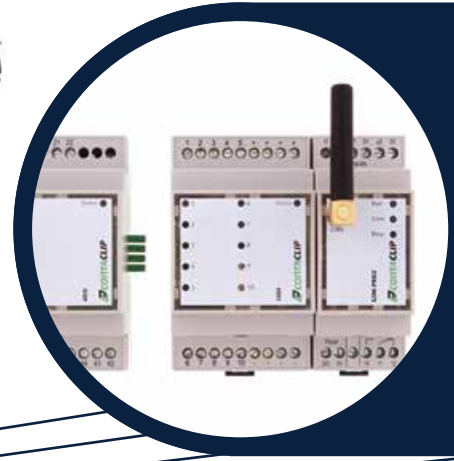


CONTA-ELECTRONICS

# GSM-PRO2

## 2G / 3G / 4G Remote Control Solution

4G  **lte**



Product Information

 **CONTA CLIP**

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## 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.

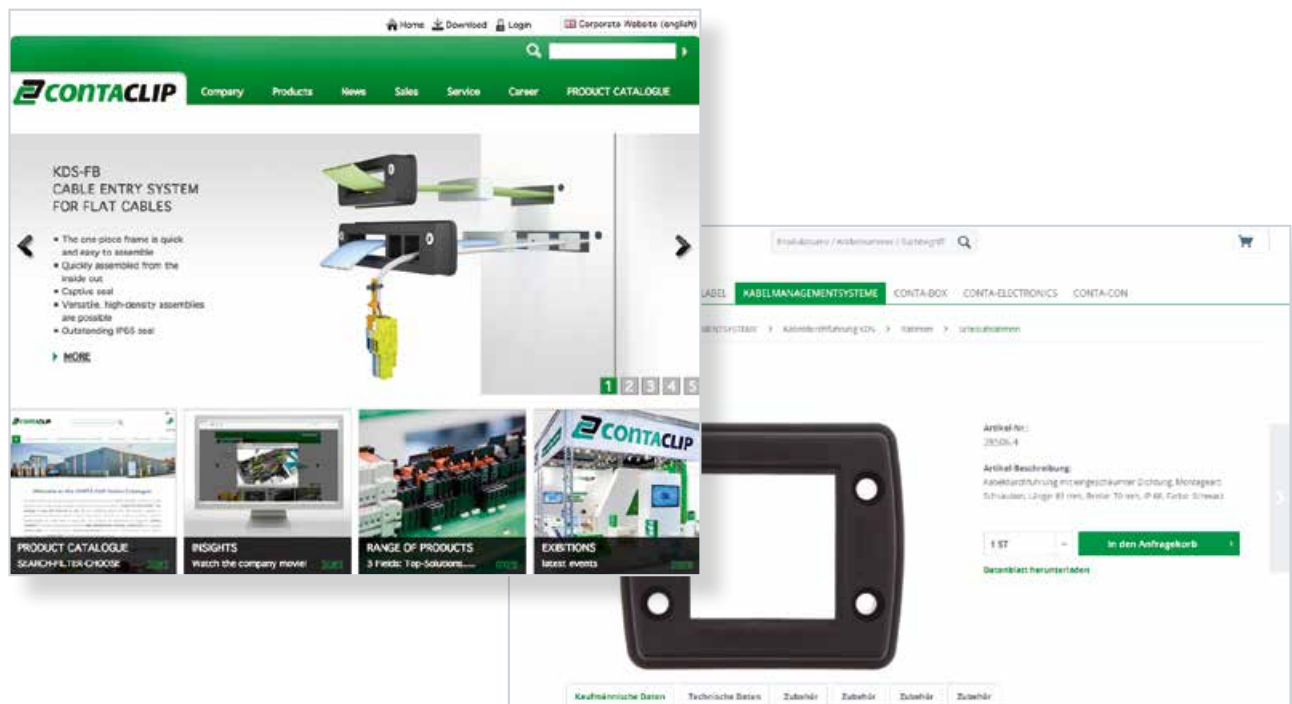
**Application films:** Complex functions be explained easily and clearly with sounds and images.

**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

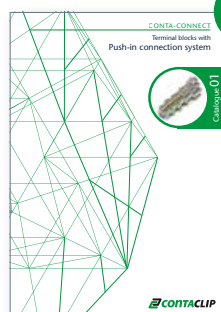
Canada  
Mexico  
United States

## Our locations in South America

Bolivia  
Brazil  
Chile  
Ecuador  
Columbia

# A complete line of products to meet your demands

## The CONTA-CLIP Catalogues



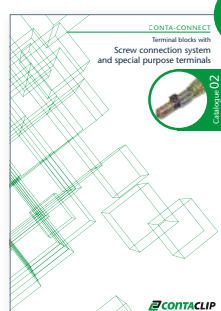
### 01 CONTA-CONNECT

#### 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 mm<sup>2</sup> to 25 mm<sup>2</sup>.



Cat. no. 98070.2



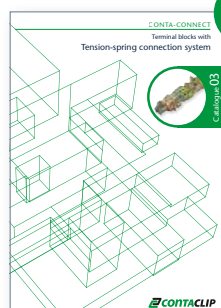
### 02 CONTA-CONNECT

#### 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



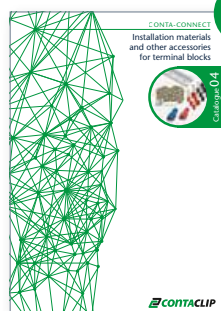
### 03 CONTA-CONNECT

#### Terminal blocks with tension-spring connection

Our versatile line of terminals with tension spring connections for conductor cross-sections from 0.2 mm<sup>2</sup> to 16 mm<sup>2</sup> 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



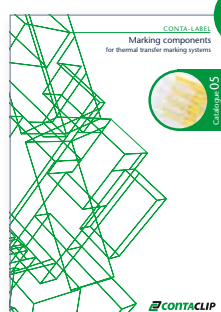
### 04 CONTA-CONNECT

#### Installation materials and other accessories for terminal blocks

Our installation products include cabling ducts, assembly tools, cable glands with metric or PG threads, DIN rails, 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

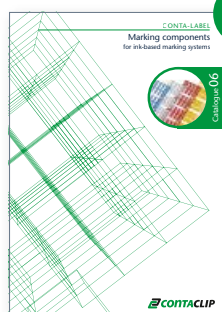
#### Marking components for thermal-transfer marking systems

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

Our catalogues are available in many languages!



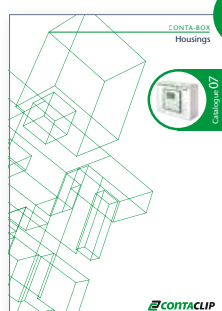
## 06 CONTA-LABEL

### 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



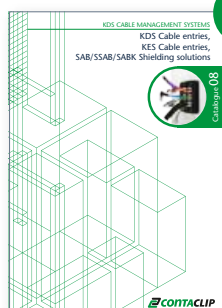
## 07 CONTA-BOX

### 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



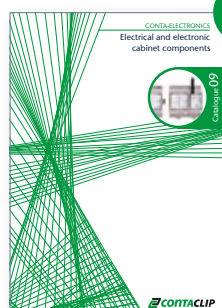
## 08 KDS CABLE MANAGEMENT SYSTEMS

### 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 shield-connection clips can be used to provide a reliable shield contact with conductor diameters from 3 mm to 35 mm.



Cat. no. 98077.2



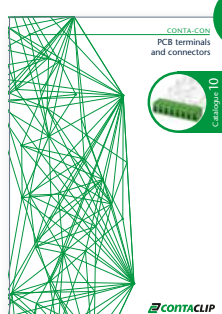
## 09 CONTA-ELECTRONICS

### 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.

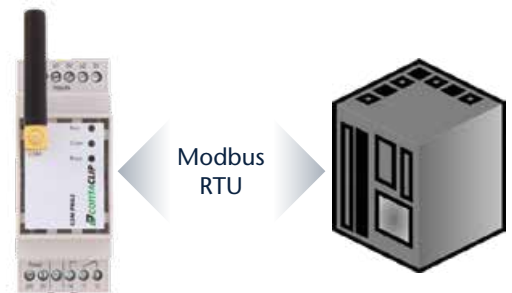
The **GSM-PRO2(E)** module informs you when the process reaches a user-defined status or limit value. Digital and analogue inputs values can also be transmitted via e-mail or SMS (text message). The digital relay outputs can be switched using an SMS sent from the decentralized control room or from the 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.

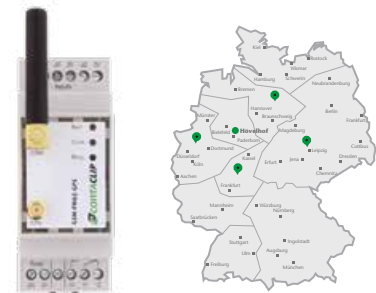
### OTA firmware updates

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

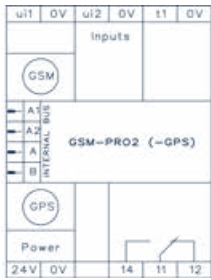
**CONTA-CLIP's** iPhone and Android smartphone apps for the **GSM-PRO2** modules provide a simple and fast solution so that you can get an overview of each distributed system and application. These apps can show you the status of all inputs and outputs from one or more **GSM-PRO2** modules. They also 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.).

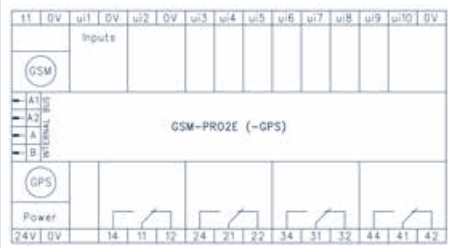



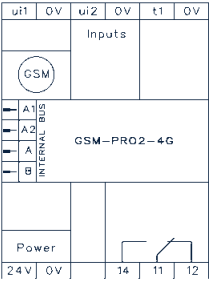
### Web Portal software

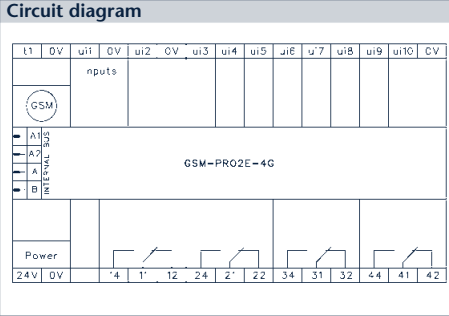

The **GSM-PRO2**, like most SMS modules, are often used as stand-alone units in the field. These modules are put to use at various remote locations even though they normally have configurations which are very similar. It is often quite helpful to have one overall view of the status of all modules used 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.


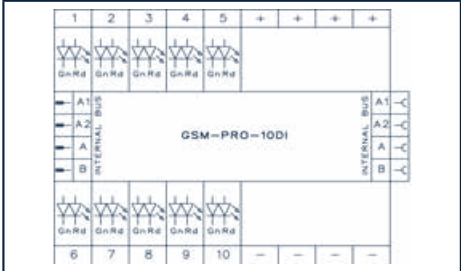

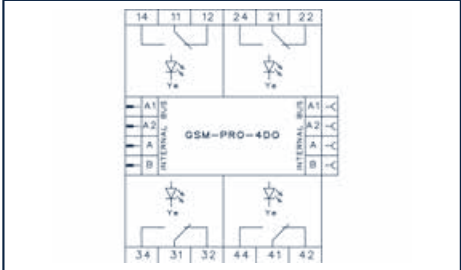





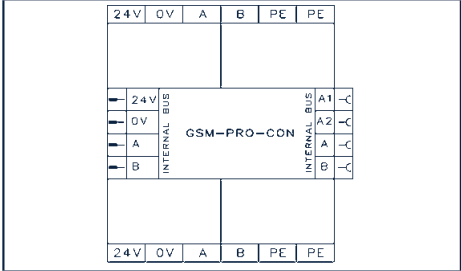


		GSM-PRO2	GSM-PRO2-GPS
<b>Circuit diagram</b>			
Dimensions (L x W x H) TS 35 / direct mount, mm		95 x 36 x 67 / 65 (without antenna)	95 x 36 x 67 / 65 (without antenna)
Weight, g		133	137
<b>Type</b>		<b>GSM-PRO2</b>	<b>GSM-PRO2-GPS</b>
<b>Cat. no.</b>	<b>Qty.</b>	16368.2	16369.2
<b>Input/output data</b>			
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 / $\pm$ (20 mV +0.3 % of the measured value) – 40 $\mu$ A / $\pm$ (40 $\mu$ A +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 <sup>5</sup> switching cycles. Mechanical: > 15 x 10 <sup>6</sup> switching cycles	
Max. switching frequency		6 min <sup>-1</sup> at continuous current, 1200 min <sup>-1</sup> without load	
Contact material / Test voltage		AgNi / 4 kV	
<b>GSM specifications</b>			
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	
<b>GPS specifications</b>			
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	
<b>Bus specifications</b>			
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)	
<b>General information</b>			
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 mm <sup>2</sup> 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	
<b>Accessories</b>			
<b>Antenna GSM</b>		<b>GSM-ANTENNA-90°</b>	
<b>Cat. no.</b>	<b>Qty.</b>	16379.2	1
<b>GPS antenna</b>		<b>GSM-ANTENNA-GPS-3M-K</b>	
<b>Cat. no.</b>	<b>Qty.</b>	16380.2	1
<b>External combi-antenna GSM + GPS</b>		<b>GSM-ANTENNA-EXTERNAL-GSM+GPS-SMA-3M</b>	
<b>Cat. no.</b>	<b>Qty.</b>	16381.2	1
<b>External GSM antenna</b>		<b>GSM-ANTENNA-EXTERNAL-SMA-3M</b>	
<b>Cat. no.</b>	<b>Qty.</b>	16061.2	1
<b>External GSM antenna</b>		<b>GSM-ANTENNA-EXTERNAL-SMA-5M</b>	
<b>Cat. no.</b>	<b>Qty.</b>	16172.2	1
<b>External GSM antenna</b>		<b>GSM-ANTENNA-EXTERNAL-SMA-10M</b>	
<b>Cat. no.</b>	<b>Qty.</b>	16173.2	1
<b>Programming cable</b>		<b>GSM-USB-MICRO-cable</b>	
<b>Cat. no.</b>	<b>Qty.</b>	16382.2	1

	GSM-PRO2E	GSM-PRO2E-GPS
<b>Circuit diagram</b>		
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
<b>Type</b>	<b>GSM-PRO2E</b>	<b>GSM-PRO2E-GPS</b>
Cat. no.	16407.2	16408.2
Qty.	1	1
<b>Input/output data</b>		
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 <sup>5</sup> switching cycles. Mechanical: > 15 x 10 <sup>6</sup> switching cycles	
Max. switching frequency	6 min <sup>-1</sup> at continuous current, 1200 min <sup>-1</sup> without load	
Contact material / Test voltage	AgNi / 4 kV	
<b>GSM specifications</b>		
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	
<b>GPS specifications</b>		
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
<b>Bus specifications</b>		
Interface ports	Serial RS485, uninsulated	
Voltage interface	24 V DC – 0.5 A	
Bus protocol	-	
Modbus slave functionality is available	No	
<b>General information</b>		
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 mm <sup>2</sup> 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	
<b>Accessories</b>		
<b>Antenna GSM</b>	<b>GSM-ANTENNA-90°</b>	
Cat. no.	16379.2	1
<b>GPS antenna</b>	<b>GSM-ANTENNA-GPS-3M-K</b>	
Cat. no.	16380.2	1
<b>External combi-antenna GSM + GPS</b>	<b>GSM-ANTENNA-EXTERNAL-GSM+GPS-SMA-3M</b>	
Cat. no.	16381.2	1
<b>External GSM antenna</b>	<b>GSM-ANTENNA-EXTERNAL-SMA-3M</b>	
Cat. no.	16061.2	1
<b>External GSM antenna</b>	<b>GSM-ANTENNA-EXTERNAL-SMA-5M</b>	
Cat. no.	16172.2	1
<b>External GSM antenna</b>	<b>GSM-ANTENNA-EXTERNAL-SMA-10M</b>	
Cat. no.	16173.2	1
<b>Programming cable</b>	<b>GSM-USB-MICRO-cable</b>	
Cat. no.	16382.2	1

	GSM-PRO2-4G-EU	GSM-PRO2-4G-US
<b>Circuit diagram</b>		
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
<b>Type</b>	<b>GSM-PRO2-4G-EU</b>	<b>GSM-PRO2-4G-US</b>
<b>Cat. no.</b>	<b>16454.2</b>	<b>16456.2</b>
<b>Qty.</b>	<b>1</b>	<b>1</b>
<b>Input/output data</b>	<b>2 multi-function (analogue/digital) inputs</b> 0 ... 10 V / 0(4) ... 20 mA / 24 V DC (10 ... 30 V DC) Resolution/accuracy (0 ... 10 V) (0 ... 20 mA) 20 mV / $\pm$ (20 mV +0.3 % of the measured value) – 40 $\mu$ A / $\pm$ (40 $\mu$ A +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 <b>Counter, digital input (pull-down)</b> 1000 pulses/sec. Max. pull-down resistance: 24 kOhm <b>Pull-down voltage source</b> Typ. 10 ... 30 V DC, unregulated, depending on load <b>Relay output</b> CO universal contact, 250 V ~ 5 A / 5 A 1200 VA at 240 V AC, 5 A Lifespan at resistive load Electrical, at max. load: > 1.5 x 10 <sup>5</sup> switching cycles. Mechanical: > 15 x 10 <sup>6</sup> switching cycles Max. switching frequency 6 min <sup>-1</sup> at continuous current, 1200 min <sup>-1</sup> without load Contact material / Test voltage AgNi / 4 kV	
<b>GSM specifications</b>	<b>Frequency bands</b> 2G - GSM/GPRS/EDGE: dual band 900/1800 MHz 3G - UMTS/HSPA+: dual band 900 (BdVIII)/ 2100 MHz (BdI) 4G - LTE CAT1: Penta band 700 (Bd28)/ 800 (Bd20)/900 (Bd8)/1800 (Bd3)/2100 MHz (Bd1) Nano SIM 50 Ohm impedance, SMA plug	
SIM card		
Antenna		
<b>Bus specifications</b>	<b>Interface ports</b> Serial RS485, uninsulated <b>Voltage interface</b> 24 V DC – 0.5 A <b>Bus protocol</b> Modbus RTU <b>Modbus slave functionality is available</b> Yes (no other expansion modules can be connected)	
<b>General information</b>	<b>Voltage supply</b> 10 to 30 V DC <b>Current consumption</b> 275 mA DC @ 24 V DC <b>Backup power</b> Internal maintenance-free supercap capacitor <b>Operating / storage temperature</b> -20 °C to +50 °C / -20 °C to +70 °C <b>Max. relative humidity</b> 80 %, non-condensing <b>DIN VDE specifications</b> Low Voltage Directive (LVD) 2014/35/EU, in compliance with EN 50178 <b>Electromagnetic properties</b> Directive 2014/30/EU, in compliance with EN 55011 and EN 61326-1 <b>Frequency spectrum</b> RED 2014/53/EU CFR Title 47 parts 22 and 24	
Wire cross-section / Stripping length	0.2 ... 2.5 mm <sup>2</sup> 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	
<b>Accessories</b>		
<b>Antenna GSM</b>	<b>GSM-ANTENNA-4G</b>	
<b>Cat. no.</b>	<b>16450.2</b>	<b>1</b>
<b>Qty.</b>		
<b>External GSM antenna</b>	<b>GSM-ANTENNA-EXTERNAL-4G-3M</b>	
<b>Cat. no.</b>	<b>16451.2</b>	<b>1</b>
<b>Qty.</b>		
<b>External GSM antenna</b>	<b>GSM-ANTENNA-EXTERNAL-4G-5M</b>	
<b>Cat. no.</b>	<b>16452.2</b>	<b>1</b>
<b>Qty.</b>		
<b>Programming cable</b>	<b>GSM-USB-MICRO-cable</b>	
<b>Cat. no.</b>	<b>16382.2</b>	<b>1</b>
<b>Qty.</b>		

Circuit diagram			GSM-PRO2E-4G-EU	GSM-PRO2E-4G-US
				
Dimensions (L x W x H) TS 35 / direct mount, mm			95 x 88 x 67 / 65 (without antenna)	
Weight, g			188	
<b>Type</b>			<b>GSM-PRO2E-4G-EU</b>	<b>GSM-PRO2E-4G-US</b>
Cat. no.			16455.2	16457.2
Qty.			1	1
<b>Input/output data</b>				
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 <sup>5</sup> switching cycles. Mechanical: > 15 x 10 <sup>6</sup> switching cycles	
Max. switching frequency			6 min <sup>-1</sup> at continuous current, 1200 min <sup>-1</sup> without load	
Contact material / Test voltage			AgNi / 4 kV	
<b>GSM specifications</b>				
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	
<b>Bus specifications</b>				
Interface ports			Serial RS485, uninsulated	
Voltage interface			24 V DC – 0.5 A	
Bus protocol			-	
Modbus slave functionality is available			No	
<b>General information</b>				
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 mm <sup>2</sup> 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	
<b>Accessories</b>				
<b>Antenna GSM</b>			<b>GSM-ANTENNA-4G</b>	
Cat. no.			16450.2	1
<b>External GSM antenna</b>			<b>GSM-ANTENNA-EXTERNAL-4G-3M</b>	
Cat. no.			16451.2	1
<b>External GSM antenna</b>			<b>GSM-ANTENNA-EXTERNAL-4G-5M</b>	
Cat. no.			16452.2	1
<b>Programming cable</b>			<b>GSM-USB-MICRO-cable</b>	
Cat. no.			16382.2	1

Digital input module		GSM-PRO-10DI	Circuit diagram
<ul style="list-style-type: none"><li>• 10 digital inputs, 24V</li><li>• One LED display per input</li></ul>			
Type		GSM-PRO-10DI	
Cat. no.	Qty.	16375.2	1
Digital output module		GSM-PRO-4DO	Circuit diagram
<ul style="list-style-type: none"><li>• 4 relay outputs, one CO contact each</li><li>• Max. continuous current per relay: 16 A (contact materials for high inrush currents)</li><li>• One yellow LED status display per channel</li></ul>			
Type		GSM-PRO-4DO	GSM-4DO-12 V DC
Cat. no.	Qty.	16378.2	16444.2 1
Analogue input module		GSM-PRO-8AI	Circuit diagram
<ul style="list-style-type: none"><li>• 8 multi-function analogue inputs: 0 ... 10 V, 0(4) ... 20 mA, NTC, RTD (PT1000 / NI1000) -40 ... +120 °C</li><li>• Custom configuration for each input</li></ul>			
Type		GSM-PRO-8AI	
Cat. no.	Qty.	16377.2	1
Analogue output module		GSM-PRO-4AO	Circuit diagram
<ul style="list-style-type: none"><li>• 4 analogue outputs, 0 ... 10 V</li></ul>			
Type		GSM-PRO-4AO	
Cat. no.	Qty.	16376.2	1
Connection module		GSM-PRO-CON	Circuit diagram
<ul style="list-style-type: none"><li>• Modbus connection module for connecting external Modbus devices</li><li>• 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).</li></ul>			
Type		GSM-PRO-CON	
Cat. no.	Qty.	16458.2	1

# Technical documentation

		GSM-PRO-10DI	GSM-PRO-4DO	GSM-PRO-4DO 12 V DC	GSM-PRO-8AI	GSM-PRO-4AO	GSM-PRO-CON
<b>Multi-function analogue inputs</b>	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				•		
<b>Digital input</b>	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)	•					
<b>Analogue output</b>	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					•	
<b>Relay output</b>			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 <sup>5</sup> / 7 x 10 <sup>5</sup> switching operations @ 23 °C and resistive load	•	•				
Mechanical lifespan	30 x 10 <sup>5</sup> switching operations	•	•				
Max. switching frequency	6 min <sup>-1</sup> at continuous current, 1200 min <sup>-1</sup> without load	•	•				
Contact material	AgSnO2	•	•				
Test voltage coil - contact	5 kV	•	•				
LED status display	Yellow	•	•	•			
<b>Bus specifications</b>							
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	•	•	•	•	•	•
<b>General information</b>							
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 mm <sup>2</sup> 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

# 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	16061.2
General information		1	1
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) 2.0 dBi (1710 ... 1990 MHz) 2.5 dBi (1920 ... 2170 MHz)	1 dBi
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
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	16173.2
General information		1	1
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

## GPS / GSM antenna

## GSM-ANTENNA-GPS-3M-K

## GSM-ANTENNA-EXTERNAL-GSM+GPS



Weight, g	53	158
<b>Type</b>	<b>GSM-ANTENNA-GPS-3M-K</b>	<b>GSM-ANTENNA-EXTERNAL-GSM+GPS-SMA-3M</b>
<i>Cat. no.</i>	<i>16380.2</i>	<i>16381.2</i>
<b>Qty.</b>	<b>1</b>	<b>1</b>
<b>General information</b>		
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-PRO Antenna 4G / LTE

## GSM antenna

## GSM-ANTENNA-4G



Weight, g	9
<b>Type</b>	<b>GSM-ANTENNA-4G</b>
<i>Cat. no.</i>	<i>16450.2</i>
<b>Qty.</b>	<b>1</b>
<b>General information</b>	
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



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

## GSM-ANTENNA-EXTERNAL-4G-5M



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

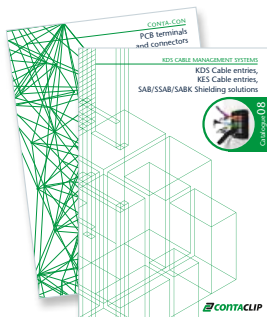
# Notes



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