GSM-PRO2
2G / 3G / 4G Remote Control Solution

4G **Lte**

CONTACLIP

Contents

CONTA-CLIP:
thinking ahead for connection systems

CONTA-CLIP was founded in 1978.
We operate globally as an owner-operated medium-sized company.

Users of electrical and electronic connection systems rely on our reliable products and our many years of industrial and global market expertise.

Our company is now one of the most important manufacturers in the field.

For over 40 years, our components and solutions have been used in various process and industrial automation applications, including: railway technology, materials handling, building automation, air conditioning, mechanical and facility engineering, measurement and control technology, control panel construction, shipbuilding, transformer construction and environmental technology.

Over the years, we have evolved into an innovator that sets the tone with new ideas and creative impulses.

Our employees come from a wide variety of industries and view themselves as true connectivity specialists. They understand the specific problems, requirements and challenges of our customers. This results in communication among equals.

The profits then flow into the development of new products as well as into modern, efficient manufacturing processes.

A high quality standard throughout all departments is our number one priority.

Our top-class products are supported by this interplay between top-class men and machinery. We have also designed our range of services to align with customer needs.

Our products are divided into six categories: CONTA-CONNECT for terminal blocks and accessories, KDS cable management systems, CONTA-ELECTRONICS for electrical and electronic switchgear cabinet components, CONTA-LABEL for marking systems, CONTA-BOX for housings, and CONTA-CON for PCB terminal blocks and connectors.

We design customer-specific solutions for electronics, provide completely assembled housings and assemblies as needed, assemble terminal blocks for series production, and quickly handle component labelling tasks.

We greet these challenges with passion and enthusiasm, because we see each customer as our partner.

CONTA-CLIP customer representatives are always ready to offer their support to the customer, because service and helpfulness are rooted deeply in our corporate philosophy.

Advantage online:
the CONTA-CLIP Online Catalogue

No matter where you are, as long as you're online you can access our digital catalogue to look at our services and quickly identify suitable solutions for your requirements.

Fast results Use the full-text search, enter an order number or use the convenient "step-by-step" feature search function.

Project planning at a glance: After you've selected the products, all the master data for the materials (sales data, technical data, drawings, connection diagrams, classifications and approvals) are made available as a data sheet or export file.

Detailed inquiries about components can be sent via the shopping cart directly to our headquarters. Upon request, you will receive an e-mailed copy of your inquiry.

Application films: Complex functions be explained easily and clearly with sounds and images.

Printed catalogue: Would you like an offline overview? Please ask for our free printed catalogues.

Industry-specific: You will find the solutions that are relevant for your industry, according to your expertise.

Newsletter: Do you want to stay up to date? Subscribe to our newsletter! Simply register, confirm our authentication e-mail, and you'll be regularly informed about all CONTA-CLIP news.

Discover how the world of CONTA-CLIP and our website can deliver added value for you and your projects!
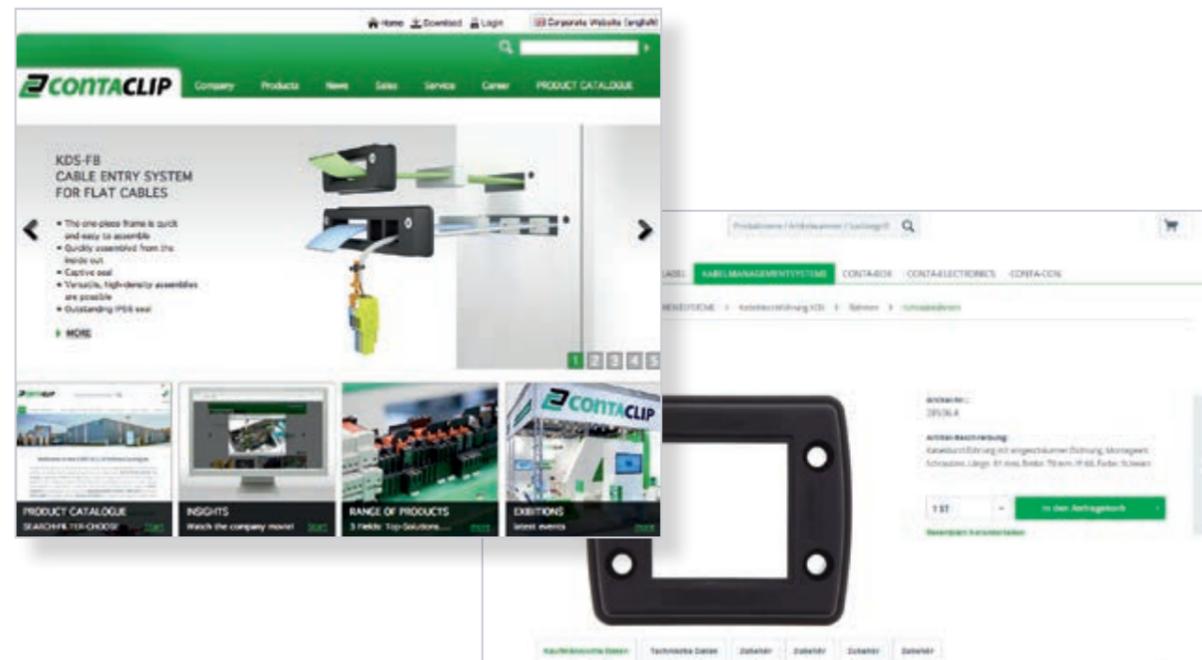
Globally available for you

Are you working abroad? No problem. Our worldwide sales and distribution partners help us to be globally networked and provide on-time reliable deliveries. Simply scan the QR code shown and you'll learn on our website about the sales partner responsible for your country.

Our locations in Africa
Algeria
Morocco

Our locations in Asia
Bahrain
China
Hong Kong
India
Israel
Jordan
Qatar
Malaysia
Oman
Pakistan
Saudi Arabia
Singapore
South Korea
Taiwan
Turkey
United Arab Emirates

Our locations in Australia
Australia
New Zealand

Our locations in Europe
Belgium
Bosnia and Herzegovina
Bulgaria
Denmark
Germany
Finland
France
Greece
Great Britain
Ireland
Iceland
Italy
Croatia
Latvia
Netherlands
Norway
Austria
Poland
Portugal
Romania

Russia
Sweden
Switzerland
Serbia
Slovakia
Slovenia
Spain
Czech Republic
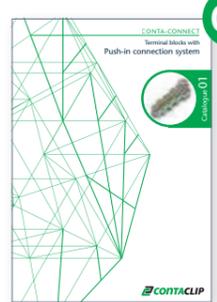Ukraine
Hungary
Belarus

Our locations in North America
Canada
Mexico
United States

Our locations in South America
Bolivia
Brazil
Chile
Ecuador
Columbia

# A complete line of products to meet your demands
The CONTA-CLIP Catalogues

Our catalogues are available in many languages!

01 CONTA-CONNECT

Terminal blocks with Push-In connection system
Our wide range of innovative PRK and FRK terminal blocks with the Push-In connection system include feed-through terminals, PE terminals, disconnect terminals, fused terminals, multi-level terminals, installation terminals and initiator terminals, for conductor cross-sections from 0.2 mm² to 25 mm².

Cat. no. 98070.2
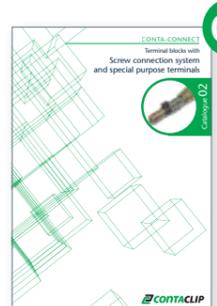
02 CONTA-CONNECT

Terminal blocks with screw connections and special terminals
Everything for classic wiring with screw connection systems (also for high currents): SRK feed-through and PE terminals, RK high-temperature variants, TK transformer terminals, HSK high-power stud terminals, SVB series screw distributor blocks, and the modular feed-through terminal systems from the SDK series.

Cat. no. 98071.2

03 CONTA-CONNECT

Terminal blocks with tension-spring connection
Our versatile line of terminals with tension spring connections for conductor cross-sections from 0.2 mm² to 16 mm² includes: the ZRK/ZSL series of feed-through and PE terminals, the double-level ZRKD/ZSLD, the ZIKD three-level terminal blocks, motor-connection terminals, (blade-) disconnect terminals, fused terminals, direct-mount terminals, and initiator/actuator terminals for transmitting positioning, encoder and alert signals.

Cat. no. 98072.2

04 CONTA-CONNECT

Installation materials and other accessories for terminal blocks
Our installation products include cabling ducts, assembly tools, cable glands with metric or PG threads, DIN rials, rail cutters and punching tools. The terminal block accessories include different versions of end stops, wire-end ferrules, and connectors.
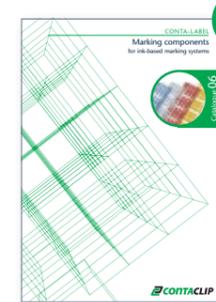
Cat. no. 98073.2

05 CONTA-LABEL

Marking components for thermal-transfer marking systems
CONTA-CLIP provides the TTPCard thermal-transfer printer and a large selection of PC, PVC and PVCF markers or labels in card format: for professional, permanent labelling of terminals, devices, conductors, cables, facilities and switchgear cabinets.

Cat. no. 98074.2

06 CONTA-LABEL

Marking components for ink-based marking systems
The CONTA-LABEL products provide polyamide markers for labelling conductors, cables, devices and facilities with ink print. These markers are available in many shapes and colours: in the classic MC Maxicard format for self-printing with the EMS plotter system EMS or other ink-jet systems, or ready-to-use customized printed in the PMC Pocket-Maxicard format.

Cat. no. 98075.2

07 CONTA-BOX

Housings
Our wide variety of housings made of polystyrene, polycarbonate, polyester, ABS and aluminium deliver solutions for protecting electronic circuits, integrated devices and terminal blocks. On request, the housings can be custom-processed and assembled with our CONTA-CONNECT, CONTA-ELECTRONICS and CONTA-CON product lines.

Cat. no. 98076.2

08 KDS CABLE MANAGEMENT SYSTEMS

KDS cable entries | KES cable entries | SAB|SSAB|SABK shielding solutions
The KDS and KES cable entries enable a tool-free, IP66-sealed feed-through for unassembled and assembled cables and hoses. The feed-through openings can be adapted at any time to meet your requirements. The SAB shied-connection clips can be used to provide a reliable shield contact with conductor diameters from 3 mm to 35 mm.

Cat. no. 98077.2
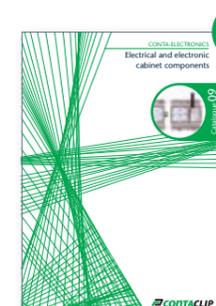
09 CONTA-ELECTRONICS

Electrical and electronic cabinet components
Our CONTA-ELECTRONICS products provide active and passive components for the transfer and conversion of analogue and digital signals at the coupling level. This product line includes power supplies, multi-function timing relays, coupling relays, digital switching modules, interface modules, opto-couplers, signal converters, GSM communication modules and much more.

Cat. no. 98078.2
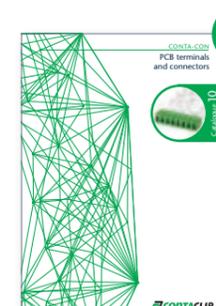
10 CONTA-CON

PCB terminals and connectors
This catalogue presents our wide variety of CONTA-CON PCB terminal blocks and connector systems. The modular components can be configured for any required number of poles. They are available in the wire connection types: wire protection, eccentric, clamping yoke, and (for demanding operating conditions) with tension-spring or Push-in wire terminations.

Cat. no. 98079.2

GSM-PRO2 – the perfect communicator

GSM-PRO2 (E) – the perfect communicator
CONTA-CLIP's **GSM-PRO2** series provides a 2G/3G and **4G** remote control and maintenance solution which allows you to monitor and control decentralized facilities.

The **GSM-PRO2(E)** module informs you when the process reaches a user-defined status or limit value. Digital and analogue inputs values can also be transmitted via e-mail or SMS (text message). The digital relay outputs can be switched using an SMS sent from the decentralized control room or from the service technician. The process can be monitored and controlled remotely. Monitoring and controlling the **GSM-PRO2(E)** modules is even easier when using our iPhone or Android apps.

The inputs and outputs of the modules and their desired functions can be configured using an easy-to-understand application.

GSM-PRO2 communicates with a PLC
The built-in Modbus RTU interface enables the **GSM-PRO2** to be connected as a slave to other controllers (such as a PLC). Thus, the **GSM-PRO2** can be used to conveniently expand a PLC system with additional GSM functionality. By using predefined registers, the PLC can send an SMS or e-mail using the **GSM-PRO2** as a messenger. The PLC can also be controlled using the **GSM-PRO2**. The module can set predefined registers to influence the PLC process (analogue or digital).

Inputs and outputs
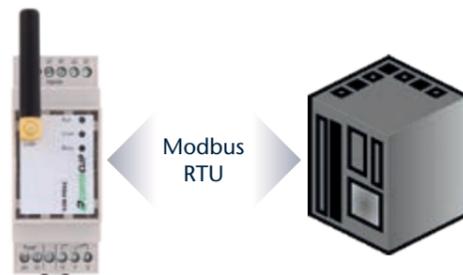Both **GSM-PRO2** modules are equipped with two multi-functional inputs, a relay output and a pulse counter input. The two **GSM-PRO2E** variants are equipped with ten multi-functional inputs, four relay outputs and a pulse counter input. The pulse counter input can process a maximum of 1000 pulses per second and enables, for example, a photovoltaic system or a kWh counter to be connected.

Expansion modules
The **GSM-PRO2** modules also allow you to increase the number of available inputs and outputs. Up to 15 I/O expansion modules in 4 different versions can be controlled from each module. Integrated plug-in connectors are used to control and supply power to the modules. The expansion modules can also be configured using an easy-to-understand application.

OTA (over-the-air) capabilities
In many systems or machines, some parameters or user entries may need to be changed after the installation is completed. In such cases you may also need to change parameters on the **GSM-PRO2** module. The **GSM-PRO2** module features OTA (over-the-air) functions for just such instances.

OTA configuration
Whether it is a user's new telephone number, a new I/O setting, a changed module name or any other change: the settings of all **GSM-PRO2** modules can be adjusted comfortably and decentralized throughout the world.

OTA firmware updates
The **GSM-PRO2** module can also update its firmware using OTA, so modules with different versions can always be kept up to date.

GSM-PRO2-GPS
The **GSM-PRO2-GPS** module has an integrated GPS function with an external antenna connection. The module can determine its location at any time and the user can then view the mapped location in a web browser. This way, it becomes easy and clear to monitor the positions of portable systems or machines at any time.
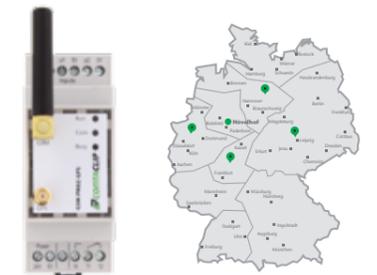
Smartphone apps
CONTA-CLIP's iPhone and Android smartphone apps for the **GSM-PRO2** modules provide a simple and fast solution so that you can get an overview of each distributed system and application. These apps can show you the status of all inputs and outputs from one or more **GSM-PRO2** modules. They also allow you some control over the process. Module outputs can be controlled easily and directly using this app. The app buttons provide an intuitive control interface (for controlling the heating, a motor, water pump, etc.).

Web Portal software
The **GSM-PRO2**, like most SMS modules, are often used as stand-alone units in the field. These modules are put to use at various remote locations even though they normally have configurations which are very similar. It is often quite helpful to have one overall view of the status of all modules used in the field. The new **GSM-PRO2** portal software from **CONTA-CLIP** offers you precisely this possibility. All modules in the field can now be easily monitored and run from a single local site or control panel.
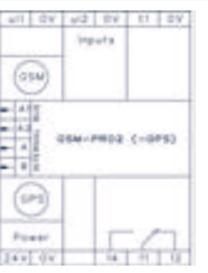
Left page

Circuit diagram	GSM-PRO2	GSM-PRO2-GPS
Dimensions (L x W x H) TS 35 / direct mount, mm	95 x 36 x 67 / 65 (without antenna)	95 x 36 x 67 / 65 (without antenna)
Weight, g	133	137
Type	GSM-PRO2	GSM-PRO2-GPS
Cat. no. Qty.	16368.2 1	16369.2 1
Input/output data		
2 multi-function (analogue/digital) inputs	0 ... 10 V / 0(4) ... 20 mA / 24 V DC (10 ... 30 V DC)	
Resolution/accuracy (0 ... 10 V) (0 ... 20 mA)	20 mV / ± (20 mV +0.3 % of the measured value) – 40 µA / ± (40 µA +0.3 % of the measured value)	
Input resistance (0 ... 10 V) (0 ... 20 mA)	80 kOhm / 500 Ohm	
Input current (dig. inputs)	@10 V: 0.2 mA / @24 V: 0.5 mA / @30 V: 0.6 mA	
UI minimum pulse duration	500 ms	
Threshold of dig. Inputs	Low < 2 V / High > 4 V	
Counter, digital input (pull-down) Max. pull-down resistance: 24 kOhm	1000 pulses/sec. Max. pull-down resistance: 24 kOhm	
Pull-down voltage source	Typ. 10 ... 30 V DC, unregulated, depending on load	
Relay output	CO universal contact, 250 V ~	
Continuous current / Inrush current (resistive load)	5 A / 5 A	
Max. switching capacity	1200 VA at 240 V AC, 5 A	
Lifespan at resistive load	Electrical, at max. load: > 1.5 x 10⁵ switching cycles. Mechanical: > 15 x 10⁶ switching cycles	
Max. switching frequency	6 min⁻¹ at continuous current, 1200 min⁻¹ without load	
Contact material / Test voltage	AgNi / 4 kV	
GSM specifications		
Frequency bands	2G: Quad-band GSM bands: 850, 900, 1800 and 1900 MHz	
	3G: Five-band UMTS (WCDMA/FDD) bands: 800, 850, 900, 1900 and 2100 MHz	
SIM card	Nano SIM	
Antenna	50 Ohm impedance, SMA plug	
GPS specifications		
Frequency		1575 ... 1587 Mhz
Time to first fix (@ -140 dBm)		Hot < 2 s, warm < 35 s, cold < 46 s
Antenna		50 Ohm impedance, SMA plug
Voltage active antenna		3 V @ RF plug
Bus specifications		
Interface ports	Serial RS485, uninsulated	
Voltage interface	24 V DC – 0.5 A	
Bus protocol	Modbus RTU	
Modbus slave functionality is available	Yes (no other expansion modules can be connected)	
General information		
Voltage supply	10 to 30 V DC	
Current consumption	275 mA DC @ 24 V DC	
Backup power	Internal maintenance-free supercap capacitor	
Operating / storage temperature	-20 °C to +50 °C / -20 °C to +70 °C	
Max. relative humidity	80 %, non-condensing	
DIN VDE specifications	Low Voltage Directive (LVD) 2014/35/EU, in compliance with EN 50178	
Electromagnetic properties	Directive 2014/30/EU, in compliance with EN 55011 and EN 61326-1	
Frequency spectrum	RED 2014/53/EU	
Wire cross-section / Stripping length	0.2 ... 2.5 mm² screw terminal connection / 6 mm	
Mounting / Installation position	DIN rail TS35 or direct mounting / arbitrary	
Material / Flammability class	Housing: Noryl; terminals: polyamide 6.6 / UL94 V-0	
Protection class (DIN 40050)	IP 20	
Accessories		
Antenna GSM	GSM-ANTENNA-90°	
Cat. no. Qty.	16379.2 1	
GPS antenna	GSM-ANTENNA-GPS-3M-K	
Cat. no. Qty.	16380.2 1	
External combi-antenna GSM + GPS	GSM-ANTENNA-EXTERNAL-GSM+GPS-SMA-3M	
Cat. no. Qty.	16381.2 1	
External GSM antenna	GSM-ANTENNA-EXTERNAL-SMA-3M	
Cat. no. Qty.	16061.2 1	
External GSM antenna	GSM-ANTENNA-EXTERNAL-SMA-5M	
Cat. no. Qty.	16172.2 1	
External GSM antenna	GSM-ANTENNA-EXTERNAL-SMA-10M	
Cat. no. Qty.	16173.2 1	
Programming cable	GSM-USB-MICRO-cable	
Cat. no. Qty.	16382.2 1	

Right page

Circuit diagram	GSM-PRO2E	GSM-PRO2E-GPS
Dimensions (L x W x H) TS 35 / direct mount, mm	95 x 88 x 67 / 65 (without antenna)	95 x 88 x 67 / 65 (without antenna)
Weight, g	188	190
Type	GSM-PRO2E	GSM-PRO2E-GPS
Cat. no. Qty.	16407.2 1	16408.2 1
Input/output data		
10 multi-function (analogue/digital) inputs	0 – 10 V / 0 (4) – 20 mA / 24 V DC (10 – 30 V DC)	
Resolution/accuracy (0 ... 10 V) (0 ... 20 mA)	20 mV / ± (20 mV 0.3 % of the measured value) – 40 µA / ± (40 µA + 0.3 % of the measured value)	
Input resistance (0 ... 10 V) (0 ... 20 mA)	80 kOhm / 500 Ohm	
Input current (dig. inputs)	@10 V: 0.2 mA / @24 V: 0.5 mA / @30 V: 0.6 mA	
UI minimum pulse duration	500 ms	
Threshold of dig. Inputs	Low < 2 V / High > 4 V	
Counter, digital input (pull-down) Max. pull-down resistance: 24 kOhm	1000 pulses/sec. Max. pull-down resistance: 24 kOhm	
Pull-down voltage source	Typ. 10 ... 30 V DC, unregulated, depending on load	
4 relay outputs	CO universal contact, 250 V ~	
Continuous current / Inrush current (resistive load)	5 A / 5 A	
Max. switching capacity	1200 VA at 240 V AC, 5 A	
Lifespan at resistive load	Electrical, at max. load: > 1.5 x 10⁵ switching cycles. Mechanical: > 15 x 10⁶ switching cycles	
Max. switching frequency	6 min⁻¹ at continuous current, 1200 min⁻¹ without load	
Contact material / Test voltage	AgNi / 4 kV	
GSM specifications		
Frequency bands	2G: Quad-band GSM bands: 850, 900, 1800 and 1900 MHz	
	3G: Five-band UMTS (WCDMA/FDD) bands: 800, 850, 900, 1900 and 2100 MHz	
SIM card	Nano SIM	
Antenna	50 Ohm impedance, SMA plug	
GPS specifications		
Frequency		1575 ... 1587 Mhz
Time to first fix (@ -140 dBm)		Hot < 2 s, warm < 35 s, cold < 46 s
Antenna		50 Ohm impedance, SMA plug
Voltage active antenna		3 V @ RF plug
Bus specifications		
Interface ports	Serial RS485, uninsulated	
Voltage interface	24 V DC – 0.5 A	
Bus protocol	-	
Modbus slave functionality is available	No	
General information		
Voltage supply	10 to 30 V DC	
Current consumption	285 mA DC @ 24 V DC	
Backup power	Internal maintenance-free supercap capacitor	
Operating / storage temperature	-20 °C to +50 °C / -20 °C to +70 °C	
Max. relative humidity	80 %, non-condensing	
DIN VDE specifications	Low Voltage Directive (LVD) 2014/35/EU, in compliance with EN 50178	
Electromagnetic properties	Directive 2014/30/EU, in compliance with EN 55011 and EN 61326-1	
Frequency spectrum	RED 2014/53/EU	
Wire cross-section / Stripping length	0.2 ... 2.5 mm² screw terminal connection / 6 mm	
Mounting / Installation position	DIN rail TS35 or direct mounting / arbitrary	
Material / Flammability class	Housing: Noryl; terminals: polyamide 6.6 / UL94 V-0	
Protection class (DIN 40050)	IP 20	
Accessories		
Antenna GSM	GSM-ANTENNA-90°	
Cat. no. Qty.	16379.2 1	
GPS antenna	GSM-ANTENNA-GPS-3M-K	
Cat. no. Qty.	16380.2 1	
External combi-antenna GSM + GPS	GSM-ANTENNA-EXTERNAL-GSM+GPS-SMA-3M	
Cat. no. Qty.	16381.2 1	
External GSM antenna	GSM-ANTENNA-EXTERNAL-SMA-3M	
Cat. no. Qty.	16061.2 1	
External GSM antenna	GSM-ANTENNA-EXTERNAL-SMA-5M	
Cat. no. Qty.	16172.2 1	
External GSM antenna	GSM-ANTENNA-EXTERNAL-SMA-10M	
Cat. no. Qty.	16173.2 1	
Programming cable	GSM-USB-MICRO-cable	
Cat. no. Qty.	16382.2 1	

Circuit diagram	GSM-PRO2-4G-EU	GSM-PRO2-4G-US
	4G lte	4G lte
Dimensions (L x W x H) TS 35 / direct mount, mm	95 x 36 x 67 / 65 (without antenna)	95 x 36 x 67 / 65 (without antenna)
Weight, g	135	135
Type		
Cat. no. Qty.	**GSM-PRO2-4G-EU** 16454.2 1	**GSM-PRO2-4G-US** 16456.2 1
Input/output data		
2 multi-function (analogue/digital) inputs	0 ... 10 V / 0(4) ... 20 mA / 24 V DC (10 ... 30 V DC)	
Resolution/accuracy (0 ... 10 V) (0 ... 20 mA)	20 mV / ± (20 mV +0.3 % of the measured value) – 40 µA / ± (40 µA +0.3 % of the measured value)	
Input resistance (0 ... 10 V) (0 ... 20 mA)	80 kOhm / 500 Ohm	
Input current (dig. inputs)	@10 V: 0.2 mA / @24 V: 0.5 mA / @30 V: 0.6 mA	
UI minimum pulse duration	500 ms	
Threshold of dig. Inputs	Low < 2 V / High > 4 V	
Counter, digital input (pull-down)	1000 pulses/sec. Max. pull-down resistance: 24 kOhm	
Pull-down voltage source	Typ. 10 ... 30 V DC, unregulated, depending on load	
Relay output	CO universal contact, 250 V ~	
Continuous current / Inrush current (resistive load)	5 A / 5 A	
Max. switching capacity	1200 VA at 240 V AC, 5 A	
Lifespan at resistive load	Electrical, at max. load: > 1.5 x 10^5 switching cycles. Mechanical: > 15 x 10^6 switching cycles	
Max. switching frequency	6 min^{-1} at continuous current, 1200 min^{-1} without load	
Contact material / Test voltage	AgNi / 4 kV	
GSM specifications		
Frequency bands	2G - GSM/GPRS/EDGE: dual band 900/1800 MHz	
	3G - UMTS/HSPA+: dual band 900 (BdVIII)/ 2100 MHz (BdI)	3G - UMTS/HSPA+: triple band, 850 (BdV)/ AWS (BdIV)/1900 MHz (BdII)
	4G - LTE CAT1: Penta band 700 (Bd28)/ 800 (Bd20)/900 (Bd8)/1800 (Bd3)/2100 MHz (Bd1)	4G - LTE CAT1: Quad band, 700 (Bd12)/ 850 (Bd5)/ AWS (Bd4)/1900 MHz (Bd2)
SIM card	Nano SIM	
Antenna	50 Ohm impedance, SMA plug	
Bus specifications		
Interface ports	Serial RS485, uninsulated	
Voltage interface	24 V DC – 0.5 A	
Bus protocol	Modbus RTU	
Modbus slave functionality is available	Yes (no other expansion modules can be connected)	
General information		
Voltage supply	10 to 30 V DC	
Current consumption	275 mA DC @ 24 V DC	
Backup power	Internal maintenance-free supercap capacitor	
Operating / storage temperature	-20 °C to +50 °C / -20 °C to +70 °C	
Max. relative humidity	80 %, non-condensing	
DIN VDE specifications	Low Voltage Directive (LVD) 2014/35/EU, in compliance with EN 50178	
Electromagnetic properties	Directive 2014/30/EU, in compliance with EN 55011 and EN 61326-1	
Frequency spectrum	RED 2014/53/EU	CFR Title 47 parts 22 and 24
Wire cross-section / Stripping length	0.2 ... 2.5 mm² screw terminal connection / 6 mm	
Mounting / Installation position	DIN rail TS35 or direct mounting / arbitrary	
Material / Flammability class	Housing: Noryl; terminals: polyamide 6.6 / UL94 V-0	
Protection class (DIN 40050)	IP 20	
Accessories		
Antenna GSM	**GSM-ANTENNA-4G**	
Cat. no. Qty.	16450.2 1	
External GSM antenna	**GSM-ANTENNA-EXTERNAL-4G-3M**	
Cat. no. Qty.	16451.2 1	
External GSM antenna	**GSM-ANTENNA-EXTERNAL-4G-5M**	
Cat. no. Qty.	16452.2 1	
Programming cable	**GSM-USB-MICRO-cable**	
Cat. no. Qty.	16382.2 1	

Circuit diagram	GSM-PRO2E-4G-EU	GSM-PRO2E-4G-US
	4G lte	4G lte
Dimensions (L x W x H) TS 35 / direct mount, mm	95 x 88 x 67 / 65 (without antenna)	95 x 88 x 67 / 65 (without antenna)
Weight, g	188	188
Type		
Cat. no. Qty.	**GSM-PRO2E-4G-EU** 16455.2 1	**GSM-PRO2E-4G-US** 16457.2 1
Input/output data		
10 multi-function (analogue/digital) inputs	0 – 10 V / 0 (4) – 20 mA / 24 V DC (10 – 30 V DC)	
Resolution/accuracy (0 ... 10 V) (0 ... 20 mA)	20 mV / ± (20 mV 0.3 % of the measured value) – 40 µA / ± (40 µA + 0.3 % of the measured value)	
Input resistance (0 ... 10 V) (0 ... 20 mA)	80 kOhm / 500 Ohm	
Input current (dig. inputs)	@10 V: 0.2 mA / @24 V: 0.5 mA / @30 V: 0.6 mA	
UI minimum pulse duration	500 ms	
Threshold of dig. Inputs	Low < 2 V / High > 4 V	
Counter, digital input (pull-down)	1000 pulses/sec. Max. pull-down resistance: 24 kOhm	
Pull-down voltage source	Typ. 10 ... 30 V DC, unregulated, depending on load	
4 relay outputs	CO universal contact, 250 V ~	
Continuous current / Inrush current (resistive load)	5 A / 5 A	
Max. switching capacity	1200 VA at 240 V AC, 5 A	
Lifespan at resistive load	Electrical, at max. load: > 1.5 x 10^5 switching cycles. Mechanical: > 15 x 10^6 switching cycles	
Max. switching frequency	6 min^{-1} at continuous current, 1200 min^{-1} without load	
Contact material / Test voltage	AgNi / 4 kV	
GSM specifications		
Frequency bands	2G - GSM/GPRS/EDGE: dual band 900/1800 MHz	
	3G - UMTS/HSPA+: dual band 900 (BdVIII)/ 2100 MHz (BdI)	3G - UMTS/HSPA+: triple band, 850 (BdV)/ AWS (BdIV)/1900 MHz (BdII)
	4G - LTE CAT1: Penta band 700 (Bd28)/ 800 (Bd20)/900 (Bd8)/1800 (Bd3)/2100 MHz (Bd1)	4G - LTE CAT1: Quad band, 700 (Bd12)/ 850 (Bd5)/ AWS (Bd4)/1900 MHz (Bd2)
SIM card	Nano SIM	
Antenna	50 Ohm impedance, SMA plug	
Bus specifications		
Interface ports	Serial RS485, uninsulated	
Voltage interface	24 V DC – 0.5 A	
Bus protocol	-	
Modbus slave functionality is available	No	
General information		
Voltage supply	10 to 30 V DC	
Current consumption	285 mA DC @ 24 V DC	
Backup power	Internal maintenance-free supercap capacitor	
Operating / storage temperature	-20 °C to +50 °C / -20 °C to +70 °C	
Max. relative humidity	80 %, non-condensing	
DIN VDE specifications	Low Voltage Directive (LVD) 2014/35/EU, in compliance with EN 50178	
Electromagnetic properties	Directive 2014/30/EU, in compliance with EN 55011 and EN 61326-1	
Frequency spectrum	RED 2014/53/EU	CFR Title 47 parts 22 and 24
Wire cross-section / Stripping length	0.2 ... 2.5 mm² screw terminal connection / 6 mm	
Mounting / Installation position	DIN rail TS35 or direct mounting / arbitrary	
Material / Flammability class	Housing: Noryl; terminals: polyamide 6.6 / UL94 V-0	
Protection class (DIN 40050)	IP 20	
Accessories		
Antenna GSM	**GSM-ANTENNA-4G**	
Cat. no. Qty.	16450.2 1	
External GSM antenna	**GSM-ANTENNA-EXTERNAL-4G-3M**	
Cat. no. Qty.	16451.2 1	
External GSM antenna	**GSM-ANTENNA-EXTERNAL-4G-5M**	
Cat. no. Qty.	16452.2 1	
Programming cable	**GSM-USB-MICRO-cable**	
Cat. no. Qty.	16382.2 1	

Digital input module — GSM-PRO-10DI — Circuit diagram

- 10 digital inputs, 24V
- One LED display per input

Type	GSM-PRO-10DI	
Cat. no. Qty.	16375.2	1

Digital output module — GSM-PRO-4DO — Circuit diagram

- 4 relay outputs, one CO contact each
- Max. continuous current per relay: 16 A (contact materials for high inrush currents)
- One yellow LED status display per channel

Type	GSM-PRO-4DO	GSM-4DO-12 V DC	
Cat. no. Qty.	16378.2 1	16444.2	1

Analogue input module — GSM-PRO-8AI — Circuit diagram

- 8 multi-function analogue inputs:
  0 ... 10 V, 0(4) ... 20 mA, NTC, RTD (PT1000 / NI1000) -40 ... +120 °C
- Custom configuration for each input

Type	GSM-PRO-8AI	
Cat. no. Qty.	16377.2	1

Analogue output module — GSM-PRO-4AO — Circuit diagram

- 4 analogue outputs, 0 ... 10 V

Type	GSM-PRO-4AO	
Cat. no. Qty.	16376.2	1

Connection module — GSM-PRO-CON — Circuit diagram

- Modbus connection module for connecting external Modbus devices
- Connector module for connecting the power supply to GSM-PRO expansion modules. This is required starting with the tenth expansion module (max. 2.5 A).

Type	GSM-PRO-CON	
Cat. no. Qty.	16458.2	1

14

Technical documentation

		GSM-PRO-10DI	GSM-PRO-4DO	GSM-PRO-4DO 12 V DC	GSM-PRO-8AI	GSM-PRO-4AO	GSM-PRO-CON
Multi-function analogue inputs	0 ... 10 V / 0 (4) ... 20 mA / RTD. Default: RTD input. Input configurable using plug-in resistors				8		
Input resistance (0 ... 10V)	Resistance: fixed (200 kOhm)				•		
Input resistance (0(4) ... 20 mA)	Resistor: plug-in (Ri), 250 ohms ±0.1% (resistor is not included)*				•		
Input resistance (RTD -40 ... +120 °C)	Resistor: plug-in (Rt), sensor-dependent ±0.1% (resistor is not included)*				•		
RTD sensor type	PT1000 (IEC6075) Rt: 5k11 ±0.1%, NI1000 (TK5000 Siemens) Rt: 5k11 ±0.1%, NTC (10K3A1) Rt: 40K ±0.1% *				•		
Resolution / conversion error (0 ... 10 V)	10 bit / ±(10 mV + 0.3% of measured value)				•		
Resolution / conversion error (0(4) ... 20 mA)	10 bit / ±(20 µA + 0.4% of measured value)				•		
Resolution / conversion error (RTD)	14 bit / ±(0.4 °C + 0.5% of measured value)				•		
Temperature coefficient	< 0.02 % °C				•		
Digital input	Active high (connect the supply voltage or VDD(+) from the module to the input)	10					
Input voltage	24 V DC (10 ... 30V)	•					
Threshold of dig. Inputs	Low < 3 V / High > 6 V	•					
Max. frequency	20 Hz	•					
Min. pulse length	15 ms	•					
Impedance	58 kOhm	•					
VDD (+) output	Can only be used for the inputs	•					
LED status display	Bi-colour LED per input (green/red/off, programmable)	•					
Analogue output	0 ... 10 V DC, short-circuit and overvoltage protected (24 V)					4	
Load resistance / current per channel	> 1 kOhm / < 10 mA					•	
Resolution / Conversion error	10 bit / ±(30 mV + 0.5 % of measured value)					•	
Temperature coefficient	< 0.02 % °C					•	
LED status display	Yellow LED. Light intensity depends on output value; < 1.5 V = not illuminated					•	
Relay output			4	4			
Contact type	4 x 1 CO		•	•			
Max. switching voltage	250 V~		•	•			
Continuous current / Inrush current (resistive load)	16 A / 80 A (20 ms)		•	•			
Max. module current (all relays)	32 A		•	•			
Max. switching capacity	4000 VA		•	•			
Electrical lifespan at nominal / 2 A load	1 x 10^5 / 7 x 10^5 switching operations @ 23 °C and resistive load		•	•			
Mechanical lifespan	30 x 10^5 switching operations		•	•			
Max. switching frequency	6 min^{-1} at continuous current, 1200 min^{-1} without load		•	•			
Contact material	AgSnO2		•	•			
Test voltage coil - contact	5 kV		•	•			
LED status display	Yellow		•	•			
Bus specifications							
Interface ports	Serial RS485, uninsulated	•	•	•	•	•	•
Max. cable length	500 m	•	•	•	•	•	•
Terminating resistor	Integrated terminating resistor is activated by jumper (default: off)	•	•	•	•	•	•
Protective circuitry	Integrated transient protection	•	•	•	•	•	•
Bus connection	Integrated plug-in connector (modules mounted without clearance, no wiring required)	•	•	•	•	•	•
Connection type	Shielded twisted-pair cable	•	•	•	•	•	•
General information							
LED status display (two colours)	Run - no communication - Error	•	•	•	•	•	
Voltage supply	20…28 V DC (Power at bus plug: 5 A max.)		•		•	•	•
Voltage supply	10…30 V DC (power at bus connector: 5 A max)	•					
Voltage supply	10.8…12.2 V DC (power at bus plug: 5 A max)			•			
Current consumption, DC	... mA typical @ 24 VDC (with all outputs active @ full load)	30	100	100	50	57	
Operating / storage temperature	0 °C to +50 °C / −20 °C to +70 °C	•	•	•	•	•	•
Relative humidity	max. 90 %, non-condensing	•	•	•	•	•	•
The CE label	Low Voltage Directive (LVD) 2014/35/EU, in compliance with EN 50178 EMC Directive 2014/30/EU, in compliance with EN 55011 and EN 61326-1	•	•	•	•	•	•
Connection cross-section / Stripping length	0.2 ... 2.5 mm² screw connection / 6 mm	•	•	•	•	•	•
Mounting / Installation position	DIN rail TS35 or direct mounting, as desired	•	•	•	•	•	•
Dimensions (L x W x H)	... x 95 x 60 mm	53	53	53	53	36	36
Insulating material / Flammability class	Housing and I/O terminals: polycarbonate; Bus connector: Polyamide 6.6 / UL94 V-0	•	•	•	•	•	•
Construction	Can be installed in rows without gap	•	•	•	•	•	•
Protection class (DIN 40050)	IP 20						
Weight, g		121	154	154	117	86	64

* Plug-in resistors Ri and Rt are available on request

15

GSM-PRO Antenna 2G/3G

GSM antenna	GSM-ANTENNA-90°	GSM-ANTENNA-EXTERNAL-SMA-3M
Weight, g	8	81
Type	**GSM-ANTENNA-90°**	**GSM-ANTENNA-EXTERNAL-SMA-3M**
Cat. no. Qty.	*16379.2* 1	*16061.2* 1
General information		
Frequency GSM	800, 850, 900, 1900 and 2100 MHz	900, 1800, 2100 MHz
Frequency GPS		
Antenna type GPS		
Max. gain	1.0 dBi (824 ... 960 MHz)	1 dBi
	2.0 dBi (1710 ... 1990 MHz)	
	2.5 dBi (1920 ... 2170 MHz)	
Impedance	50 Ohm	50 Ohm
Connection type	SMA male	SMA male
Cable length		3 meters
Bore hole		17 mm
Antenna diameter	8 mm	45 mm
Antenna height	41 mm	17 mm
Total height	49.5 mm	39.5 mm
Temperature range	-40 °C ... +75 °C	-40 °C ... +85 °C
Material of antenna housing	PC + PBT	Nylon 6
Mounting type	Screw	Screw
Antenna shape	Stubby	Puck

GPS / GSM antenna	GSM-ANTENNA-GPS-3M-K	GSM-ANTENNA-EXTERNAL-GSM+GPS
Weight, g	53	158
Type	**GSM-ANTENNA-GPS-3M-K**	**GSM-ANTENNA-EXTERNAL-GSM+GPS-SMA-3M**
Cat. no. Qty.	*16380.2* 1	*16381.2* 1
General information		
Frequency GSM		800, 850, 900, 1900 and 2100 MHz
Frequency GPS	1575.42 ±1 MHz	1575.42 ±1 MHz
Antenna type GPS	Active (power supply 2.5 ... 5 V DC)	Active (power supply 2.5 ... 5 V DC)
Max. gain GSM/GPS	- / 2 dBic	1 dBi / 2 dBic
Impedance	50 Ohm	50 Ohm
Connection type	SMA male	two SMA male
Cable length	3 meters	3 meters
Bore hole		13 mm
Antenna diameter	40.5 x 50.8 mm	81.3 mm
Antenna height	16.8 mm	14.6 mm
Total height	16.8 mm	29.6 mm
Temperature range	-40 °C...+85 °C	-40 °C...+85 °C
Material of antenna housing	ABS	ABS
Mounting type	Magnetic	Screw
Antenna shape	Puck	Puck

GSM antenna	GSM-ANTENNA-EXTERNAL-SMA-5M	GSM-ANTENNA-EXTERNAL-SMA-10M
Weight, g	280	480
Type	**GSM-ANTENNA-EXTERNAL-SMA-5M**	**GSM-ANTENNA-EXTERNAL-SMA-10M**
Cat. no. Qty.	*16172.2* 1	*16173.2* 1
General information		
Frequency GSM	800, 850, 900, 1900 and 2100 MHz	800, 850, 900, 1900 and 2100 MHz
Frequency GPS	-	-
Antenna type GPS		
Max. gain	1 dBi	1 dBi
Impedance	50 Ohm	50 Ohm
Connection type	SMA male	SMA male
Cable length	5 meters	10 meters
Bore hole	17 mm	17 mm
Antenna diameter	80.0 mm	80.0 mm
Antenna height	23.0 mm	23.0 mm
Total height	45.0 mm	45.0 mm
Temperature range	-40 °C...+85 °C	-40 °C...+85 °C
Material of antenna housing	Nylon 6	Nylon 6
Mounting type	Screw	Screw
Antenna shape	Puck	Puck

GSM-PRO Antenna 4G / LTE

GSM antenna	GSM-ANTENNA-4G

Weight, g	9
Type	**GSM-ANTENNA-4G**
Cat. no. Qty.	*16450.2* 1
General information	
Frequency GSM	800, 850, 900 – 1700, 1800, 1900, 2100 – 2600 MHz
Frequency GPS	
Antenna type GPS	
Max. gain	0.1 dBi (689 ... 960 MHz)
	2.9 dBi (1710 ... 2170 MHz)
	4.6 dBi (2500 ... 2700 MHz)
Impedance	50 Ohm
Connection type	SMA male
Cable length	
Bore hole	
Antenna diameter	10 mm
Antenna height	49 mm
Total height	71 mm
Temperature range	-20 °C...+65 °C
Material of antenna housing	POM
Mounting type	Screw
Antenna shape	Stubby

GSM antenna	GSM-ANTENNA-EXTERNAL-4G-3M	GSM-ANTENNA-EXTERNAL-4G-5M

|		
Weight, g	122	198
Type	**GSM-ANTENNA-EXTERNAL-4G-3M**	**GSM-ANTENNA-EXTERNAL-4G-5M**
Cat. no. Qty.	*16451.2* 1	*16452.2* 1
General information		
Frequency GSM	689 – 960/1710 – 2690 MHz	689 – 960/1710 – 2690 MHz
Frequency GPS		
Antenna type GPS		
Max. gain	2.5 dBi	2.5 dBi
Impedance	50 Ohm	50 Ohm
Connection type	SMA male	SMA male
Cable length	3 meters	5 meters
Bore hole	13 mm	13 mm
Antenna diameter	81.3 mm	81.3 mm
Antenna height	14.6 mm	14.6 mm
Total height	29.6 mm	29.6 mm
Temperature range	-40 °C...+85 °C	-40 °C...+85 °C
Material of antenna housing	ABS	ABS
Mounting type	Screw	Screw
Antenna shape	Puck	Puck

Notes
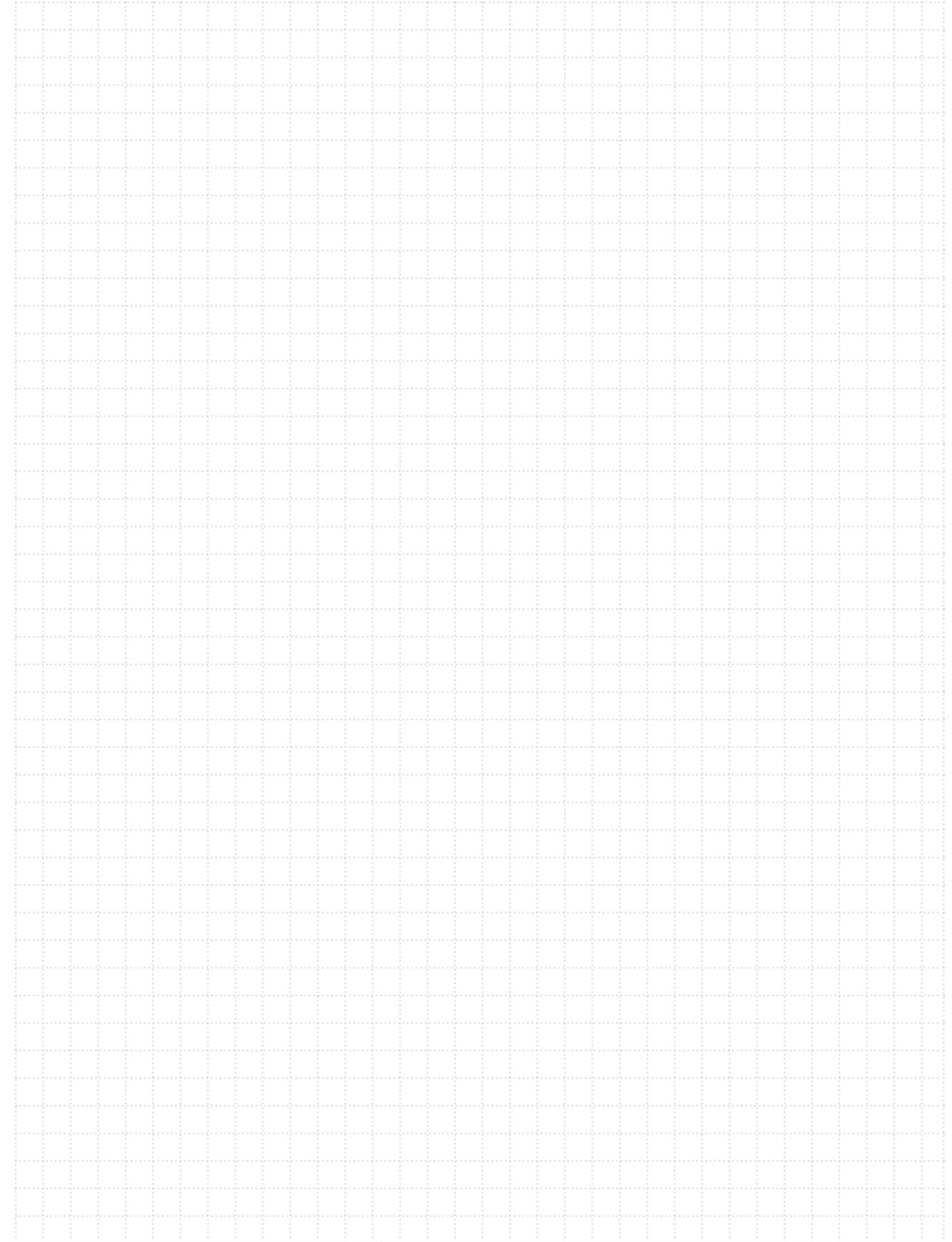
CONTACLIP

Otto-Hahn-Str. 7
D-33161 Hövelhof,
Germany

Phone
+49 (0) 5257 9833-0
Fax +49 (0) 5257 9833-33

info@conta-clip.de
www.conta-clip.com
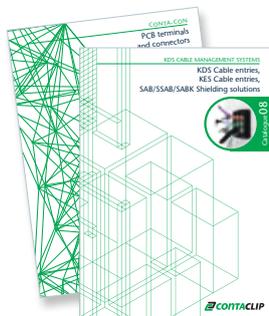
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