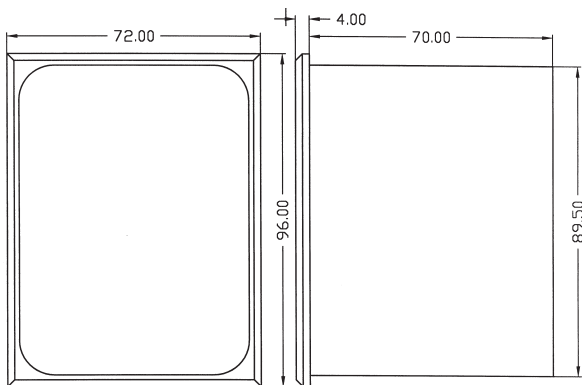
- Development and production of electronic cam controls since 1982.
- Since 1990 the brand names LOCON and ROTARNOCK stand for reliable and fast electronic cam controls.
- LOCON – The classical concept of separate control and separate actual value acquisition.
- ROTARNOCK – The intelligent solution: cam control and actual value acquisition combined in one housing.
- There is no standing still and we are continuously working on the further development of our products and the expansion of our product range. Thus the LOCON and ROTARNOCK series were adapted to the current market needs with new models. We were inspired especially through the implementation of the Fieldbus connection associated with modern control and configuration concepts.



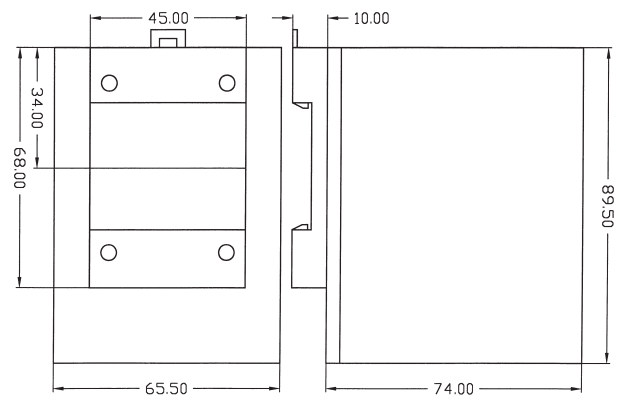
LOCON 16 and LOCON 17

Multifunctional and compact

The compact solution in DIN-format 72 mm x 96 mm (width x depth) at an overall depth of 70 mm only. With its integrated operating keyboard the unit is installed into the front plate; the version without keyboard is mounted on a DIN-rail. The „4-key user interface“ has proven its worth many thousand times and it can be operated easily after a short training period. The basic version features 16 outputs, 16 programs, blockwise idle time compensation.

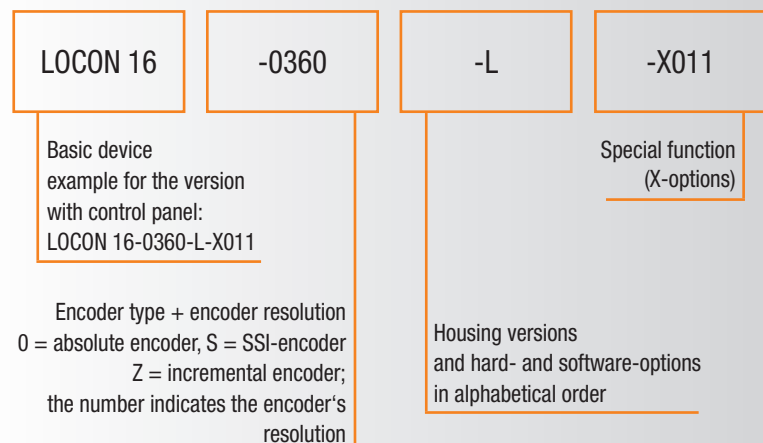


LOCON 16, 17 mit Frontplatte



LOCON 16PM, LOCON 17PM for DINrail

Structure of the order code



Note:

For the incremental encoder version (Z) the encoder resolution only has to be indicated in connection with the option speed indication.

Basic device

Option	Meaning	Excludes or only possible with the option	L16	L17
0360	Version for absolute encoder parallel 360 inf./rev.	All other resolutions	●	●
01000	Version for absolute encoder parallel 1000 inf./rev.	All other resolutions	●	●
04096	Version for absolute encoder parallel 4096 inf./rev.	All other resolutions	-	●
On	Version for absolute encoder parallel (n=encoder's resolution)	All other resolutions	-	●
S360	Version for SSI-absolute encoder 360 inf./rev.	All other resolutions	●	●
S1024	Version for SSI-absolute encoder 1024 inf./rev.	All other resolutions	●	●
S4096	Version for SSI-absolute encoder 4096 inf./rev.	All other resolutions	-	●
MT	Version for SSI-absolute encoder 24 bit	All other resolutions	-	-
Zn	Version for incremental encoder (n=indicate encoder's resolution at speed indication): counting range in increments	All other resolutions	1024	4096
PM	Version available without integrated control panel		②	②

Hard- and software-options

Code	Meaning	Excludes or only possible with the option	L16	L17
Cn	Automatic clear position (n=enter the required value)	Only for devices with Z	■	■
D	Position / speed indication Switchover takes place depending on the speed indication		■	●
H	Faster processor for lower cycle times		-	■
I	Bitwise idle time compensation	Not with L, LT	-	●
L	Blockwise idle time compensation	Not with L, LT	●	x
LT	Blockwise idle time compensation with separate turn on/turn-off time	Not with I, L	-	■
P	Screw-plug-connector for an encoder connection instead of a connection via a 25-pole D-SUB		■	■
P108	Switching capacity 1A on 8 outputs		■	■
P116	Switching capacity 1A on 16 outputs		■	■
R	Run control function on output 16		■	■
T	Timer/program switch		x	x
U	Direction cams depending on the sense of rotation		■	■
V0	Rotation speed/position change-over definable by the customer	Not with Vn, requires D	■	■
Vn	Locked outputs (outputs can only be changed by entering a password); n=number of locked outputs; max. 15 possible	Requires option A; not with option V0	■	■
Y	Partial idle time compensation	Available with I or L	-	x
232	Interface RS232	Not with option 485	①	①
485	Interface RS485-DICNET® (network of up to 16 DA cam controls)	Not with option 232	①	①
X004	Four output-enable inputs	Not with P	-	■
X011	Speed indication scaled to customer's value	Requires option D, O, S	■	■
X?	Customized version	On request	■	■
Z	Encoder type incremental 24V signal voltage		x	x

● = Standard

■ = Optionally for an additional charge

x = Optionally at no additional charge

① = RS232/485 switchable on board

② = Device is alternatively available with or without integrated control panel

Technical data LOCON 16 and LOCON 17

	Characteristics	LOCON 16	LOCON 16PM	LOCON 17	LOCON 17PM
Available versions	- with integrated keypad - without integrated keypad	• -	- •	• -	- •
Installation	- front panel installation - DINrail	• -	- •	• -	- •
Outputs		16	16	16	16
Storable outputs		16	16	16	16
Data records (incl. output names) (number of switch-on-/switch-off points)		1936	1936	1936	1936
Actual value acquisition	- incremental encoder - counting range incremental - absolute encoder parallel Gray excess - absolute encoder parallel Gray code to bit-number - absolute encoder SSI Gray code - counting/direction inputs for incremental encoder - timer function (value is generated internally)	1024 360, 1000 - 360, 1024 ■ 1-65535 ms	1024 360, 1000 - 360, 1024 ■ 1-65535 ms	4096 360, 720, 1000, 3600 9...12 360, 1024, 4096 ■ 1-65535 ms	4096 360, 720, 1000, 3600 9...12 360, 1024, 4096 ■ 1-65535 ms
Idle time compensation (dynamic cam)	- blockwise - bitwise - separate I/O - entering the idle time in steps - partial idle time compensation	• - - 1ms - 999ms -	• - - 1ms - 999ms -	x • ■ 1ms - 999ms x	x • ■ 1ms - 999ms x
Cycle time in some configurations the idle time might be higher, in case of using the high-speed-version it might also be lower	- without idle time compensation (ITC) - with blockwise ITC - with bitwise ITC - with blockwise I/O ITC - high-speed-version for a lower cycle time	500µs 500µs - - -	500µs 500µs - - -	150µs 200µs 550µs 550µs ■ ab 60µs	150µs 200µs 550µs 550µs ■ ab 60µs
Software characteristics: zero point offset cams are interchangeable linewise angle/time cams direction cams lockable outputs	- within the complete range	• • - ■ ■	• • - ■ ■	• • - ■ ■	• • - ■ ■
Run-control-function		■ ²⁾	■ ²⁾	■ ²⁾	■ ²⁾
Speed indicator		■ ¹⁾	■ ¹⁾	■ ¹⁾	■ ¹⁾
Inputs	- for encoder signal - for program selection - for program change - for program release	10 4 1 1	10 4 1 1	12 4 1 1	12 4 1 1
Logic functions	- logic inputs - extensive logic functions - shift register	- - -	- - -	■ 4 enable-function (X04) -	■ 4 enable-function (X04) -
Programming	- teach-in programming - via integrated keypad - via Deuschmann terminal - via PC (WINLOC 32®-software) - via cam control profile	• • • • •	• - • • •	• • • • •	• - • • •
Data backup	- EEPROM (min. 100 years) - via transfer program on PC	• •	• •	• •	• •
Display seven-segment indication	- for position - for speed	6 digits • ■ ¹⁾	- - -	6 digits • ■ ¹⁾	- - -

	Characteristics	LOCON 16	LOCON 16PM	LOCON 17	LOCON 17PM
Status display for	- outputs - programming status - external program selection - SSI-Control - error-display - run-Control	● ● ● - ● ■	● ● ● - ● ■	● ● ● - ● ■	● ● ● - ● ■
Interface	- RS232 - RS485-DICNET®	● switchable ● switchable	● switchable ● switchable	● switchable ● switchable	● switchable ● switchable
Voltage supply 24VDC +/-20%		●	●	●	●
Max. power consumption (without load)		200mA	200mA	200mA	200mA
Output driver max. load	- 300 mA each output, max. 1A for 8 outputs at a time at 25°C ambient temperature - 700 mA each output, temporarily also 1A each output - outputs positive switched, short-circuit-proof	● ■ 8/16 outputs ●	● ■ 8/16 outputs ●	● ■ 8/16 outputs ●	● ■ 8/16 outputs ●
Analog outputs	- current output - voltage output	- -	- -	- -	- -
Dimensions basic device in mm	- width - height - depth	72 96 70	65,5 89,5 74	72 96 70	65,5 89,5 74
Front panel cutout		90 x 66	-	90 x 66	-
Protection class		IP54	IP20	IP54	IP20
Weight in grams		580	580	580	580

● = Standard

■ = Optionally for an additional charge

x = Optionally at no additional charge

¹⁾ = Automatic switchover between position and speed (speed-dependent)

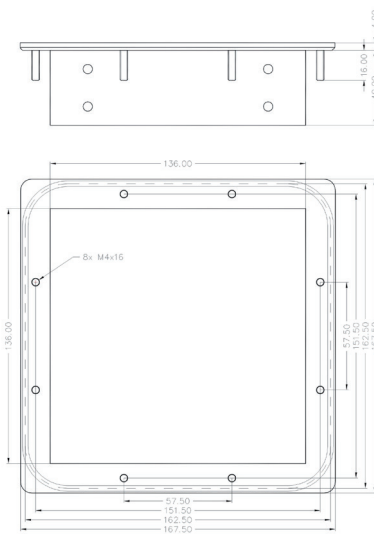
²⁾ = Run-control function is assigned to output 16

LOCON 24 and 48

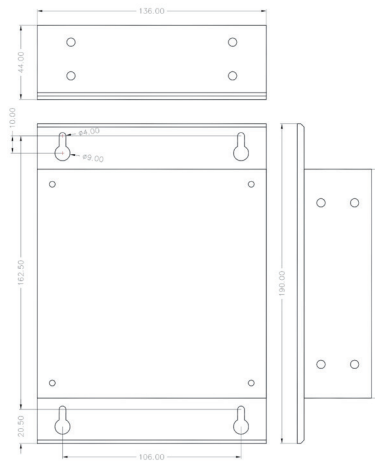
The Multifunctionals

Compact series with DIN size of 144 x 144 mm. With an overall depth of 44 mm only, these models feature 24, 32 or 48 outputs. 64 programs can be selected either via the integrated control panel or that can be selected externally, a memory of 1000 data records as well as an extensive range of functions round off the features.

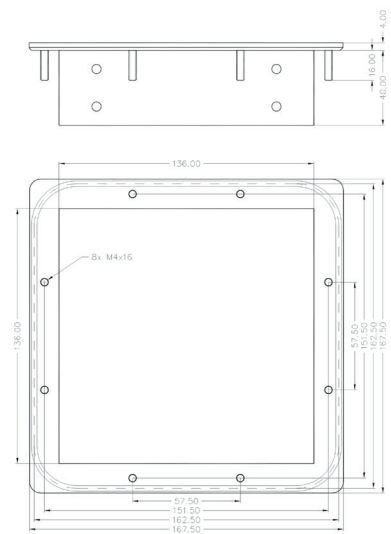
The version with integrated control panel for front panel installation (either IP54 or IP65) offers the operating convenience you are looking for: Seven-segment display for position and speed, 2-line LCD with a multi-lingual, user-configurable menu, and both, a decimal keypad and a function keypad.



LOCON 24, 48 with front panel IP65



LOCON 24, 48 PM for mounting plate



LOCON 24, 48 with front panel IP54

Structure of the order code

LOCON 24

-0360

-I

-IP65

Basic device, example for the version with control panel:
LOCON 24-0360-I-IP65

Special functions
(X-options)

Encoder type + encoder resolution
0 = absolute encoder, S = SSI-encoder
Z = incremental encoder;
the number indicates the encoder's resolution
For incremental encoder versions (Z) the
encoder's resolution for the rotation speed has
to be indicated.

Hard- and software-options in
alphabetical order

Basic device

Option	Meaning	Excludes or only possible with the option	L24	L48
PM	Version for mounting plate without keypad		②	②
0360	Version for absolute encoder parallel 360 inf./rev.	All other resolutions	•	•
01000	Version for absolute encoder parallel 1000 inf./rev.	All other resolutions	②	•
On	Version for absolute encoder parallel (n=encoder's resolution)	All other resolutions	•	•
S4096	Version for SSI-absolute encoder 4096 inf./ rev.	All other resolutions	•	•
S8192	Version for SSI-absolute encoder 8192 inf./ rev.	All other resolutions	•	•
MT	Version for SSI-absolute encoder 24 Bit (16 mio.)	All other resolutions	•	•
Zn	Version for incremental encoder 24V signal voltage (n=indicates encoder's resolution at speed indication): counting range in increments		16384	8192

Hard- and software-options

Code	Meaning	Excludes or only possible with the option	L24	L48
A32	Extension to 32 outputs		■	-
D	Binary coded speed indication on the 8 upper outputs		■	■
G	Encoder monitoring (for positively counting adjusted devices only)		■	■
H08	Highly dynamic idle time compensation on the first 8 outputs, all other outputs can be compensated bit by bit	Not with L, LT	■	■
I	Bitwise idle time compensation	Not with L, LT	•	•
IP65	Front plate; version IP65		■	■
L	Blockwise idle time compensation	Not with I, LT	x	x
LT	Blockwise idle time compensation with separate turn on and turn off time	Not with I, L	■	■
N	Extension to 1500 data records		■	■
U	Direction cams		■	■
T	Timer/programmable switch		x	x
Vn	Locked outputs		■	■
W16/W32	Angle/time cams on the first 16/32 outputs possible (restriction: encoder resolution max. 13 Bit)		■	■
X?	Customized version	On request	■	■

- = Standard
- = Optionally for an additional charge
- x = Optionally at no additional charge
- ① = RS232/485 switchable on board
- ② = The unit is alternatively available with or without integrated control panel

Technical data LOCON 24 and LOCON 48

	Characteristics	LOCON 24	LOCON 24PM	LOCON 48	LOCON 48PM
Available versions	- with integrated keypad - without integrated keypad	• -	- •	• -	- •
Installation	- front panel installation - mounting plate - DINrail	• • without front -	- • without front -	• • without front -	- • without front -
Output		24 ■ 32	24 ■ 32	48 -	48 -
Storable programs		64	64	64	64
Data records (incl.output) (number of switch-on/switch-off points)		1000 ■ 1500	1000 ■ 1500	1000 ■ 1500	1000 ■ 1500
Actual value acquisition	- incremental encoder - counting range incremental - absolute encoder Gray excess - absolute encoder parallel Gray code to bit number - absolute encoder SSI Gray code (at option MT) - count/direction inputs for incremental encoders - timer function (value is generated internally)	16384 360, 720, 1000, 3600, 7200 2...13 2...13, (24) ☒ 1-65535 ms	16384 360, 720, 1000, 3600, 7200 2...13 2...13, (24) ☒ 1-65535 ms	8192 360, 720, 1000, 3600, 7200 2...13 2...13, (24) ☒ 1-65535 ms	8192 360, 720, 1000, 3600, 7200 2...13 2...13, (24) ☒ 1-65535 ms
Idle time compensation (dynamic cam)	- blockwise - bitwise - separate I/O - entering the idle time in steps - partial idle time compensation - highly dynamic ITC for number of outputs	x • ■ 1 ms - 999ms - ■ 8	x • ■ 1 ms - 999ms - ■ 8	x • ■ 1 ms - 999ms - ■ 8	x • ■ 1 ms - 999ms - ■ 8
Cycle time In some configurations the cycle time may be higher, in case of using the high-speed version it may also be lower.	- without idle time compensation (ITC) - with blockwise ITC - with bitwise ITC - with blockwise I/O ITC	75µs 150µs 300µs 250µs	75µs 150µs 300µs 250µs	100µs 200µs 500µs 400µs	100µs 200µs 500µs 400µs
Software characteristics: zero point offset cams are interchangeable linewise angle/time cams direction cams lockable outputs scalable encoder value	- within the complete range	• • ■ 16/32 outputs ■ ■ •	• • ■ 16/32 outputs ■ ■ •	• • ■ 16/32 outputs ■ ■ •	• • ■ 16/32 outputs ■ ■ •
Run-control-function		• (relay)	• (relay)	• (relay)	• (relay)
Speed indicator		•	•	•	•
Input	- for encoder signal - for program selection - for program change - for program release	13 6 1 1	13 6 1 1	13 6 1 1	13 6 1 1
Programming	- teach-in programming - via integrated keypad - via Deutschmann terminal - via PC (WINLOC 32®-software) - via cam control profile	• • • • •	• - • • •	• • • • •	• - • • •
Data backup	- EEPROM (min. 100 years) - via transfer program on PC	• •	• •	• •	• •
Display seven-segment indication	- for position - for speed	10 digits • •	- - -	10 digits • •	- - -

	Characteristics	LOCON 24	LOCON 24PM	LOCON 48	LOCON 48PM
Status display for	- outputs - programming status - external program selection - SSI-control - error-display - run-control	• • • • •	• • • • •	• • • • •	• • • • •
Interface	- RS232 - RS485-DICNET®	• switchable • switchable	• switchable • switchable	• switchable • switchable	• switchable • switchable
Voltage supply 24VDC +/-20%		•	•	•	•
Max. power consumption (without load)		200mA	200mA	200mA	200mA
Output driver max. load	- 300 mA per output, max. 1A for 8 outputs at a time at 25°C ambient temperature - 700 mA per output, temporarily also 1A per output - outputs positive switching, short-circuit- proof	• ■ 8/16 outputs •	• ■ 8/16 outputs •	• ■ 8/16 outputs •	• ■ 8/16 outputs •
Dimensions basic device in mm	- width - height - depth	144 144 44	144 144 44	144 144 44	144 144 44
Front panel cutout		138 x 138	-	138 x 138	-
Protection class		IP20 ¹⁾ IP54 ²⁾ ■ IP65 ³⁾	IP20 ¹⁾ - -	IP20 ¹⁾ IP54 ²⁾ ■ IP65 ³⁾	IP20 ¹⁾ - -
Weight in grams		1000	1000	1000	1000

• = Standard

■ = Optionally for an additional charge

x = Optionally for no additional charge

☒ = Freely configurable

¹⁾ = Without housing

²⁾ = Standard version for front panel installation

³⁾ = Version for front panel installation IP64

LOCON 200

Fast and modular

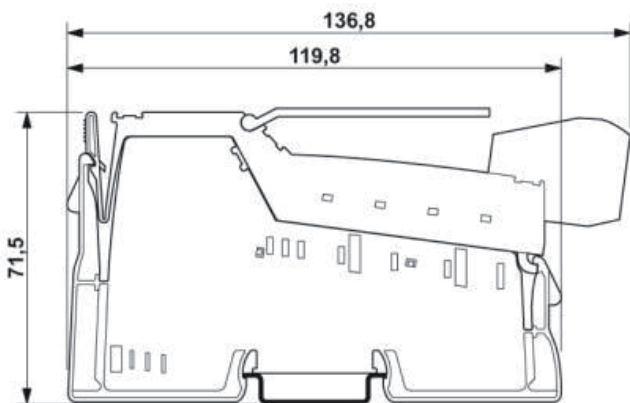
LOCON 200 consists of a basic unit with the tasks of the central actual-value acquisition, communication with the periphery, voltage supply and some further administration topics.

The complete performance capacity is achieved by using the expansion module with 8 I/Os each. Through the consistent arrangement as I/Os the basic module as well as the expansion unit achieve highest possible flexibility and best possible utilization of the hardware.

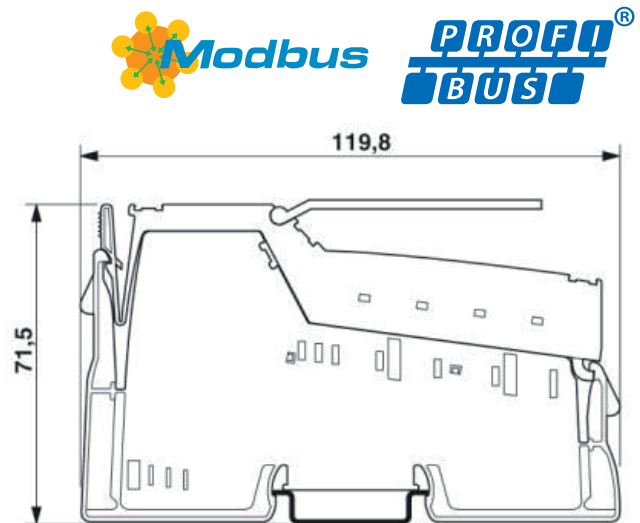
If, for instance only 8 externally selectable programs are required, the otherwise usually reserved pins are not useless but they can be used elsewhere.

The system is limited to one basic unit and max. 16 I/O-modules. Through the use of a separate processor for each module the cycle time in the overall system remains constant and depends upon configuration, encoder type, resolution as well as used software-performance characteristics. All modern actual value acquisition systems from incremental to multiturn encoder are supported. Alternatively the device can also be operated as program control unit (timer function). The time basis is generated internally and can be adjusted in the range from 1 to 65535 ms.

The connection to Fieldbus systems is as a matter of course as is the intuitive configuration via a PC-program. The alternative operation through an external terminal or the complete integration in the Fieldbuses come naturally with us. A version with integrated PROFIBUS DP or Modbus RTU is optionally available.



LOCON 200
Overall width 48.8 mm



LOCON 200-I/O8 Expansion module
Overall width 12.2 mm

Expansion module I/O8

With this module LOCON 200 is expanded by 8 I/Os up to the maximum configuration level of 144 I/Os step by step. From a configuration level of more than 8 pieces LOCON 200, one NT module for LOCON 200-Out I/O8 must be used.

The expansion module contains its own processor. Therefore, the switching accuracy (cycle time) is independent of the LOCON 200(-PB)/(-MB) basic module or in other words: the configuration-dependent cycle time remains the same independent of the configuration level.

In the I/O8, the idle time can be configured in a module-related way. Besides, the device supports logic functions. That way logic connections can be realized in a module-related manner.

LOCON 100

Powerful and expandable

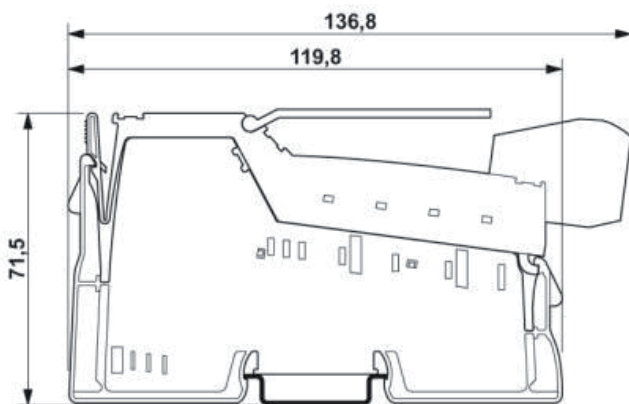
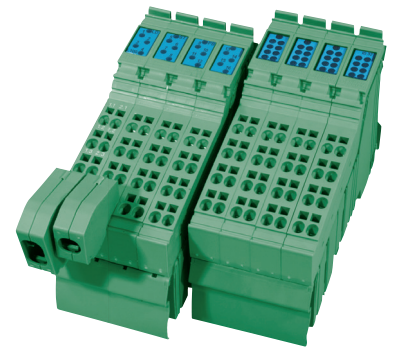
LOCON 100 consists of a basic unit with a total of 16 I/Os. They can be configured depending on the respective application. If, for instance, only a 9-bit encoder is required, then the other encoder connections must not remain useless but can be put to practical use for other applications.

The system can be expanded by one module to a total of 48 I/Os which are configured in the same way. So you can assemble your cam control individually and you are totally free regarding outputs, inputs and utilization of functions such as external program selection, encoder type and resolution etc.

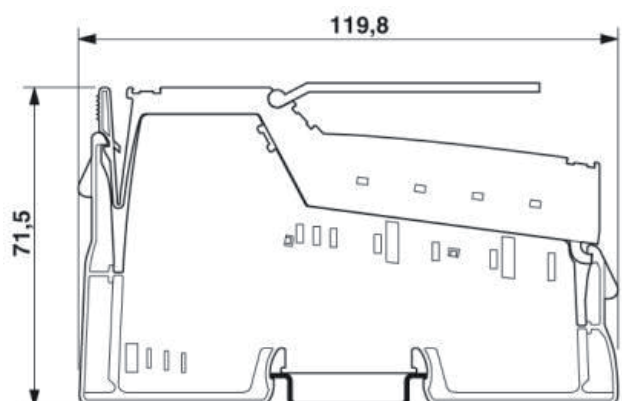
LOCON 100 as well features connection facilities for all modern actual-value acquisition systems. Alternatively the device can also be operated as program control unit (timer function). The time basis is generated internally and can be adjusted in the range from 1 to 65535 ms. The software gives you the freedom to choose from various types of idle time compensation (dynamic cam). No matter whether angle-/angle-cams or angle-/time-cams are used - everything can be configured and combined.

The modern control-concept is convincing and offers something for all tastes: Modern PC GUI, that can be connected to any Fieldbus or the easy-to-handle terminal GUI. The device with integrated PROFIBUS DP or Modbus RTU is optionally available.

The device is optionally available with 1700 data records (option N) instead of 1000 data records (standard). Variants with an integrated PROFIBUS-DP or Modbus RTU interface are also available.



LOCON 100
Overall width 48.8 mm



LOCON 100-A32 Expansion module
Overall width 48.8 mm

Expansion module A32

With this module the basic device LOCON 100(-PB)/(-MB) is expanded by 32 to a total of 48 I/Os. The expansion module does not contain an own processor. Therefore, the switching accuracy (cycle time) depends on the LOCON 100(-PB)/(-MB), its configuration and programmed data records.

LOCON 90

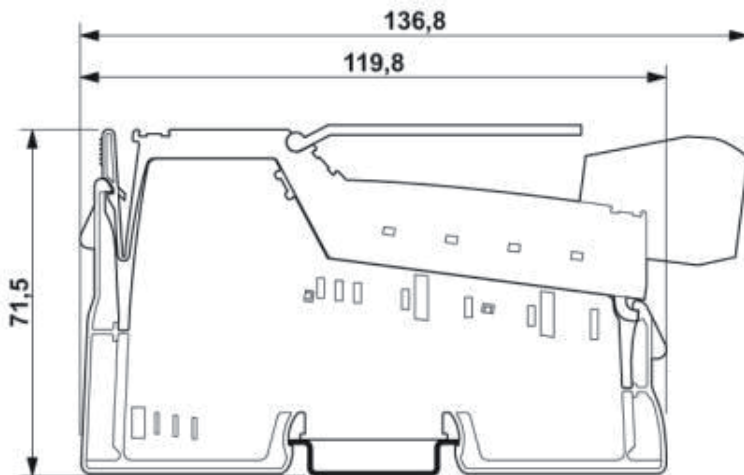
Powerful and reasonably priced

LOCON 90 is a less expensive version of LOCON 200 and LOCON 100. Equipped with 16 I/Os – of which a maximum of 8 can be configured as outputs – this unit is predestined for simple applications.

Absolute encoders can be connected via SSI up to a resolution of 13 bit. In case some of the I/Os are configured as inputs, these can e.g. be used as external program selection.

LOCON 90 as well features connection facilities for all modern actual-value acquisition systems. Alternatively the device can also be operated as program control unit (timer function). The time basis is generated internally and can be adjusted in the range from 1 to 65535 ms.

The software gives you the freedom to choose from various types of idle time compensation (dynamic cam). No matter whether angle-/angle-cams or angle-/timecams are used - everything can be configured and combined. LOCON 90 is operated via the PC-software WINLOC 32®.



LOCON 90
Overall width 48.8 mm

Model Overview LOCON 90 / 100 / 200

Description	Explanation	Order number
LOCON 90		V3542
LOCON 100	Basis module	V3374
LOCON 100-MB	Basis module with Modbus RTU-interface	V3589
LOCON 100-PB	Basis module with PROFIBUS-interface	V3397
LOCON 100-A32	Expansion module with 32 I/Os for LOCON 100/100-PB	V3425
LOCON 200	Basis module	V3485
LOCON 200-MB	Basis module with Modbus RTU-interface	V4310
LOCON 200-PB	Basis module with PROFIBUS-interface	V3487
LOCON 200-Out I/O8	Expansion module with 8 I/Os for LOCON 200/200-PB	V3486
Logic	Logic function for LOCON 100-PB, LOCON 200, LOCON 200-PB	V3426
NT-Module	for LOCON 200-Out I/O8 power supply	V4082

Technical data LOCON 200

	Characteristics	LOCON 200	LOCON 200-MB	LOCON 200-PB	LOCON 200-I/O8
Available versions	without integrated keypad	•	•	•	•
Installation	DINrail mounting	•	•	•	•
Outputs		16 I/Os 144 (+16 x I/O8)	16 I/Os ¹⁾ 112 (+14 x I/O8)	16 I/Os 80 (+8 x I/O8)	8 I/Os -
Storable programs		256	256	64	-
Data records (incl. output names) (number of switch-on/switch-off points)		1000 + 232 per module	808 + 232 pro Modul	1000	232
Actual value acquisition	- incremental encoder - counting range incremental - absolute encoder Gray excess - absolute encoder parallel Gray code to bit number - absolute encoder SSI Gray code - count/direction inputs for incremental encoders - timer function (value is generated internally)	8192 / 16 Mio. 360, 720, 1000, 3600, 7200 2...13 2...13, 24, 25 ☒ 1-65535 ms	8192 / 16 Mio. 360, 720, 1000, 3600, 7200 2...13 2...13, 24, 25 ☒ 1-65535 ms	8192 / 16 Mio. 360, 720, 1000, 3600, 7200 2...13 2...13, 24, 25 ☒ 1-65535 ms	dependent L200 (-PB)/(-MB) dependent L200 (-PB)/(-MB) dependent L200 (-PB)/(-MB) dependent L200 (-PB)/(-MB) dependent L200 (-PB)/(-MB)
Idle time compensation (dynamic cam)	- blockwise - bitwise - separate I/O - entering the idle time in steps	☒ • ☒ 0,2ms - 999ms	☒ • ☒ 0,2ms - 999ms	☒ • ☒ 0,2ms - 999ms	☒ • ☒ 0,2ms - 999ms
Cycle time In some configurations the cycle time might be higher, in case of using the high-speed version it might also be lower.	- without idle time compensation (ITC) - with blockwise ITC - with bitwise ITC - with I/O ITC - high speed version for lower cycle time	dyn. from 500µs dyn. from 500µs dyn. from 500µs dyn. from 500µs ☒	dyn. ab 500 µs dyn. ab 500 µs dyn. ab 500 µs dyn. ab 500 µs	dyn. from 500µs dyn. from 500µs dyn. from 500µs dyn. from 500µs ☒	dyn. from 55µs dyn. from 65µs dyn. from 85µs dyn. from 115µs ☒
Software characteristics: zero point offset cams are interchangeable linewise angle/time cams direction cams scalable encoder value	- within the complete range	• • ☒ ☒ ☒	• • ☒ ☒ ☒	• • ☒ ☒ ☒	via basis L200 via basis L200 ☒ ☒ via basis L200
Run-control-function		☒	☒	☒	-
speed indicator		•	•	•	via basis L200
Inputs	- for encoder signal - for program selection - for program change - for program release	☒ 2...13 ☒ 1...8 ☒ 1 ☒ 1	☒ 2...13 ☒ 1...8 ☒ 1 ☒ 1	☒ 2...13 ☒ 1...8 ☒ 1 ☒ 1	- - - -
Logic functions	- logic inputs - extensive logic functions - shift register	■ 16 • - •	- - - -	■ 16 • • •	■ 8 • • •
Programming	- teach-in-programming - via Deuschmann terminal - via PC (WINLOC 32®-software) - via cam control profile - others	• • • • -	• - • • Modbus-RTU	• • • • PLC at connection	s. L200 (-PB)/(-MB) s. L200 s. L200 (-PB)/(-MB) s. L200 (-PB)/(-MB) s. L200 (-PB)/(-MB)
Data backup	- EEPROM (min. 100 years) - via transfer program on PC	• •	• •	• •	• •
Status display	- outputs - programming status - external program selection - SSI-control - error-display - run-control (if configured) - Fieldbus status	• - - - - - -	• - - - • • -	• - - - • • bus status	• - - - • • -

¹⁾These 16 I/Os can't be used as output.

	Characteristics	LOCON 200	LOCON 200-MB	LOCON 200-PB	LOCON 200-I/O8
Interface	- RS232 - RS485-DICNET® - RS232-Modbus - RS485-Modbus - integrated PROFIBUS-interface	● switchable ● switchable - - -	● switchable - ● switchable ● switchable -	● - - - ●	s. L200 (-PB)/(-MB) s. L200 (-PB)/(-MB) s. L200 (-PB)/(-MB) s. L200 (-PB)/(-MB) s. L200 (-PB)/(-MB)
Voltage supply 24VDC +/-20%		●	●	●	via basis L200
Max. power consumption (without load)		200mA	200mA	200mA	200mA
Output driver max. load	- 300 mA each output, max. 1A for 8 outputs each - 700 mA each output, temporarily also 1A each output - plus switching outputs, short circuit-proof	- ● ●	- ● ●	- ● ●	- ● ●
Analog outputs	- current output - voltage output	- -	- -	- -	- -
Dimensions basic device in mm	- width - height - depth	48,8 71,5 120	48,8 71,5 120	48,8 71,5 120	48,8 71,5 120
Protection class		IP20	IP20	IP20	IP20
Weight in grams		220	220	230	200

- = Standard
- = Optionally for an additional charge
- x = Optionally at no additional charge
- ☒ = Freely configurable

Technical data LOCON 100

	Characteristics	LOCON 100	LOCON 100-MB	LOCON 100-PB	LOCON 100-A32
Available versions	without integrated keypad	•	•	•	•
Installation	DINrail mounting	•	•	•	•
Outputs		16 I/Os 48 (with LOCON 100-A32)	16 I/Os 48 (with LOCON 100-A32)	16 I/Os (32 SW outputs) 48 (with LOCON 100-A32)	32 -
Storable programs		64	64	64	-
Data records (incl.output names) (number of switch-on/switch-off points)		1000 ■ 1700	1000 ■ 1700	1000 ■ 1700	Data stored in L100 (-PB/-MB)
Actual value acquisition	- incremental encoder - counting range incremental - absolute encoder Gray excess - absolute encoder parallel Gray code to bit number - absolute encoder SSI Gray code - count/direction inputs for incremental encoders - timer function (value is generated internally)	8192/16 Mio. 360, 720, 1000, 3600, 7200 2...13 2...13, 24, 25 ☒ 1-65535 ms	8192/16 Mio. 360, 720, 1000, 3600, 7200 2...13 2...13, 24, 25 ☒ 1-65535 ms	8192/16 Mio. 360, 720, 1000, 3600, 7200 2...13 2...13, 24, 25 ☒ 1-65535 ms	dependent L100 (-PB/-MB) dependent L100 (-PB/-MB) dependent L100 (-PB/-MB) dependent L100 (-PB/-MB) dependent L100 (-PB/-MB)
Idle time compensation (dynamic cam)	- blockwise - bitwise - separate I/O - entering the idle time in steps	☒ • ☒ 0,2ms - 999ms	☒ • ☒ 0,2ms - 999ms	☒ • ☒ 0,2ms - 999ms	dependent L100 (-PB/-MB) dependent L100 (-PB/-MB) dependent L100 (-PB/-MB) via basis L100
Cycle time In some configurations the cycle time might be higher, in case of using the high-speed version it might also be lower!	- without idle time compensation (ITC) - with blockwise ITC - with bitwise ITC - with I/O ITC - high speed version for lower cycle time	dyn. ab 100µs dyn. ab 130µs dyn. ab 165µs dyn. ab 190µs -	dyn. ab 140µs dyn. ab 170µs dyn. ab 205µs dyn. ab 230µs -	dyn. ab 250µs dyn. ab 280µs dyn. ab 315µs dyn. ab 340µs -	L100 + 50µ L100 + 50µ L100 + 50µ L100 + 50µ -
Software characteristics: zero point offset cams ar interchangeable linewise angle/time cams direction cams scalable encoder value	- within the complete range	• • ☒ ☒ ☒	• • ☒ ☒ ☒	• • ☒ ☒ ☒	via basis L100 via basis L100 via basis L100 via basis L100 via basis L100
Run-control-function		☒	☒	☒	-
Speed indicator		•	•	•	via basis L100
Inputs	- for encoder signal - for program selection - for program change - for program release	☒ 2...13 ☒ 1...6 ☒ 1 ☒ 1	☒ 2...13 ☒ 1...6 ☒ 1 ☒ 1	☒ 2...13 ☒ 1...6 ☒ 1 ☒ 1	- - - -
Logic functions	- logic inputs - extensive logic functions - shift register	- - -	- - -	☒ • •	- - -
Programming	- teach-in-programming - via Deuschmann terminal - via PC (WINLOC 32®-software) - via cam control profile - others	• • • • -	• - • • Modbus-RTU	• • • • PLC at connection	- - - - s. L100 (-PB/-MB)
Data backup	- EEPROM (min. 100 years) - via transfer program on PC	• •	• •	• •	s. L100 (-PB/-MB) s. L100 (-PB/-MB)
Status display for	- outputs - programming status - external program selection - SSI-control - error-display - run-control (if configured) - Fieldbus status	• - - - • • -	• - - - • • -	• - - - • • bus status	• - - - • - -

	Characteristics	LOCON 100	LOCON 100-MB	LOCON 100-PB	LOCON 100-A32
Interface	- RS232 - RS485-DICNET® - RS232-Modbus - RS485-Modbus - integrated PROFIBUS-interface	● switchable ● switchable - - -	● switchable - ● switchable ● switchable -	● - - - ●	s. L100 (-PB/-MB) s. L100 (-PB/-MB) s. L100 (-PB/-MB) s. L100 (-PB/-MB) s. L100 (-PB/-MB)
Voltage supply 24VDC +/-20%		●	●	●	via basis L100
Max. power consumption (without load)		200mA	200mA	200mA	200mA
Output driver max. load	- 300 mA each output, max. 1A for 8 outputs each - 700 mA each output, temporarily also 1A each output - plus switching outputs, short circuit-proof	- ● ●	- ● ●	- ● ●	- ● ●
Analog outputs	- current output - voltage output	- -	- -	- -	- -
Dimensions basic device in mm	- width - height - depth	48,8 71,5 120	48,8 71,5 120	48,8 71,5 120	48,8 71,5 120
Protection class		IP20	IP20	IP20	IP20
Weight in grams		220	220	220	200

- = Standard
- = Optionally for an additional charge
- x = Optionally at no additional charge
- ☒ = Freely configurable

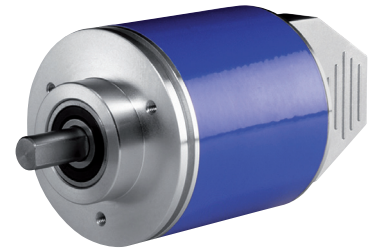
Technical data LOCON 90

	Characteristics	LOCON 90
Available versions	without integrated keypad	•
Installation	DINrail mounting	•
Outputs		8
Storable programs		64
Data records (incl. output names) (number of switch-on/switch-off points)		1000
Actual value acquisition	- incremental encoder - counting range incremental - absolute encoder Gray excess - absolute encoder parallel Gray code to bit number - absolute encoder SSI Gray code - count/direction inputs for incremental encoders - timer function (value is generated internally)	8192 / 16 Mio. 360, 720, 1000, 3600, 7200 2...13 2...13, 24, 25 ☒ 1-65535 ms
Idle time compensation (dynamic cam)	- blockwise - bitwise - separate I/O - entering the idle time in steps	☒ • ☒ 0,2ms - 999ms
Cycle time In some configurations the cycle time might be higher, in case of using the high-speed version it might also be lower.	- without idle time compensation (ITC) - with blockwise ITC - with bitwise ITC - with I/O ITC - high speed version for lower cycle time	dyn. from 100µs dyn. from 130µs dyn. from 165µs dyn. from 190µs
Software characteristics: zero point offset cams are interchangeable linewise angle/time cams direction cams scalable encoder value	- within the complete range	• • ☒ ☒ ☒
Run-control-function		☒
speed indicator		•
Inputs	- for encoder signal - for program selection - for program change - for program release	- ☒ 1...6 ☒ 1 ☒ 1
Logic functions	- logic inputs - extensive logic functions - shift register	- - -
Programming	- teach-in-programming - via Deutschmann terminal - via PC (WINLOC 32®-software) - via cam control profile - others	• • • • -
Data backup	- EEPROM (min. 100 years) - via transfer program on PC	• •
Status display	- outputs - programming status - external program selection - SSI-control - error-display - run-control (if configured) - Fieldbus status	• - - - • • • -
Interface	- RS232 - RS485-DICNET®	• -
Voltage supply 24VDC +/-20%		•
Max. power consumption (without load)		200mA
Output driver max. load	- 300 mA each output, max. 1A for 8 outputs each - 700 mA each output, temporarily also 1A each output - plus switching outputs, short circuit-proof	- • •
Analog outputs	- current output - voltage output	- -
Dimensions basic device in mm	- width - height - depth	12,2 71,5 120
Protection class		IP20
Weight in grams		70

- = Standard
- = Optionally for an additional charge
- x = Optionally at no additional charge
- ☒ = Freely configurable

ROTARNOCK series

With the ROTARNOCK-series Deuschmann Automation took a new innovative path. The entire cam control was integrated in the housing of the absolute encoder. This saves work and money. The wiring of the encoder can be dispensed with entirely. The outputs of the cam control are applied directly to the device via its connector.



The ROTARNOCK 100 is optionally available with integrated PROFIBUS- or PROFINET interface. The device versions with PROFIBUS or PROFINET can be connected to SIEMENS SIMATIC S7 and other PLCs and Soft-PLCs very easily. The data exchange between the PLC and the cam control is carried out via a data component. The data component for S7 can be generated by the user himself by means of the data component generator that is available free of charge. A data component in the version required in each case is generated by the data component generator, so that no unnecessary storage space is occupied in the PLC.

The device description files (GSD or GSDML) required for a PROFIBUS or PROFINET connection are also provided free of charge. With it no programming effort is involved for the user and he does not have to carry out changes in the PLC-program. For the initial programming the comfortable PC-software WINLOC 32® can be used and the already fixed data component including cams, idle times etc. can be generated automatically.

Version	Overall length in mm (dimension x)
ROTARNOCK 100 standard D-Sub version	69
ROTARNOCK 100 with Option IF	69
ROTARNOCK 100 PROFIBUS with D-Sub connector	81
ROTARNOCK 100 PROFIBUS in IP65 and ROTARNOCK 100 Fieldbus version in IP65	98
ROTARNOCK 100 PROFINET	

ROTARNOCK 100

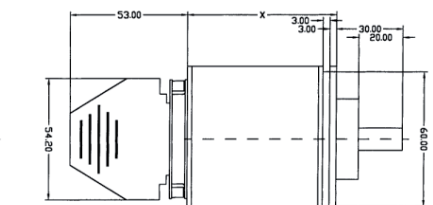
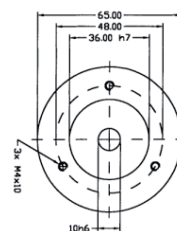
Complete equipment for all applications

In this high-end model the advantages of the most recent Deuschmann software package have been implemented. This provides you with free software configuration. The switching outputs have a load rating of 700 mA and cut additional costs in the switch cabinet. After all the ROTARNOCK-series is already economical by nature:

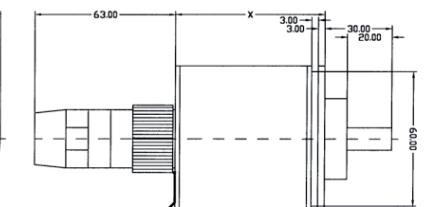
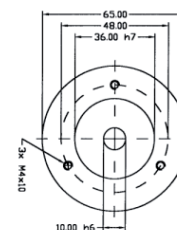
The wiring effort is reduced since no additional rotary encoder needs to be wired up.

The ROTARNOCK 100 PROFIBUS-version unfolds its cost advantages more than ever.

The ROTARNOCK-versions are equipped for various industrial requirements. The versions you can choose from are IP54 version with D-SUB connector or IP65 version with round connector.



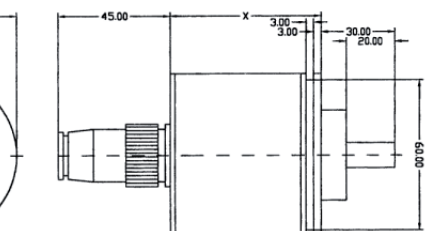
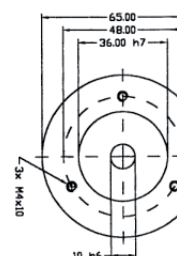
ROTARNOCK RS232 or RS485, version IP54



ROTARNOCK RS232 or RS485, version IP65

ROTARNOCK 100 with integrated Fieldbus

The ROTARNOCK 100 is also available with Fieldbuses and Industrial Ethernet buses. Such as:



ROTARNOCK 100 with integrated PROFIBUS protection class IP65 and ROTARNOCK 100 with integrated Fieldbus protection class IP65

ROTARNOCK Starterkit

This starter kit contains all required cables and power supplies for the quick laboratory setup. Packages with other ROTARNOCK versions are available on request.



Article description	Order.-No.
Starterkit for ROTARNOCK 100 with RS232-interface	P1084
Starterkit für ROTARNOCK 100 mit PROFIBUS-Schnittstelle	P1066
Starterkit für ROTARNOCK 100 mit RS485-DICNET® Schnittstelle	P1068

Basis device

Code	Meaning	Explanation
TN65-4096-100	ROTARNOCK 100, 4096 inf./rev., 16 switching outputs	Resolution freely configurable

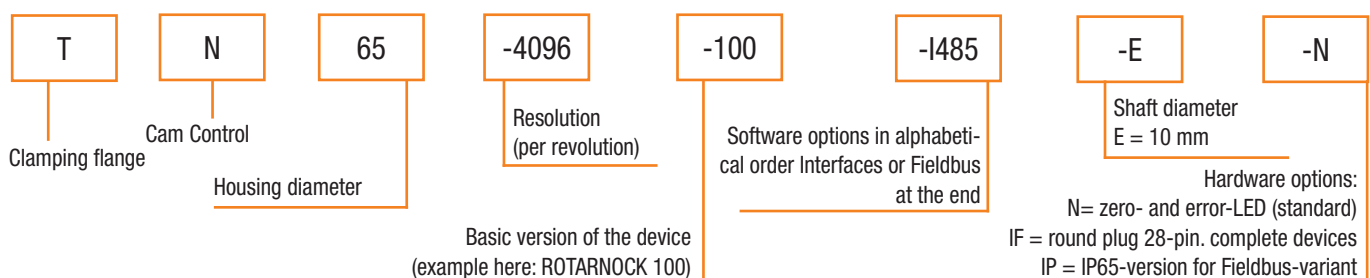
Hard- and Software options

Code	Meaning	Excludes option or only possible with option	R100
D	Position-/speed indicator switchover; switchover depending on the speed		●
G	Encoder monitoring		☒
I	Bitwise idle time compensation	Not with L, LT, IT	●
IF	28-pole round connector for protection class IP65	Not with PB and IP	■
IP	Version IP65 for versions with integrated PROFIBUS	Not with devices without PROFIBUS or with IF	■
	Version IP65 for versions with integrated Fieldbus	Not with devices without Fieldbus or with IF	■
IT	Separate switch-on /switch-off idle time compensation bitwise	Not with I, L, LT	☒
L	Blockwise idle time compensation	Not with I, LT, IT	☒
LT	Separate switch-on /switch-off idle time compensation blockwise	Not with I, L, IT	☒
R	RUN-CONTROL-function on output 16; for the Fieldbus-version with IP65 only to output 12		☒
U	Output change depending on the direction of rotation		☒
232	Interface RS232	Not with option 485	x
485	Interface RS485 DICNET® (cross-linking of up to 16 DA cam controls)	Not with option 232 or other Fieldbus	x
PB	Integrated Profibus-interface (additional RS232-interface)	Not with option 485 or other Fieldbus	■
CO	Integrated CANopen-interface (additional RS232-interface)	Not with option 485 or other Fieldbus	■
DN	Integrated DeviceNet-interface (additional RS232-interface)	Not with option 485 or other Fieldbus	■
EC	Integrated EtherCAT-interface (additional RS232-interface)	Not with option 485 or other Fieldbus	■
EI	Integrated Ethernet/IP-interface (additional RS232-interface)	Not with option 485 or other Fieldbus	■
FE	Integrated Ethernet 10/100 MBit-interface (Modbus TCP or Ethernet TCP/IP) (additional RS232-interface)	Not with option 485 or other Fieldbus	■
MPI	Integrated MPI-interface (additional RS232-interface)	Not with option 485 or other Fieldbus	■
PN	Integrated Profinet-interface (additional RS232-interface)	Not with option 485 or other Fieldbus	■

R100 = ROTARNOCK 100 ● = Standard ■ = Optionally for an additional charge x = Optionally at no additional charge
 ☒ = Freely configurable

LOGIC	The Logic-license code can be ordered by indicating the serial number	für ROTARNOCK 100 erhältlich	Art.-No. V3426
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Structure of the order code



Technical data ROTARNOCK 100

	Characteristics	ROTARNOCK 100	ROTARNOCK 100 PB	ROTARNOCK 100 PN
Mechanical data	- shaft load - shaft diameter - shaft length - shock resistance - vibration resistance - rotor's moment of inertia - durability	axial 40 N, radial 110 N 10 mm 20 mm = 200 m/s ² (12 ms) = 100 m/s ² (10 Hz...1000 Hz) ~30 gcm ² > 105 h at 1000 min ⁻¹	axial 40 N, radial 110 N 10 mm 20 mm = 200 m/s ² (12 ms) = 100 m/s ² (10 Hz...1000 Hz) ~30 gcm ² > 105 h at 1000 min ⁻¹	axial 40 N, radial 110 N 10 mm 20 mm = 200 m/s ² (12 ms) = 100 m/s ² (10 Hz...1000 Hz) ~30 gcm ² > 105 h at 1000 min ⁻¹
Outputs		16	16 + 32 software outputs or 12-48 at IP65	12 + 32 software outputs
Storable programs		64	64	64
Data records number of switch-on/ switch-off points)		1000	1000	1000
Actual value acquisition	- Absolutwertgeber gek. Gray-Code - Absolutwertgeber Parallel Gray-Code bis Bitzahl	360, 1000, 3600 9...12	360, 1000, 3600 9...12	360, 1000, 3600 9...12
Idle time compensation (dynamic cam)	- blockwise - bitwise - separate I/O - entering the idle time in steps	☒ ☒ ☒ 1 ms - 999ms	☒ ☒ ☒ 1 ms - 999ms	☒ ☒ ☒ 1 ms - 999ms
Cycle time In some configurations the cycle time may be higher.	- without idle time compensation (ITC) - with blockwise ITC - with bitwise ITC - with I/O ITC	ca. 110µs ca. 145µs ca. 225µs ca. 270µs	ca. 260µs ca. 295µs ca. 425µs ca. 430µs	- - - -
Software characteristics: zero offset cams movable track by track angle/time cams direction cams	- within the complete range	☒ ☒ ☒	☒ ☒ ☒	☒ ☒ ☒
Run-control-funktion		☒	☒	☒
Speed indicator		☒	☒	☒
Inputs	- for program selection - for program change	4 1	via Fieldbus only via Fieldbus only	via Fieldbus only via Fieldbus only
Logic function	- logic inputs - extensive logic functions - shift register	- ☒ ☒	16 via Fieldbus ☒ ☒	16 via Fieldbus ☒ ☒
Programming	- teach-in programming - via integrated keypad - via Deutschmann terminal - via PC (WINLOC 32®-software) - via cam control profile - integrated Fieldbus and any desired visualization system	via Fieldbus only - - - - -	via Fieldbus only - - - PROFIBUS	via Fieldbus only - - - PROFINET
Data protection	- EEPROM (min. 100 years) - via transfer program on PC	☒ ☒	- -	- -
LED for	- error-display - zero indication - Fieldbus status	☒ ☒ ☒	☒ ☒ ☒	☒ ☒ ☒
Supply voltage 24VDC +/-20%		☒	☒	☒
Max. current consumption (without load)		150mA	200mA	200mA
Output driver max. load	- 300 mA je Ausgang, max. 1A für je 8 Ausgänge - 700 mA je Ausgang, kurzzeitig auch 1A je Ausgang - Ausgänge plusschaltend, kurzschlussfest	- ☒ ☒	- ☒ ☒	- ☒ ☒
Dimensions Basic device in mm	- Durchmesser - Länge	65 siehe Zeichnung	65 siehe Zeichnung	65 siehe Zeichnung
Protection class		IP54 ☒ IP65	IP54 ☒ IP65	IP65
Weight in grams		400	400	480

● = Standard
 ■ = Optionally for an additional charge
 x = Optionally at no additional charge
 PB = PROFIBUS
 PN = PROFINET
 *FB = Available with integrated Fieldbus

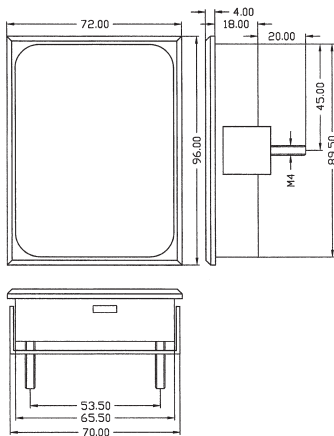
☒ = Freely configurable

ROTARNOCK 100 FB*
axial 40 N, radial 110 N 10 mm 20 mm = 200 m/s ² (12 ms) = 100 m/s ² (10 Hz...1000 Hz) ~30 gcm ² > 105 h at 1000 min ⁻¹
12 + 32 software outputs
64
1000
360, 1000, 3600 9...12
☒ • ☒ 1 ms - 999 ms
- - - -
• • ☒ ☒
☒
•
via Fieldbus only via Fieldbus only
16 via Fieldbus ■ ■
via Fieldbus only - - - • Feldbus
- -
• • •
•
200 mA
- • •
65 see drawing
IP65
480

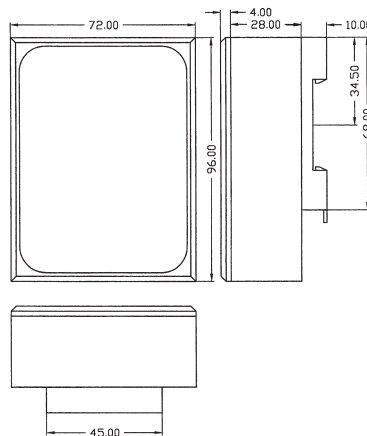
TERM 6 and TERM 24

TERM 6 - The small ones

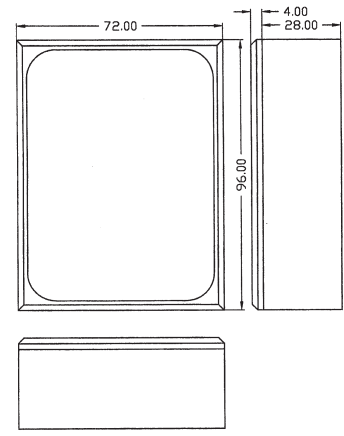
The “four-key operation” which has proven its worth over the years in countless applications can be operated easily after a short familiarization-period only. A clear structure and practical symbols on the seven-segment display, in conjunction with the function LEDs, made this interface very popular. The integrated and switchable interfaces RS232- and RS485-DICNET® allow the communication with any Deutschmann cam control. In addition to the version for front-panel installation, a version for DIN rail mounting and a portable version for the service technician is also available.



Term 6 for front panel installation



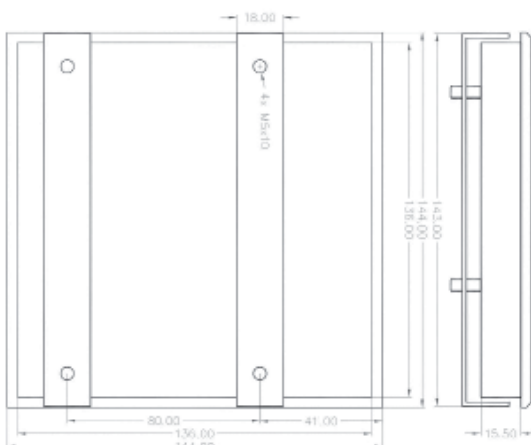
Term 6 H for DIN rail mounting



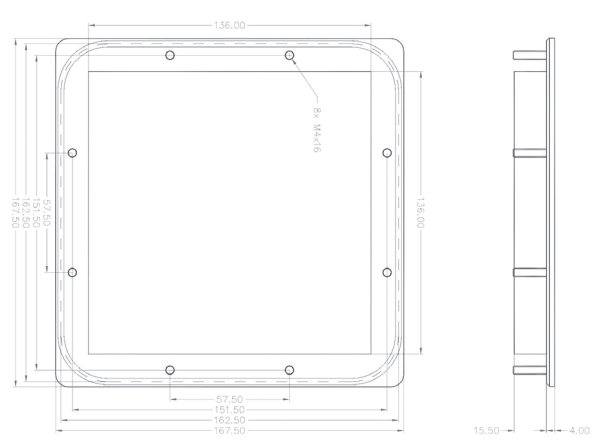
Term 6 T hand-held terminal

TERM 24 - The compact ones

This multi-lingual menu driven user-interface in connection with the decimal keypad and the function keys offers a high level of convenience. Encoder position and speed are displayed simultaneously on the seven-segment display. Depending on the kind of application, you can choose between the housing versions IP54 and IP65. This terminal can be used with any Deutschmann cam control thanks to the RS232- or RS485-DICNET®-interface.



Term24, front panel IP54



Term 24, front panel IP65

Compatibility of Deuschmann cam controls with terminals and the WINLOC® 32-software

The integrated front panel of a LOCON 24, 48 or 64 can also be used as terminal, provided that several devices are connected with one another. With it the compatibility as for TERM 24 applies.

Device type	TERM 6	TERM 24	WINLOC® 32 PC-tool
LOCON 16	•	•	•
LOCON 17	•	•	•
LOCON 24	•	•	•
LOCON 48	•	•	•
LOCON 90	•	•	•
LOCON 100	•	•	•
LOCON 100-MB	-	-	•
LOCON 100-PB	-	-	•
LOCON 200	•	•	•
LOCON 200-MB	-	-	•
LOCON 200-PB	-	-	•
ROTARNOCK 100	•	•	•
ROTARNOCK 100-PB	-	-	•
ROTARNOCK 100 with integrated Fieldbus*	-	-	•
ROTARNOCK 100-PN	-	-	•

• = possible

*



Device type	TERM 6	TERM 24-IP54	TERM 24-IP65
Features	display and control unit	display and control unit	display and control unit
Display	8-digit 7-segment display for position/speed, output indication for 16 outputs	10-digit 7-segment display for position/speed, output indication for 48 outputs	10-digit 7-segment display for position/speed, output indication for 48 outputs
Interface	RS232 (V.24) and RS485-DICNET®, max. any 3 terminals in one bus, interface switchable	RS232 (V.24) or RS485-DICNET®, max. any 3 terminals in one bus, interface not switchable	RS232 (V.24) or RS485-DICNET®, max. any 3 terminals in one bus, interface not switchable
LCD-display	-	2-line LCD-display with LED-backlight, 16 characters/line, operator guidance in ten languages	2-line LCD-display with LED-backlight, 16 characters/line, operator guidance in ten languages
Connections	screw-plug-connector	screw-plug-connector	screw-plug-connector
Function LEDs	6 status LEDs	-	-
Installation	front panel installation, DIN rail mounting, portable version	front panel installation	front panel installation
Protection class	IP54	IP54	IP65
Dimensions (W x H x D)	72 x 96 x 18 mm, 72 x 96 x 25 (DIN rail version)	144 x 144 x 15 mm	168 x 168 x 15 mm
Weight	approx. 200 g	approx. 450 g	approx. 450 g
Panel cut-out	66 x 90 mm	138 + 1 x 138 + 1 mm	138 + 1 x 138 + 1 mm

WINLOC 32®

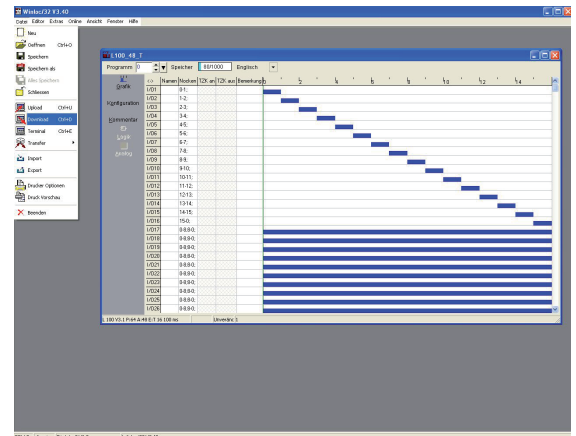
Programming Deuschmann cam controls using Windows

WINLOC 32® offers an easy to use graphical user interface for programming Deuschmann cam controls under Microsoft Windows 7.

The user may print all device data as complete documentation. The compilation of the data is made by the user. The printout is prepared as a scaleable preview, which can be observed before it is printed on paper.

With the basic version WINLOC 32® already offers all necessary abilities for programming devices as well as for transferring data from Deuschmann cam controls to the PC.

By simply entering a license number the basic version is upgraded to a comfort version with an interface that is easier to use and an extended printout capability. WINLOC 32® is available as German or English language version.



Basic or comfort version?

The software WINLOC 32®, that has been developed for the programming of all Deuschmann cam controls is available in two versions. The basic version can be ordered directly from us or it is also available for download free of charge from our website at www.deuschmann.de. It offers all functions that are required to program Deuschmann cam controls.

There is also a comfort version of WINLOC 32® available. By entering a license number that can be ordered from Deuschmann you can use additional convenient tools in the software, that simplify the operation of the program.

The following tools can be used:

The toolbar: It contains buttons that simplify the handling of the program.

Extended print options: Deviating from the standard presetting this tool allows an individual setting so that the printout complies with your requests.

Selecting devices at upload/download: The availability of Pull-Down Menus simplifies the selection of devices, that exist in the network.

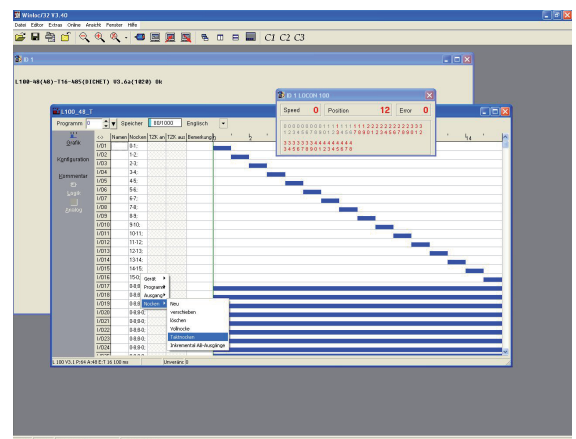
Data migration function: If you want to transfer data from one cam control to another, this is automatically carried out by this function.

Online-presentation: This function is very important for devices that are supplied without a terminal. The settings of your cam control, such as position, speed, outputs are being visualized.

Teach-In: This function simplifies the initialization of your device, since the electronic zero-point can be set by simply pressing the Teach-In button. With it a manual setting is dropped.

Comparison function: The comparison of 2 cam controls is possible by opening two windows with the respective settings of your cam controls.

If you want to use the convenient tools of the comfort version order your license number at Deuschmann Automation directly at www.deuschmann.de or by phone: +49 (0) 6434-9433-0.

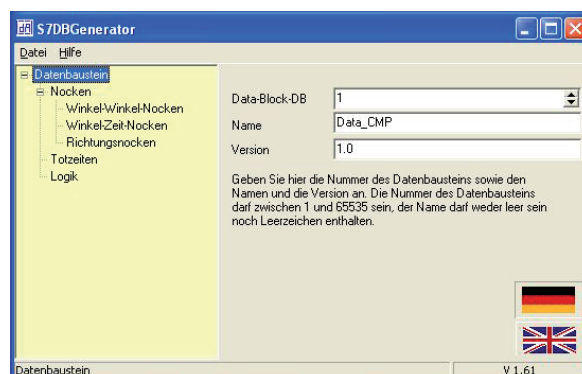


Function	Basic version	Comfort version
Programming general, cams, logic, names, idle times, analog values	•	•
Graphical display of the programming	•	•
Diagnostic option of the communication channels (DICNET®)	•	•
Complete support of all configuration parameters	•	•
Context-sensitive help German/English	•	•
DA cam control error list	•	•
Color adjustments	•	•
Different communication interfaces for all Deuschmann cam controls with RS232 or DICNET® connection	•	•
Simplified operation of the program	-	•
Terminal window	•	•
Toolbars	-	•
Context-sensitive mouse menu	-	•
Extended print adjustment	-	•
Comfortable selection of the devices during upload/download	-	•
Flexible print with extended adjustment possibilities	-	•
Data transfer function	-	•
Online display position, speed outputs	-	•
"Teach-In" zero offset	-	•
Comparison function – two cam controls can be compared in two windows	-	•
Generating a data component	-	•

DB generator

PC-software data component generator

In a simple manner the program makes it possible to generate an AWL source file. Due to the clear arrangement of the component options they can be entered fast and easily. By means of these settings the program generates the AWL source file. Based on a configuration file the program receives information on parameters and the size of this component. While the program starts this file is read. It is also possible to read this file again later.

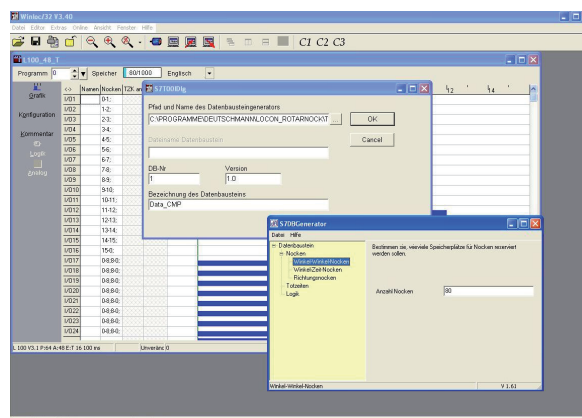


Generating the S7® program code – fast and easy

After the program is started, you can navigate through the setting options by means of the survey on the left side. On the individual parameter cards you can set the parameter values, such as number of cams to be used as well as the cam type.

Generating the component through WINLOC 32® elegantly

If the data component generator is started from the WINLOC 32®-software, then the data, created in WINLOC 32® (cams, programs, idle times, etc.) will automatically be assigned to the data component. By means of the corresponding settings in the DB generator's window it is also possible to create "reserves" for programs, cams, idle times etc. that are to be recorded later.



Rotary encoder

Absolute encoders, singleturn - SA58/TA58 utilising integrative technology



Essential advantages:

- Shock resistance $>2500 \text{ m/s}^2$, 6 ms nach DIN IEC 68-2-27
- 2 years warranty
- Better EMC-behaviour compared to conventional encoders

General order code for encoders

Order reference:

X A 5 8 - X X X X - G X X - X - X

Series

S = Synchro flange
T = Clamping flange

Resolution

0360, 1000, 1024, 4096, 8192

Code type

G = Gray

Interface and supply voltage

Y = Push-Pull 10 - 30V (absolute parallel)
S = SSI 10 - 30V

Options

Z = Supply voltage 5V
(protection class IP65)

Connection

ID = 16-pole round plug axial (parallel)
IDR = 16-pole round plug radial (parallel)
IE = 12-pole round plug axial (SSI)
IER = 12-pole round plug radial (SSI)

Shaft

E = Shaft 10 mm with T-flange (clamping flange)
C = Shaft 6 mm with S-flange (synchro flange)

For the detailed order codes please take a look at the corresponding encoders.

Absolute encoder, singleturn - Shaft version SSI



- Up to a resolution of 13 bit, singleturn in integrative technology*
- Shaft Ø 6 mm or 10 mm
- SSI-interface
- Gehäuse Ø 58 mm
- Max. IP66
- Electronic temperature- and ageing compensation
- Short-circuit proof outputs

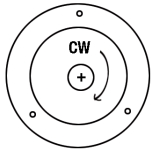
*Integration of all components because of an innovative assembly principle and the use of an opto-asic on one printed circuit board only, at a resolution of up to 13 bit.

Mechanical characteristics

Housing diameter	58 mm
Shaft diameter	S: 6 mm / C: 10 mm
Flange types (housing fastening)	Clamping flange / synchro flange
Protection class shaft input verified according to EN60529	IP66
Protection class housing verified according to EN60529	IP65
Shaft load axial	S: 20 N, C: 40 N
Shaft load radial	S: 80 N, C: 110 N
Max. number of revolutions (temporarily)	12000 rev./min.
Max. number of revolutions (permanent operation)	3000 rev./min.
Starting torque	5 Ncm
Moment of inertia	30 kgm ²
Vibration resistance (DIN EN 60068-2-6)	10 m/s ² (10...100 Hz)
Shock resistance (DIN EN 60068-2-27)	100 m/s ² (6 ms)
Continuous shock resistance (DIN EN 60028-2-29)	10 m/s ² (16ms)
Operating temperature	-40 ... +85°C
Storage temperature	-40 ... +85°C
Weight	200 g

Electrical characteristics

Supply voltage	10 - 30 VDC
Power consumption max.	100 mA (without load)
Pulse frequency.	70 mA (without load)
Step frequency	100...2000 kHz
Step frequency	200 kHz
Resolution	See table on the next page
Output code	See table on the next page
Linearity	+/-0,5 LSB
Outputs	RS422 SSI
Output current max.	20 mA / each channel
Output current typ.	-
Short-circuit proof output?	Yes
Output level high	-0,9 VxUb
Output level low	0,5 V
Electrical lifetime	100000 h
Turn-on time	1 s



Sense of rotation

- Rising code values in case of a clockwise turn of the shaft (cw), falling values in case of a counter-clockwise turn (ccw) with a view to the shaft.

Oder number	Article designation	Resolution	Output code	Shaft	Flange
V2606	TA58-4096-GSE-IE	4096	Gray	10 mm	Clamping flange
V2608	SA58-4096-GSC-IER	4096	Gray	6 mm	Synchro flange
V2609	TA58-1024-GSE-IE	1024	Gray	10 mm	Clamping flange
V2610	TA58-4096-GSE-IER	4096	Gray	10 mm	Clamping flange
V2611	TA58-8192-GSE-IE	8192	Gray	10 mm	Clamping flange

Order code

X	A	5	8	-	X	X	X	X	-	G	S	X	-	X
Series S = Synchro flange T = Clamping flange Resolution 1024, 4096, 8192 Code type G = Gray Interface and supply voltage S = SSI 10 - 30V											Connection IE = 12-pole round plug axial (SSI) IER = 12-pole round plug radial (SSI) Shaft E = Shaft 10 mm with T-flange (clamping flange) C = Shaft 6 mm with S-flange (synchro flange)			

View of the mating face pin contact: SSI - 12-pole connector



Pin assignment SSI with 12-pole connector

Pin	1	2	3	4	5	6	7	8	9	10	11	12	PH ¹⁾
Signal	0 V	+UB	+T	-T	+D	-D	---	complement	---	---	---	---	shield
Colour	blue	red	yellow	green	white	brown		n.c.					

¹⁾ PH = Shield is applied to the connector's housing

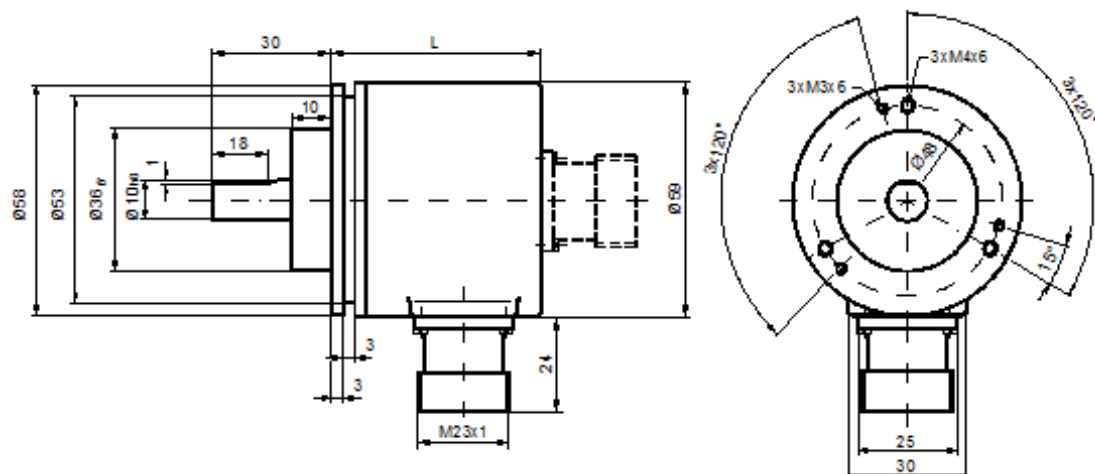
Outputs that are not used have to be isolated before startup.

The assignment of the colours is exclusively valid for cables produced by Deutschmann Automation.
For prefabricated cables, please refer to the price list.

Drawings

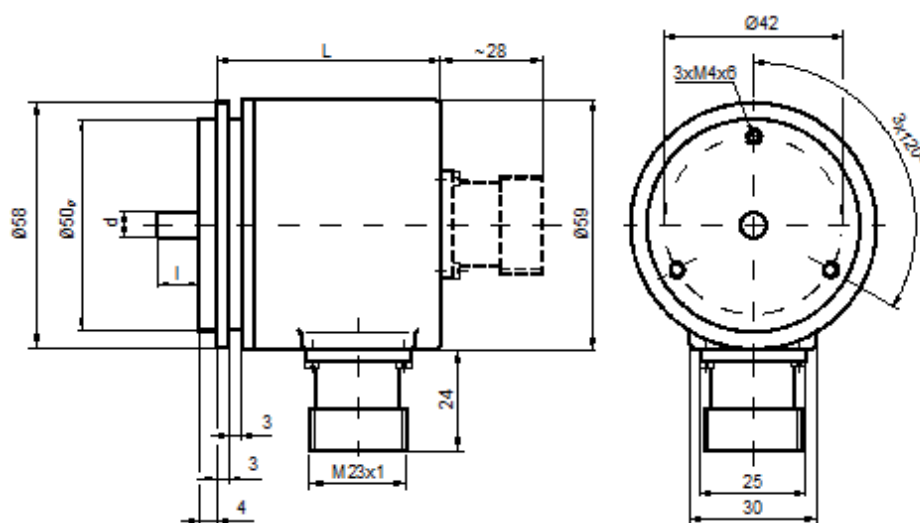
Shaft version type XA58-xxxx-GSX-X-X

Clamping flange



Clamping flange	L axial/radial
Version C10	53

Synchro flange



Synchro flange	d / mm	l / mm	L axial/radial
Version S06	6 ₁₆	10	53

Absolute encoders, singleturn - Shaft version parallel



- Up to a resolution of 13 bit in integrative technology*
- Parallel interface
- Housing Ø 58 mm
- Shaft Ø 6 mm or 10 mm
- Max. IP67
- Electronic temperature and ageing compensation
- Short-circuit proof outputs

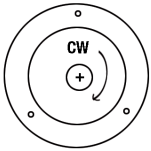
*Integration of all components because of an innovative assembly principle and the use of an opto-asic on one printed circuit board only, at a resolution of up to 13 bit.

Mechanical characteristics

	Resolution: all except for 1000	Resolution: 1000
Housing diameter	58 mm	58 mm
Shaft diameter	S06: 6 mm / C10: 10 mm	10 mm
Flange types (housing fastening)	Clamping flange / Synchro flange	Clamping flange
Protection class shaft input verified according to EN60529	IP67	IP66
Protection class housing verified according to EN60529	IP67	IP65
Shaft load axial	40 N	40 N
Shaft load radial	60 N	110 N
Max. number of revolutions (temporarily)	12000 rev./min.	12000 rev./min.
Max. number of revolutions (permanent operation)	10000 rev./min.	3000 rev./min.
Starting torque	0,01 Ncm	5 Ncm
Moment of inertia	3,8 x 10 ⁻⁶ kgm ²	30 kgm ²
Vibration resistance (DIN EN 60068-2-6)	100 m/s ² (10...2000 Hz)	10 m/s ² (10...100 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s ² (6 ms)	100 m/s ² (6 ms)
Continuous shock resistance (DIN EN 60028-2-29)	1000 m/s ² (16ms)	10 m/s ² (16ms)
Operating temperature	-40 ... +100°C	-40 ... +85°C
Storage temperature	-40 ... +100°C	-40 ... +85°C
Weight	350 g	200 g

Electrical characteristics

	Resolution: all except for 1000	Resolution: 1000
Supply voltage	10 - 30 VDC	10 - 30 VDC
Current consumption max.	200 mA	100 mA (ohne Last)
Current consumption typ.	130 mA	70 mA (ohne Last)
Pulse frequency	500 kHz	100...2000 kHz
Step frequency	1000 kHz	200 kHz
Resolution	See table on the next page	1000
Output code	Gray, Gray Excess (see table on the next page)	Gray Excess
Linearity	+/-0,5 LSB	+/-0,5 LSB
Outputs	Push Pull	Push Pull
Output current max.	30 mA / each channel	20 mA / each channel
Output current typ.	10 mA / each channel	-
Short-circuit proof output?	Yes	Yes
Output level high	≥ Ub-2,2 V (30 mA)	-0,9 VxUb
Output level low	≤ 1,6 V (30 mA)	0,5 V
Electrical lifetime	100000 h	100000 h
Turn-on time	0,1 s	1 s



Sense of rotation

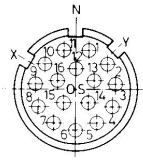
- Rising code values in case of a clockwise turn of the shaft (cw), falling values in case of a counter-clockwise turn (ccw) with a view to the shaft.

Order number	Article designation	Resolution	Output code	Shaft	Flange
V2600	TA58-0360-GYE-ID	360 steps	Gray Excess	10 mm	Clamping flange
V2401	TA58-1000-GYE-ID	1000 steps	Gray Excess	10 mm	Clamping flange
V2602	TA58-1024-GYE-ID	1024 steps or 10 Bit	Gray	10 mm	Clamping flange
V2603	TA58-4096-GYE-ID	4096 steps or 12 Bit	Gray	10 mm	Clamping flange
V2605	TA58-0360-GYE-IDR	360 steps	Gray Excess	10 mm	Clamping flange
V2606	TA58-1000-GYE-IDR	1000 steps	Gray Excess	10 mm	Clamping flange
V2613	TA58-4096-GYE-IDR	4096 steps or 12 Bit	Gray	10 mm	Clamping flange
V2614	SA58-0360-GYC-ID	360 steps	Gray Excess	6 mm	Clamping flange
V2615	SA58-0360-GYC-IDR	360 steps	Gray Excess	6 mm	Clamping flange
V2618	SA58-4096-GYC-IDR	4096 steps or 12 Bit	Gray	6 mm	Clamping flange

Order code

X A 5 8 - X X X X - G Y Series S = Synchro flange T = Clamping flange Resolution 0360, 1000, 1024, 4096, 8192 Code type G = Gray (& Gray Excess) Interface and supply voltage Y = Push-Pull 10 - 30V (absolute parallel)	Options Z = Supply voltage 5V (protection class IP65) Connection ID = 16-pole round plug axial (parallel) IDR = 16-pole round plug radial (parallel) Shaft E = Shaft 10 mm with T-flange (clamping flange) C = Shaft 6 mm with S-flange (synchro flange)
--	--

View of the mating face pin contact: 16-pole connector



Pin assignment with 16-pole connector

Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PH ¹⁾
Signal	2^0 = 1	2^1 = 2	2^2 = 4	2^3 = 8	2^4 = 16	2^5 = 32	2^6 = 64	2^7 = 128	2^8 = 256	2^9 = 512	2^{10} = 1024	2^{11} = 2048	---	complement	+UB	0 Volt	
Colour	white	brown	green	yellow	gray	pink	purple	gray/ pink	white/ green	brown/ green	white/ yellow	yellow/ brown	n.c.	n.c.	red	blue + black	

¹⁾ PH = Connector housing

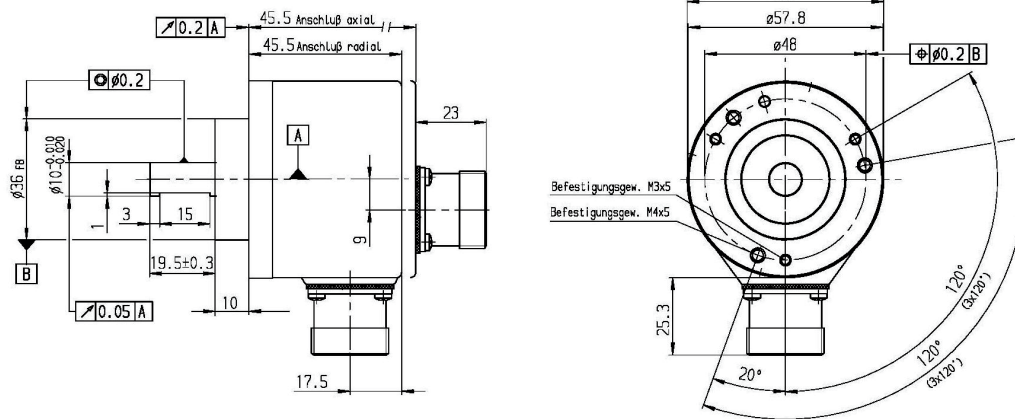
Unused outputs have to be isolated prior to commissioning.

The colour assignment is exclusively valid for cables produced by Deuschmann Automation.
For prefabricated cables, please refer to the price list.

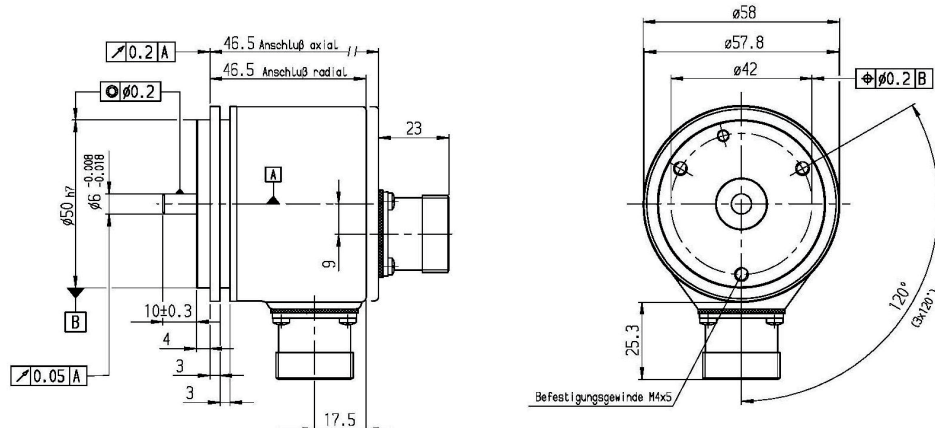
Drawings

Shaft version type XA58-xxxx-GYE-X-X (except for resolution of 1000)

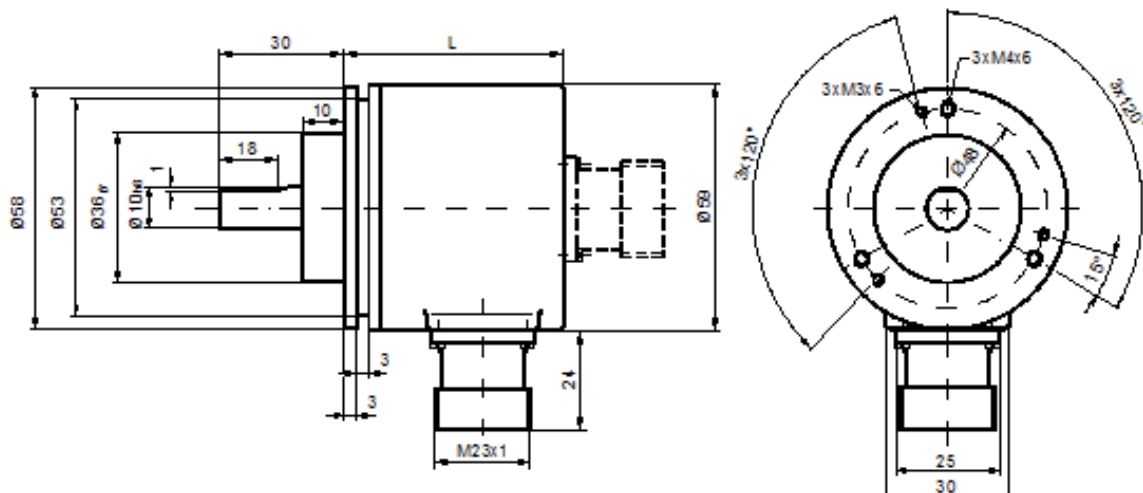
Klemmflansch / M23-Stecker / axial/radial



Synchroflansch / M23-Stecker / axial/radial



Shaft version type TA58-1000-GYE-X



Clamping flange	L axial/radial
Version C10	53

Dynamic switching accelerator SPEEDY

Switching on and off magnetic controlled connect elements lead to delays that consist of two components:

- Delay time for setting up and removing the magnetic field
- Delay time for overcoming mechanical inertia

To reduce this delay time SPEEDY makes it possible to achieve an overexcitation of the magnetic field by an overvoltage pulse of 100 V, adjustable from 1 ms to 10 ms and with it to overcome the mechanical inertia much faster. When switching off, the delay time for the removal of the magnetic field is also reduced considerably due to a negative free-wheeling voltage.



The status of the inputs and outputs as well as of the supply voltages are displayed via integrated LEDs. SPEEDY has different switching modes available that can be adjusted from the outside. Following please find a more detailed description:

The switching modes of SPEEDY

Setting the switching modes

The switching modes described below are selected through a rotary code switch. The following assignment applies here:

Please note, that every change of the inputs is directly evaluated in the first 8 switch positions. This mode makes sense if the inputs are connected with the outputs of a control and a distortion-free reaction from SPEEDY is required.

In case the interference suppression is on, the input signals are being filtered, that results in a delay (runtime input -> output) of approx. 1 ms.

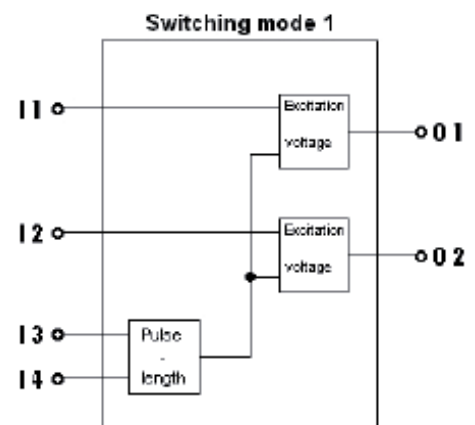
This operating mode makes sense if the inputs are being switched by a relay or if very strong failures are on the input lines.

Rotary switch indication	Switching mode	Input interference suppression
0	1	Off
1	2	Off
2	3	Off
3	4	Off
4	5 (1ms)	Off
5	5 (2 ms)	Off
6	5 (5 ms)	Off
7	5 (10 ms)	Off
8	1	Active
9	2	Active
A	3	Active
B	4	Active
C	5 (1 ms)	Active
D	5 (2 ms)	Active
E	5 (5 ms)	Active
F	5 (10 ms)	Active

Switching mode 1

In switching mode 1 the input 1 is wired to the output 1 and the input 2 is wired to the output 2. The duration of the overexcitation pulse is set at the inputs 3 and 4.

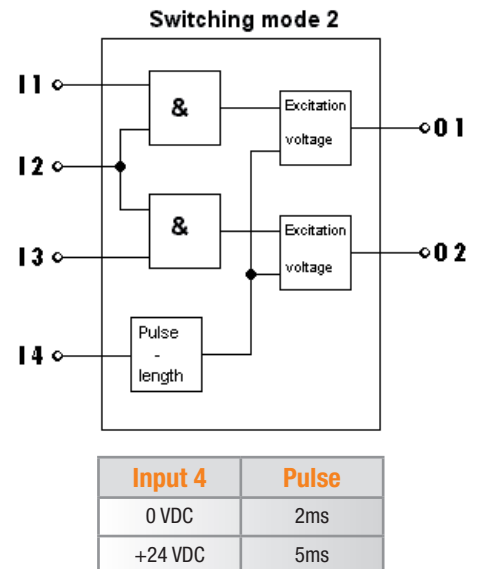
Input 3	Input 4	Pulse
0 VDC	0 VDC	1 ms
+24 VDC	0 VDC	2 ms
0 VDC	+24 VDC	5 ms
+24 VDC	+24 VDC	10 ms



Switching mode 2

In switching mode 2 the input 1 is wired to the output 1 and the input 2 is wired to the output 2. Input 3 is an enabling input. The inputs 1 and 2 are ineffective without a signal at input 3. The duration of the overexcitation pulse is set at input 4.

Input 1	Input 2	Input 3	Output 1	Output 2
0 VDC	0 VDC	0 VDC	0 VDC	0 VDC
+24 VDC	0 VDC	0 VDC	0 VDC	0 VDC
0 VDC	+24 VDC	0 VDC	0 VDC	0 VDC
+24 VDC	+24 VDC	0 VDC	0 VDC	0 VDC
0 VDC	0 VDC	+24 VDC	0 VDC	0 VDC
+24 VDC	0 VDC	+24 VDC	+24 VDC	0 VDC
0	+24 VDC	+24 VDC	0 VDC	+24 VDC
+24 VDC	+24 VDC	+24 VDC	+24 VDC	+24 VDC



Switching mode 3

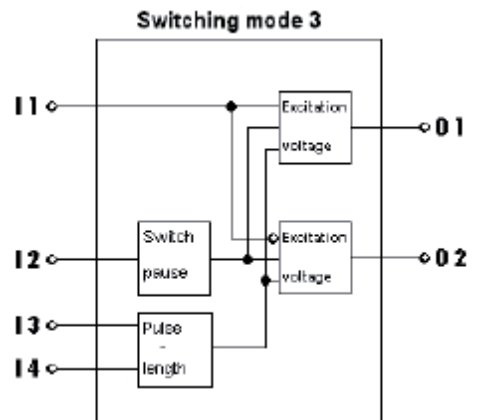
The switching mode 3 was especially developed for double magnet coils (-driving elements). Output 2 is wired if the input 1 does not have a signal. In case input 1 receives a signal, then output 2 is switched off first, followed by a pause**. Then the output 1 is switched on. If the signal is removed from input 1 it happens the other way round. The output 1 is switched off first, followed by a pause**. Only then the output 2 is switched on again. Input 2 determines the duration of the pause**. The duration of the overexcitation pulse is set at the inputs 3 and 4.

Input 1	Output 1	Output 2
0 VDC	0 VDC	+24 VDC
+24 VDC	+24 VDC	0 VDC

Input 2	Pause**
0 VDC	Pulse x 2
+24 VDC	Pulse x 1

Input 3	Input 4	Pulse
0 VDC	0 VDC	1ms
+24 VDC	0 VDC	2ms
0 VDC	+24 VDC	5ms
+24 VDC	+24 VDC	10ms

**Pause: Period between switching off the magnet coil 1 and switching on the magnet coil 2 or the other way round. It results from the overexcitation time (pulse) multiplied by 2 or 1.

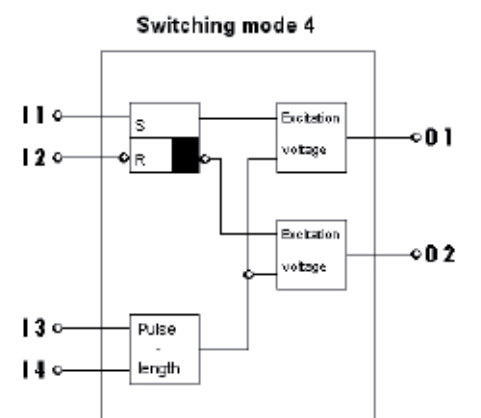


Switching mode 4

The switching mode 4 includes an RS-flip-flop logic (-RESET/SET logic). If input 2 (-RESET) is supplied with 24 V after switch-on, then output 2 is wired. If input 1 (SET) is also supplied with 24 V, then output 1 is wired and output 2 is switched off. If the signal at input 1 (SET) disappears, then this state at the outputs remains stable. Provided that the signal at the input 2 (-RESET) is taken away now (0 VDC), then the output 1 is switched off and the output 2 is switched on. This switching state also remains stable if the input 2 receives a signal (+24 VDC) again. The input 2 (-RESET) has a higher priority compared to input 1 (SET); which means: if input 1 has a signal (+24 VDC) and input 2 does not have a signal (0 VDC), then output 2 is wired and output 1 is switched off. The duration of the overexcitation pulse is set at the inputs 3 and 4 (clamps 3 and 4).

Input 1	Input 2	Output 1	Output 2
0 VDC	0 VDC	0 VDC	+24 VDC
+24 VDC	0 VDC	0 VDC	+24 VDC
0 VDC	+24 VDC	unchanged	unchanged
+24 VDC	+24 VDC	+24 VDC	0 VDC

Eingang 3	Eingang 4	Impuls
0 VDC	0 VDC	1ms
+24 VDC	0 VDC	2ms
0 VDC	+24 VDC	5ms
+24 VDC	+24 VDC	10ms

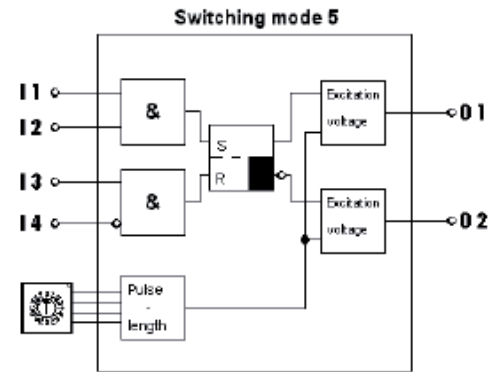


Switching mode 5

The switching mode 5 also includes an RS-flip-flop, that is set via the inputs 1 and 2 and that is reset via the inputs 3 and 4 (compare description in switching mode 4). The pulse length is set through the rotary code switch. The following assignment applies for it:

Rotary switch display	Pulse
4 oder C	1 ms
5 oder D	2 ms
6 oder E	5 ms
7 oder F	10 ms

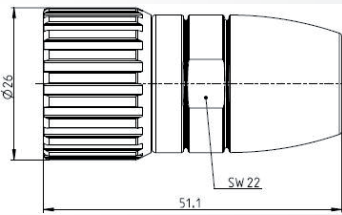
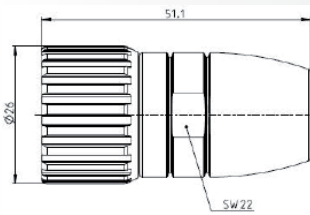
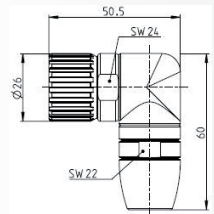
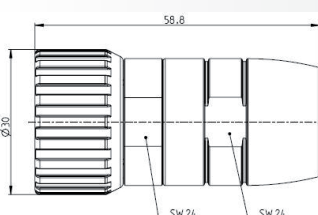
Input 1	Input 2	Input 3	Input 4	Output 1	Output 2
0 VDC	0 VDC	0 VDC	0 VDC	unchanged	unchanged
+24 VDC	0 VDC	0 VDC	0 VDC	unchanged	unchanged
0 VDC	+24 VDC	0 VDC	0 VDC	unchanged	unchanged
+24 VDC	+24 VDC	0 VDC	0 VDC	+24 VDC	0 VDC
0 VDC	0 VDC	+24 VDC	0 VDC	0 VDC	+24 VDC
+24 VDC	0 VDC	+24 VDC	0 VDC	0 VDC	+24 VDC
0 VDC	+24 VDC	+24 VDC	0 VDC	0 VDC	+24 VDC
+24 VDC	+24 VDC	+24 VDC	0 VDC	0 VDC	+24 VDC
0 VDC	0 VDC	0 VDC	+24 VDC	unchanged	unchanged
+24 VDC	0 VDC	0 VDC	+24 VDC	unchanged	unchanged
0 VDC	+24 VDC	0 VDC	+24 VDC	unchanged	unchanged
+24 VDC	+24 VDC	0 VDC	+24 VDC	+24 VDC	+24 VDC
0 VDC	0 VDC	+24 VDC	+24 VDC	unchanged	unchanged
+24 VDC	0 VDC	+24 VDC	+24 VDC	unchanged	unchanged
0 VDC	+24 VDC	+24 VDC	+24 VDC	unchanged	unchanged
+24 VDC	+24 VDC	+24 VDC	+24 VDC	+24 VDC	0 VDC



Technical data		
	SPEEDY 1A	SPEEDY 4A
Supply voltage	10...30 VDC, max. 1 W (no load)	10...30 VDC, max. 1 W (no load)
Current consumption	Max. 40mA (idle state), Max. 3A (in the moment of switching)	Max. 40mA (idle state), Max. 3A (in the moment of switching)
Inputs	4 $R_i > 3,9K^*$ $U_L = 0V - 3V, U_H = 12V - 30V$	4 $R_i > 3,9K^*$ $U_L = 0V - 3V, U_H = 12V - 30V$
Outputs	2 $I_{out} < 1A$ continuous load $U_{out-stat} > \text{supply voltage} - 1V$ $U_{out-pulse} = 88V \dots 100V$ or $44V \dots 50V$	2 $I_{out} < 4A$ continuous load / $5A$ short-time (max. 1min.) $U_{out-stat} > \text{supply voltage} - 1V$ $U_{out-pulse} = 88V \dots 100V$ or $44V \dots 50V$
Programs	5 adjustable via rotary switch, more customized programs on request	5 adjustable via rotary switch, more customized programs on request
Pulse length	Adjustable 1 - 10ms	Adjustable 1 - 10ms
Switching delay	$< 300\mu s$ (without input interference suppression)	$< 300\mu s$ (without input interference suppression)
Recovery time	Max. 150ms at 1A-load and 10ms-pulse	max. 150ms bei 1A-Last und 10ms-Impuls
Housing	Plastic for EN-rail mounting (stackable) W x H x D: 25 x 79 x 90.5mm	Plastic for EN-rail mounting (stackable) W x H x D: 25 x 79 x 90.5mm
Conductor connection	Via plug-in terminal block up to 2.5 mm ²	Via plug-in terminal block up to 2.5 mm ²
Display	LED-status display of the inputs, outputs and supply voltage	LED-status display of the inputs, outputs and supply voltage

Order number	Article designation	
V3104	DSB SPEEDY-50V-1A	with 1A switching capacity
V1526	DSB SPEEDY-100V-1A	
V3105	DSB SPEEDY-50V-4A	with 4A switching capacity
V2313	DSB SPEEDY-100V-4A	

Accessories for cam controls and encoders

	Designation	Order no.
	12-pole cable connector with union nut EMC-version, protection class IP67, traction relief inside, socket, counterclockwise, for the use with SSI-encoders	V1706
	16-pole cable connector with union nut EMC-version, protection class IP67, socket, standard version, for the use with encoders parallel-output or ROTARNOCK Fieldbus version	V1700
	16-pole cable connector with union nut EMC-version, protection class IP67, socket, angled, for the use with encoders parallel-output or ROTARNOCK Fieldbus version	V2756
	28-pole cable connector with union nut EMC-version, protection class IP67, traction relief inside, large cable inlet, socket, standard version, for the use with ROTARNOCK devices IP65	V1703
	5-pole connector M12, socket, inverse coding, PROFIBUS/MPI input connector for ROTARNOCK	V3059E
	5-pole connector M12, pin, inverse coding, PROFIBUS/MPI output connector for ROTARNOCK	V3059A
	4-pole cable connector M12, pin, D-coding, PROFINET for ROTARNOCK	V4123
	Angle for mounting encoders with clamping flange (T-flange) and ROTARNOCK devices	V1480
	Adapter flange for clamping for the use of encoders without groove	V1709
	USB-RS232 converter 20 cm, tested with all Deutschmann software tools	V3654
	DICNET®-adapter for the connection from cam controls with RS485-DICNET®-interface to the COM-interface at the PC.	V2156

Designation	Order-No
Assembly tool for round plugs	V1705
Round plug 12pol. Socket	V1706
Round plug 16pol. Socket	V1700
Round plug 16pol. socket, bent	V2756
Round plug 16pol. socket with PG-screwing	V2903
Round plug 28pol. Socket	V1703
5pol. cable connector M12, pin, b-coding, Profibus output connector	V3059A
5pol. cable connector M12, socket, b-coding, Profibus input connector	V3059E
4pol. cable connector M12, pin, d-coding for Profinet	V4123
Phoenix plug socket for LOCON 16/17 (strip 1 – 16)	V2988
Phoenix plug socket for LOCON 16/17 (strip 17 – 32)	V2989
Phoenix plug 5pol. Socket	V1630
Mounting clamp for LOCON 16/17, LOCON 24/48 (1 set = 2 pieces (set price))	V1344
Mounting angle for T-flange	V1480
Clamping flange adapter	V1709
Coupling 10:10	V1358
DICNET-Adapter DICADAP 3	V2156
Cable 2x2x0,22m² for DICNET (price per meter)	V1544
WINLOC single user license comfort version	V2336
USB-RS232 Converter with 20 cm-cable	V3654
Power supply PA500 for ROTARNOCK-Starter Kit	V3666

Mass-produced cables

Mass cable encoder xA58-xxxx-GYE-xx (absolute encoder parallel)

Order-No.	Available lengths in meters (xx)	Article designation	Explanation
V2105-xx	5; 10; 15; 25	K-EP-01-R16B-xx-00	For encoders parallel up to 12 bit, cable type 16 x 0,14 mm ² , 16-pole round plug socket, length xx m, other end open
V2106-xx	5; 10; 15; 25	K-EP-01-R16B-xx-AE	For encoders parallel up to 12 bit, cable type 16 x 0,14 mm ² , 16-pole round plug socket, length xx m, other end wire end sleeves
V2107-xx	0,2; 5; 10; 15; 25	K-EP-01-R16B-xx-D25S	For encoder parallel up to 12 Bit, cable type 16x0,14mm ² , 16pol. round plug socket, length xx m, other side 25pol. D-SUB-pin with metal coated cover

Connection cable encoder xA58-xxxx-GSE-xx (absolute encoder SSI)

Order-No.	Available lengths in meters (xx)	Article designation	Explanation
V2382-xx	5; 10; 15; 25	K-ES-08-R12B-xx-AE-12	For encoder serial up to 12 bit, bus cable 4x2x0,25, 12pol. round plug socket, length xx m, other side wire-end sleeves, according to connection table 12
V2810-xx	5; 10; 15; 25	K-ES-08-R12B-xx-00-12	For encoder serial up to 12 bit, bus cable 4x2x0,25, 12pol. round plug socket, length xx m, other side open, according to connection table 12

Connection cable ROTARNOCK (TN65-xxxx...)

Order-No.	Available lengths in meters (xx)	Article designation	Explanation
V2123-xx	5; 10; 15; 25	K-NR-07-D25B-xx-00	For ROTARNOCK, cable type 20 x 2 x 0,14 mm ² , 25-pole D-SUB socket with metalized hood, length xx m, other end open
V2183-xx	5; 10; 15; 25	K-NR-07-R28B-xx-AE	For ROTARNOCK, cable type 20x2x0,14mm ² , 28pol. round plug socket, length xx m, other side wire end sleeves
V2222-xx	5; 10; 15; 25	K-NR-07-R28B-xx-00	For ROTARNOCK, cable type 20x2x0,14mm ² , 28pol. round plug socket, length xx m, other side open
V3951-xx	5; 10; 15; 25	K-N2-03-R16B-xx-00	For serial connection RS232, cable type 16 x 0,34mm ² , 16pol. round plug socket, length xx m, other side open

Connection cable LOCON (for serial connection RS232)

Order-No.	Article designation	Explanation
V2097-02	K-N2-05-D9B-02-AE	For serial connection RS232, cable type 3x0,34mm ² , 9pol. D-SUB-socket with metal coated cover, length 2m, other side wire end sleeves
V2140-02	K-N2-05-D9S-02-D9B	For serial connection RS232, cable type 3x0,34mm ² , 9pol. D-SUB-pin with metal coated cover, length 2m, 9pol. D-SUB-socket with metal coated cover Note: For LOCON 24/48/64 only

Programming cable ROTARNOCK (TN65-xxxx...)

Order-No.	Article designation	Explanation
V3467	Programming cable for ROTARNOCK - 232/PB	Programming cable for ROTARNOCK - 232/PB, 2,0 m inclusive 24V power supply, side A: 9pol. D-SUB socket with metal coated cover, side B: 25pol. D-SUB socket with metal coated cover + 2pol. screw-/plug connector
V3480	Programming cable for ROTARNOCK (DICNET)	Programming cable for ROTARNOCK (Dicnet), 2,0 m inclusive 24V power supply, side A: 25pol. D-SUB socket with metal coated cover, side B: 25pol. D-SUB socket with metal coated cover + 2pol. screw-/plug connector + Dicnet-adapter
V3483	Programming cable for ROTARNOCK (DICNET) IP65	Programming cable for ROTARNOCK (Dicnet) IP65, 2,0 m, inclusive 24V power supply, side A: 25pol. D-SUB socket, side B: 28pol. roundplug + 2pol. screw-/plug connector + Dicnet-adapter
V3655	Programming cable for ROTARNOCK - PB/PN IP65	Programming cable for ROTARNOCK - PB/PN IP65, 2,0 m inclusive 24V power supply, side A: 9pol. D-SUB socket with metal coated cover, side B: 16pol. round plug socket + 2pol. screw-/plug connector
V3712	Programming cable for ROTARNOCK IFN - 232/PB	Programming cable for ROTARNOCK IFN - 232, length 2,0 m, inclusive 24V power supply, side A: 9pol. D-SUB socket with metal coated cover, side B: 28pol. round plug socket + 2pol. screw-/plug connector

Proramming cable LOCON 90/100/200

Order-No.	Article designation	Explanation
V3964	Mass-produced configuration and programming cable-232 for LOCON 90/100/200	Mass-produced configuration and programming cable-232. Length 2,0 m, side A: 9pol. D-SUB socket with metal coated cover, side B: 8pol. screw-/plug connector with universal power supply 12W, 24V, 0,5A Note: The USB-RS232 Adapter, 20 cm, (article number: V3654) has to be ordered separately.

Glossary

Dynamic cam / idle time compensation

The idle time compensation is the time that passes from setting a cam control output until the actual reaction of the connected device (e. g. opening a valve). Normally this idle time is constant. For a dynamic compensation of this idle time a cam control has to shift a programmed cam depending on the actual encoder speed, that means a valve that is supposed to be opened on position 100, for example must be opened at 1 m/s on position 95, at 2 m/s it must already be opened on position 90.

This function is called dynamic cam shifting or idle time compensation (ITC). Idle times can be programmed blockwise, which means a set idle time always applies to a block of 8 outputs or bitwise. For an idle time compensation with separate turn-on/turn-off time it is possible to select different turnon and turn-off delay times.

DICNET®

DICNET® (Deutschmann-Industry-Controller-Net) is a multi-master Fieldbus. At the physical layer according to the ISO-OSI shift model it corresponds to the DIN 19254, part 1. That means a connection between all participants in the net is established with an RS485-two-wire line.

The physical arrangement is thus a bus system, at which the participants can be switched on and off as desired. At the maximum expansion stage 16 cam controls, 16 display units, 3 operation terminals and 1 PC can be connected at the same time. From the logical point of view it is a token ring, that means that always only the participant who has the access authorization (token) is allowed to send to the bus. In case he does not have any data for another participants, then he passes on the token to that neighbour, who was determined during a configuration phase.

Through this principle a deterministic bus cycle time is achieved, which means the time (worst-case) until a data packet can be sent is exactly calculable. In case a participant is turned on or off an automatic reconfiguration is made. The transmission baud rate is 312.5 kbaud at a length of 11 bit/byte. A maximum of 127 participants can be operated on one bus, whereas data packets with a maximum of 14 byte per cycle are being transmitted. An automatic check of the received information takes place as well as an error report in case of a twofold transmission error. The maximum expansion of the net must not exceed 500 m.

Temperature ranges and humidity

All Deutschmann cam controls are specified for a storage temperature of -25°C to +70°C. The operating temperature without forced convection ranges from 0°C to +45°C, with forced convection from 0°C to +65°C. The maximum relative humidity can be 80%, non-condensing, in a non-corrosive atmosphere.

Shock and vibration

All our devices are tested for the following values:

Shock 15G/11 milliseconds | vibration 0.15mm/10..50 Hz, G/50..150 Hertz

Fieldbus connection

Basically all Deutschmann devices can be connected via a Gateway to the Fieldbuses common on the world market. Some types can also be supplied with integrated Fieldbus-interface.



Angle-/time-cams

In most applications the switch-on and switch-off points (cam) are set position-dependent. For certain applications, however, it is necessary that the switch-on point is set position-dependent and the switch-off point time-dependent. For devices with this function the time base may vary in the range from 1 millisecond to 32500 milliseconds.

Direction cam

The switch-on and switch-off points (cam) are normally switched regardless of the rotational direction. Through the function direction cam it is possible to define whether the a cam is to be activated in clockwise rotation or anti-clockwise rotation only or as it is the normal case in both directions.

Logic functions / shift register

Applications in which the cam control takes over PLC-tasks. Up to 16 inputs/outputs, markers and a shiftregister can be logically linked. With it simple PLC-task are passed on to the cam control. Advantage: faster cycle times, PLC does not have to carry out any peripheral work. The shift register can for instance be used for an easy sorting of good and bad end products (e. g. at bottling).

Encoder monitoring

Functions for the complete monitoring of encoder and cable. Every time the encoder is read in it is compared to the one before. In case of a deviation of ± 3 inc. an error message is shown. Additionally at the absolute encoders with a resolution of 360 or 1000 inf./rev. (Gray excess) an error message is shown at the undefined codes.

Lockable outputs

The function serves to lock machine-relevant outputs and only permit the change of product-relevant outputs.

Global availability



The company

Deutschmann Automation, a German company based in Bad Camberg is working in the automation technology since 1976 and became known with cam controls in the 1980s.

In 1989 Deutschmann Automation started operating in the fieldbus technology. The development of one's first own bus system DICNET was an essential step. Since 1996 different fieldbus and Industrial Ethernet products are offered under the brand name UNIGATE®.

Thanks to a competent quality management and continuous enhancement Deutschmann became one of the leading suppliers in the automation industry. The entire development and manufacturing takes place in Germany.

We offer workshops for our All-In-One Bus nodes of the UNIGATE® IC series and the Software tool Protocol Developer. In these workshops you will learn everything you need to know about our products and how you can easily realize your projects with Deutschmann.

For all products the necessary documents and tools can be found, free of cost, on www.deutschmann.com. Furthermore on the Deutschmann Technology Wiki, wiki.deutschmann.de, technological information is easily accessible for our customers and users, cross-linking application know-how and ensuring that the information is up to date.

Our experts in development, sales and support have the right solution for your demands.



Deutschmann
your ticket to all buses



UNIGATE® CL

■ Protocol Converter for all devices with a serial interface



UNIGATE® IC

■ Easy integration into your own electronics



UNIGATE® CX

■ Making incompatible networks compatible

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