CONTA-ELECTRONICS

Product Information

The perfect communicator

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

CONTACLIP

Contents

CONTA-CLIP:
Because progress needs an impulse

Since 1978, CONTA-CLIP has stood for electrical and electronic connection technology and for cable management systems: For over 40 years, our components and solutions have been used in 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.

As an owner-operated medium-sized company, CONTA-CLIP is today one of the most important manufacturers in this sector - an innovator with global market and industry expertise.

Based on communication among equals, our employees develop solutions for your specific requirements and industry, and we have also designed our range of services to align with customer needs. This results in first-class products where quality has the highest priority.

We design customer-specific solutions for electronics, provide completely assembled housings and assemblies as needed, assemble terminal block assemblies for series production, take over the labelling of components - and all of this in the shortest possible time.

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

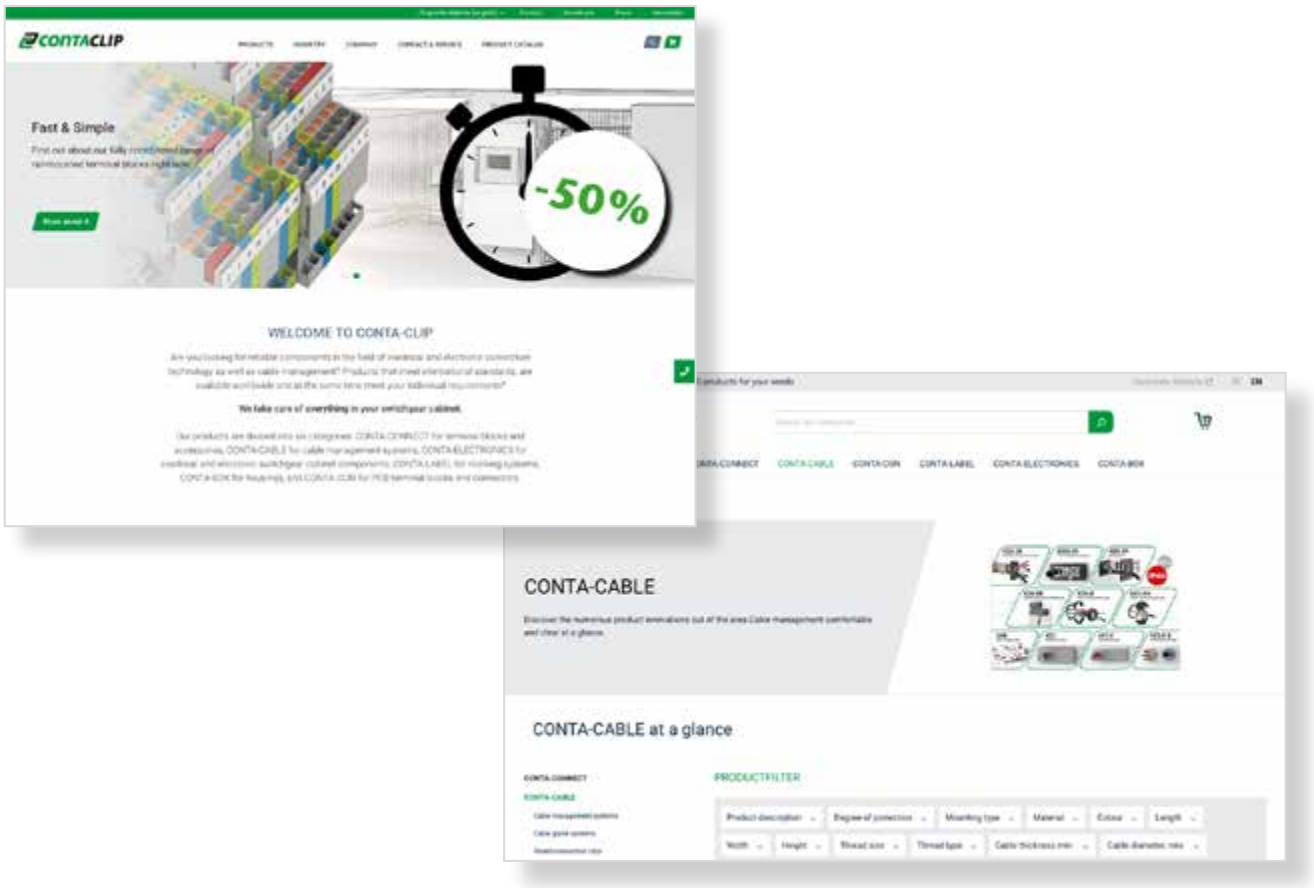
And last but not least, your personal CONTA-CLIP contact persons are always available to answer any questions you may have: we look forward to getting in touch with you.

Digitally on the move:
The online catalogue is there

Find the right product using the search function, the order number or the "step-by-step-search" search feature. After selecting a product, all product master data, i.e. commercial data, technical data, drawings, connection diagrams, classifications and approvals are available to you as a data sheet or export file. You can send detailed inquiries about components via the shopping cart directly to our headquarters. Complex functionalities are explained clearly in our application films.

Would you prefer to get information offline? You can request all our catalogues in print form here free of charge.

Always stay up-to-date with our newsletter: Simply register and you will be informed about all CONTA-CLIP news.



Active worldwide: Here we are present

CONTA-CLIP stands for the best connection technology and reliable products - worldwide. Our worldwide sales and distribution partners help us to be globally networked and provide on-time reliable deliveries.
Are you working abroad? You can find the sales partner responsible for your country via our website.

Our locations in Africa
- Algeria
- Morocco
- South Africa

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

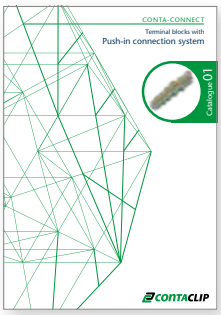
Our locations in Oceania
- Australia
- New Zealand

Our locations in Europe
- Austria
- Belgium
- Bulgaria
- Croatia
- Czech Republic
- Denmark
- Finland
- France
- Germany
- Great Britain
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Latvia
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Serbia
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- Ukraine

Our locations in North America
- Canada
- Mexico
- United States

Our locations in South America
- Bolivia
- Brazil
- Chile
- Columbia
- Ecuador

Our catalogue system



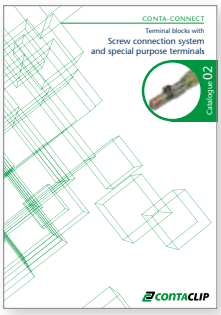
01

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



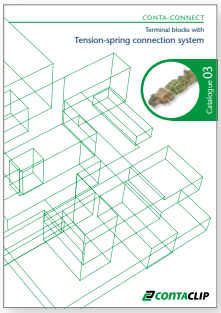
02

CONTA-CONNECT

Terminal blocks with Screw connection system and special purpose terminals

Everything for classic wiring with screw connection system, also for high currents: SRK feed-through and PE terminals, RK high-temperature variants, TK transformer terminals, HSK high-power stud terminals and the SVB series screw distributor blocks.

Cat. no. 98071.2



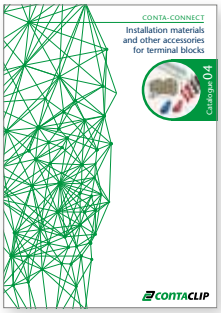
03

CONTA-CONNECT

Terminal blocks with Tension-spring connection system

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



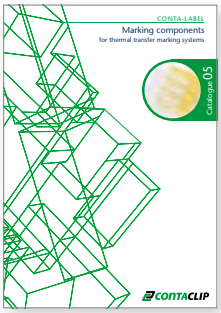
04

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 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

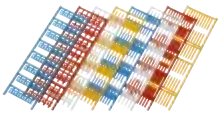
CONTA-LABEL

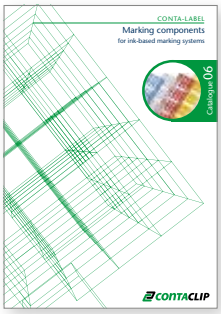
Marking components for thermal-transfer marking systems

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 electrical cabinets.

Cat. no. 98074.2

Our catalogues are available in many languages!



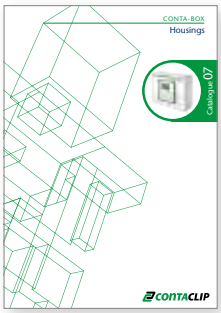


06 CONTA-LABEL

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 Maxi-Card format for self-printing with the EMS plotter system EMS or other ink-jet systems, or ready-to-use customised printed in the PMC Pocket-Maxi-Card format.

Cat. no. 98075.2

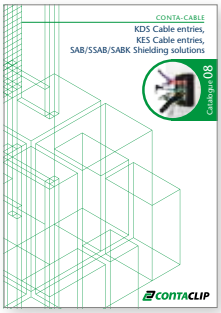


07 CONTA-BOX

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, these housings can be custom-processed and assembled with our CONTA-CONNECT, CONTA-ELECTRONICS and CONTA-CON products.

Cat. no. 98076.2

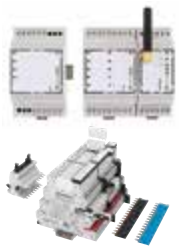


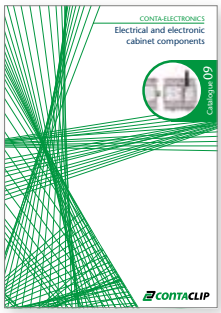
08 CONTA-CABLE

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 wire diameters from 3 mm to 35 mm.

Cat. no. 98077.2



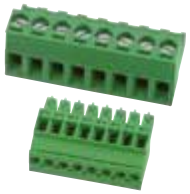


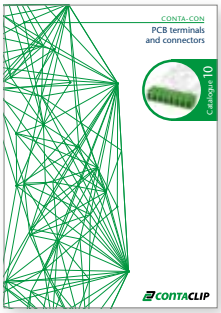
09 CONTA-ELECTRONICS

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

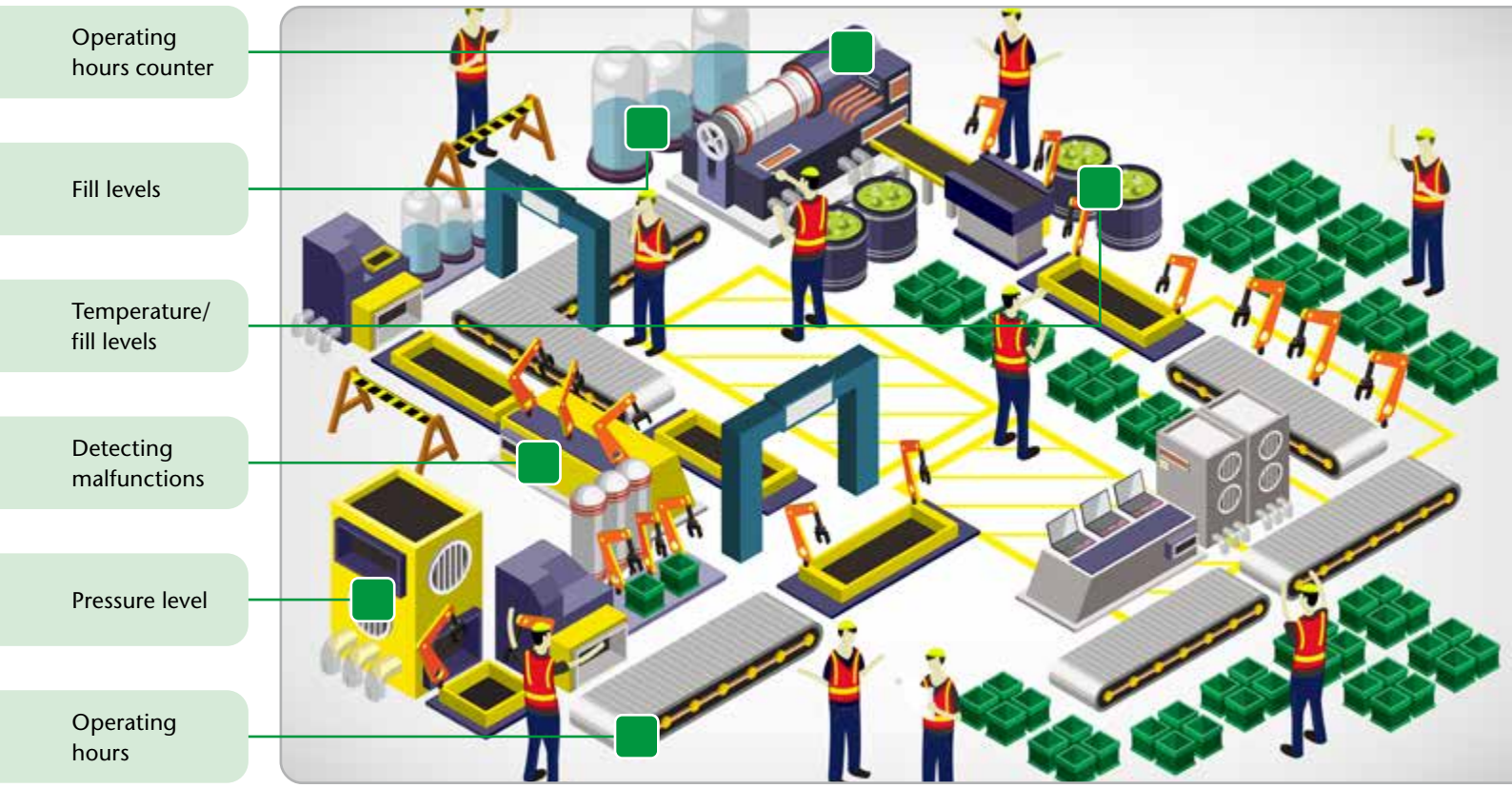
PCB terminals and connectors

This catalogue presents CONTA-CON's wide range of PCB terminals and plug-in connector systems, as well as the modular feed-through terminal systems of the SDK series. 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 - Real-time process control and monitoring

With the GSM-PRO2 module and the corresponding GSM-PRO2 app, users can easily receive notifications (SMS messages, e-mails or calls) concerning their processes. The status of the outputs of the GSM-PRO2 modules can be activated with an SMS or a call in order to control the process. The new IoT-Portal CONTA-SUPERVISION or the SUPERVISION app can also be used to monitor the GSM-PRO2 modules in real time. They can send commands to the connected modules directly via the internet to switch the outputs.



The GSM-PRO2 modules enable you to minimise downtime in your facility by sending you early notifications when a sudden malfunction occurs in a certain section.
For example, if a machine in a production facility experiences excessive friction between components, a rise in oil temperature may be a warning signal that preventive maintenance is required.
Minor increases, while often non-critical, can be an early indicator of underlying problems that need to be monitored.
Here, the GSM-PRO2 module can support you perfectly with its monitoring function and two configurable threshold values. The module can, for example, send a pre-warning and a priority message to maintenance personnel.

The IoT-Portal CONTA-SUPERVISION can display the fault to the technician directly at the control panel, even when it is a decentralised facility. The module can also send an SMS message, an e-mail or a telephone call directly to the maintenance staff if the control panel is not manned. This can prevent major damage and help to minimise facility downtime. The GSM-PRO2 module can also send an SMS fault notification sequentially to several users. The sequence is then stopped when an SMS response is received by the module or when the set number of repetitions has been reached.

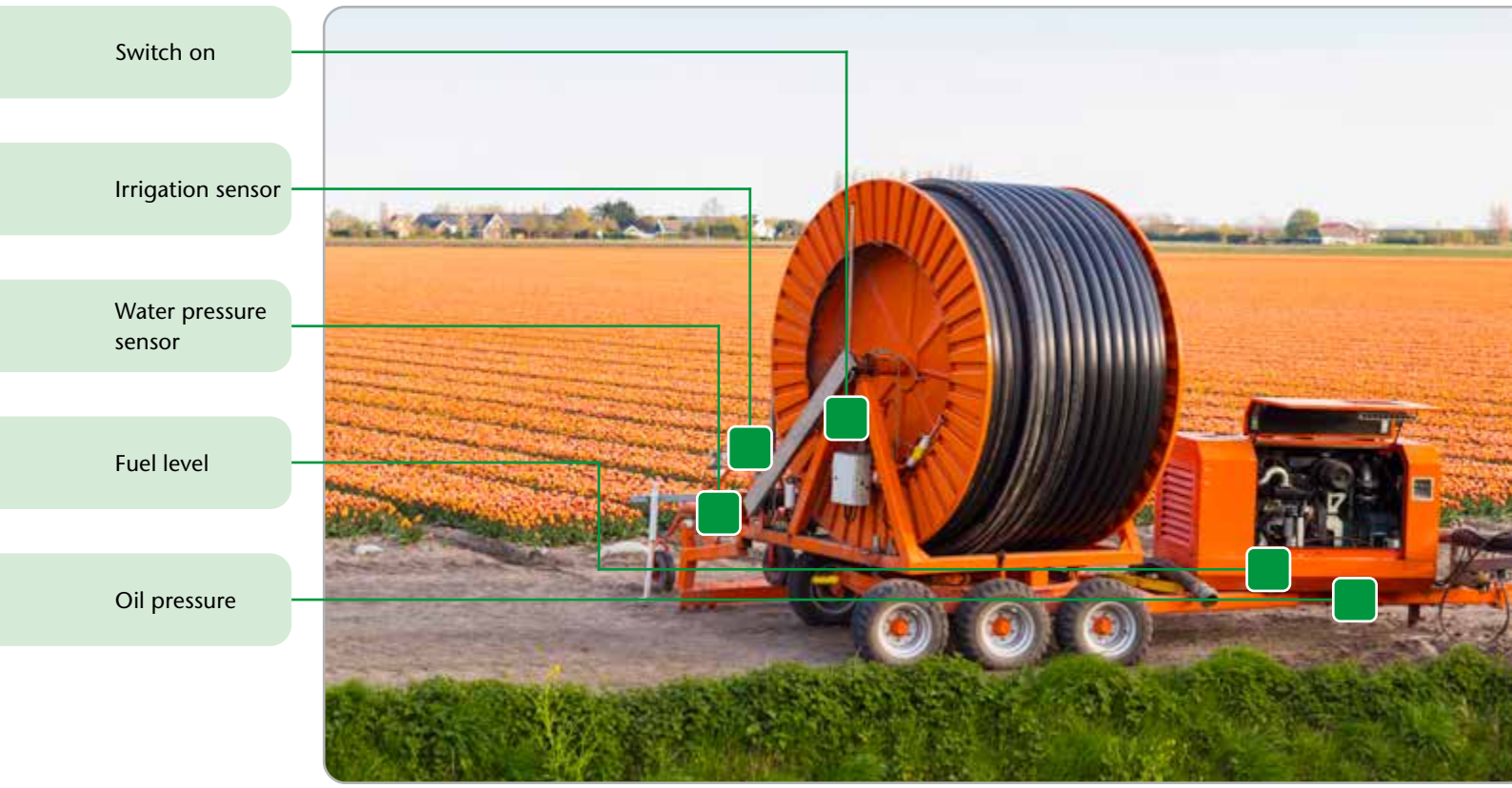
In a worst-case emergency scenario, the machine or facility can also be shut down remotely, provided that the appropriate safety measures are in place. By using the IoT-Portal CONTA-SUPERVISION or app to control the outputs of a GSM-PRO2 module, maintenance personnel can have complete control over the status and shut down the machine at all times.

By default, the IoT-Portal CONTA-SUPERVISION has input tracking and event logging enabled.
As in the previous example, a technician can follow the entire situation on their laptop using the IoT-Portal CONTA-SUPERVISION.

In the portal's event log, the technician gets a complete overview of all actions that have been carried out. They can also view all events transmitted to the module.

Thus, the process can always be monitored in real time and controlled easily and remotely.

Automatic, intelligent irrigation systems are just one of the many applications in which the GSM-PRO2 module excels.
Its versatility as well as the monitoring/control functionality are the keys to successful integration into these applications.



Most modern farmers have multiple irrigated zones with large sprinkler systems. By using the IoT-Portal CONTA-SUPERVISION and the smartphone app, these systems can be managed and controlled remotely.
Not only can the entire irrigation system be monitored, but also the individual irrigation station can be directly controlled.
The individual systems must be checked before the irrigation station switches on irrigation in the field. The facility can only function properly when there is water supply pressure and fuel and oil pressure in the pump.
These parameters can be displayed and checked with the GSM-PRO2 module in the app. The irrigation can then be started remotely by switching on the output relay in the GSM-PRO2 module via the portal or the app. If a fault occurs during operations (e.g. the pressure in the water supply to the system drops), a shutdown command can be sent to the irrigation station via the portal. The farmer can also be informed of the fault directly on their mobile device from the GSM-PRO2 module so that the problem can be rectified.
In such cases, the GSM-PRO2 module can also send an SMS notification about the fault sequentially to multiple users. The sequence is then stopped when an SMS response is received by the module or when the set number of repetitions has been reached. Beyond this mere fault reporting functionality, the modules can help farmers increase the efficiency of their entire irrigation system.

The normal function of the irrigation system is that the sprinkler cart automatically retracts at the end of the field, rewinding the water lines back into the hose reel. Then, the irrigation station is moved to a new location or to the next field.

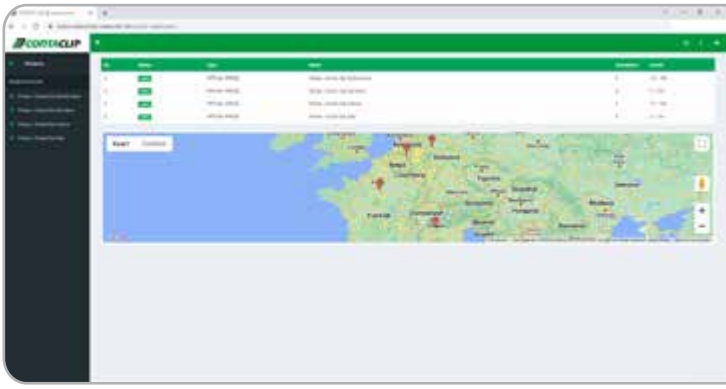
If there is no communication system (e.g. no GSM-PRO2), the farmer does not receive any notification when the irrigation of the field is completed, which means that the entire facility cannot be used efficiently.

By adding a GSM-PRO2 module, the irrigation station can send an automatic notification by SMS or e-mail, or even inform the farmer with a phone call, so that the station can be moved to a new location and resume operations as quickly as possible.

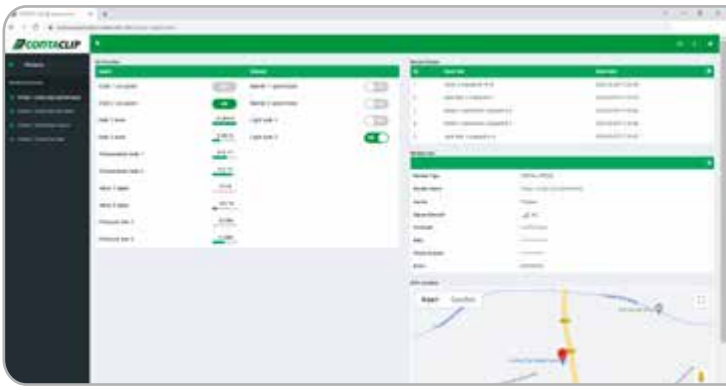
IoT-Portal CONTA-SUPERVISON: How to manage the **GSM-PRO2** module

Choose modern devices

With the IoT-Portal CONTA-SUPERVISION it's possible to manage all the GSM-PRO2's monitoring and control functions in real-time. Monitor all your inputs and receive notifications if thresholds values are exceeded. Easily operate the relays outputs of a GSM-PRO2 module to trigger an activity.
The IoT-Portal CONTA-SUPERVISION can be used in your web browser or via an app on your IOS or android device. The apps can be downloaded in the respective App store from a mobile device.



When you open the IoT-Portal CONTA-SUPERVISION on the top left corner, one will see all the GSM-PRO2 modules which are connected to the dashboard. Indication of whether the modules are connected or not, will also be present. Should a location be entered into the module, then likewise it will also be shown on the map underneath as well. The GSM-PRO2 module will be displayed with the given name for easy recognition. In the case a notification has been missed, than you will see an envelope symbol in front of the GSM-PRO2 module indicating that there is an unseen message awaiting.



By clicking and selecting any of the GSM-PRO2 modules, you can expect to see all details of that certain module as shown in the upper image. For example, on the left side of the dashboard you will see all inputs or outputs. Here as well all the given names which are addressed in the setup software are shown at the in- and outputs. If the input or output are analogue, then the actual value and unit of measure will be displayed. For quick and easy recognition, for every output the corresponding name is displayed at each output. A slider button shows the status and with a simple slide to the left or right it's possible to switch the output on or off.

For a quick glance, on the top right corner an event list is shown, which displays the latest five notifications. However, with a simple click on the icon a list of the latest 100 events will be shown. If needed, the list can be downloaded.

Underneath the event list you see all information related to the main module like the module type and given name for clear recognition. Also the provider and signal strength is shown here, together with the firmware version, IMEI and phone number. If a module has malfunctioned, this in turn is indicated with error numbers. Just hover over the error code and the explanation will be shown.

At the top right corner of the dashboard, you can click on a dropdown menu in order to change the module settings, for example resetting and updating with the latest firmware over the air. As well, you will find a request to download the modules configuration or upload a new configuration to the module. Nevertheless, changes In the configuration are done in the setup software.

The right module is located at our French office and the coordinates are configured in the module and therefore the modules location will be shown on the map. This module has additionally some extension modules. Now one digital output and one analogue modules are connected to the main module. Each given name is shown for easy recognition and the same counts for the different outputs.

Especially for devices with a smaller touch screen, there is an option to enlarger a certain output for ease of operation. In example of the analogue output, you can move the slider to the desired output voltage.

Your advantages

- **Real-time process management**
- **Manage multiple GSM-PRO2 in one dashboard**
- **Structured overview of your module as well as in- and outputs**
- **Notifications**
- **Actual state of the module**

Features

IoT-Portal CONTA-SUPERVISION

IoT-Portal CONTA-SUPERVISION is available as web-based and app to manage multiple GSM-PRO2 modules in real-time. IoT-Portal CONTA-SUPERVISION is the platform to manage a diversity of processes – from simple to complex, central versus decentral processes. With CONTA-SUPERVISION you can monitor sensors and control actuators remotely in any place, independent from the current/internal IT infrastructure.

GET IT ON Google Play

Download on the App Store

GSM-PRO2 App

The GSM-PRO2 App is still available. The GSM-PRO2 App doesn't refresh real-time, but updates each time a threshold value is exceeded. 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.).

Use any provider

Bring your process to life without depending on the local IT infrastructure. The GSM-PRO2 uses 4G, 3G and 2G frequency bands from almost all providers with subscription of pre-paid SIM card. Just put the nano SIM card in the GSM-PRO2 module and configure via the setup software.

Extension modules

The GSM-PRO2 modules also allow you to increase the number of available inputs and outputs. Up to 15 I/O extension 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 extension modules can also be configured using an easy-to-understand application.

Universals inputs

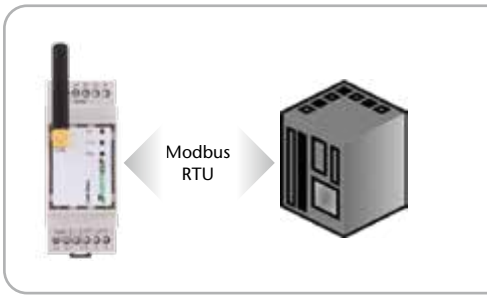
The GSM-PRO2 has free configurable universal inputs which can function as digital or analogue modes. If the input is set in digital mode, then the module sends notifications on flank changes. In analogue mode the module sends notifications as soon as the upper and lower threshold values are exceeded and when the input goes back to normal.

Relay output

The GSM-PRO2 has change-over-contacts which can be used as potential free contact or loaded up to 5A/230V AC per output. The output can be controlled via the IoT-Portal CONTA-SUPERVISON, GSM-PRO2 App, SMS command or by a phone call. The output can be switched on/off or as a pulse output.

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).



OTA (over-the-air)

Capabilities

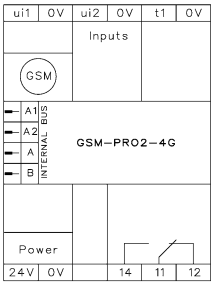
In many systems or machines, some parameters or user entries may need to be changed after the installation is completed. In such cases you may also need to change parameters on the GSM-PRO2 module. The GSM-PRO2 module features OTA (over-the-air) functions for just such cases.

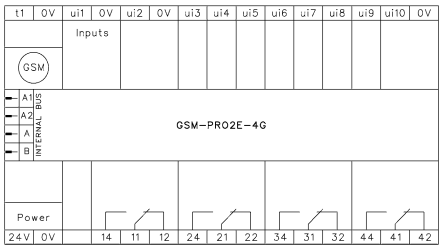
Configuration

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.

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-PRO2-4G-EU	GSM-PRO2-4G-US
Circuit diagram		 
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	**GSM-PRO2-4G-EU**	**GSM-PRO2-4G-US**
Cat. no. **Qty.**	*16454.2* **1**	*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 Extension modules can be connected)	
General information		
Voltage supply	10 – 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 mm^2 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**	
External GSM antenna	**GSM-ANTENNA-EXTERNAL-4G-10M**	
Cat. no. **Qty.**	*16453.2* **1**	
External GSM antenna	**GSM-ANTENNA-EXTERNAL-4G-20M**	
Cat. no. **Qty.**	*16499.2* **1**	
Extension GSM antenna	**GSM-ANTENNA-EXTENSION-4G-10M**	
Cat. no. **Qty.**	*16494.2* **1**	
Programming cable	**GSM-USB-MICRO-cable**	
Cat. no. **Qty.**	*16382.2* **1**	

	GSM-PRO2E-4G-EU	GSM-PRO2E-4G-US
Circuit diagram		
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	**GSM-PRO2E-4G-EU**	**GSM-PRO2E-4G-US**
Cat. no. **Qty.**	*16455.2* **1**	*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 – 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^2 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**	
External GSM antenna	**GSM-ANTENNA-EXTERNAL-4G-10M**	
Cat. no. **Qty.**	*16453.2* **1**	
External GSM antenna	**GSM-ANTENNA-EXTERNAL-4G-20M**	
Cat. no. **Qty.**	*16499.2* **1**	
Extension GSM antenna	**GSM-ANTENNA-EXTENSION-4G-10M**	
Cat. no. **Qty.**	*16494.2* **1**	
Programming cable	**GSM-USB-MICRO-cable**	
Cat. no. **Qty.**	*16382.2* **1**	

Digital input module

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

GSM-PRO-10DI

Circuit diagram

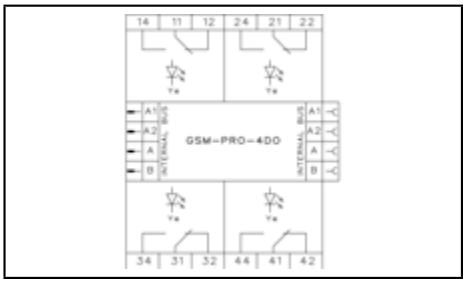
Type	GSM-PRO-10DI	
Cat. no.	*16375.2*	**Qty.** 1

Digital output module

- 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

GSM-PRO-4DO

Circuit diagram



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

Analogue input module

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

GSM-PRO-8AI

Circuit diagram

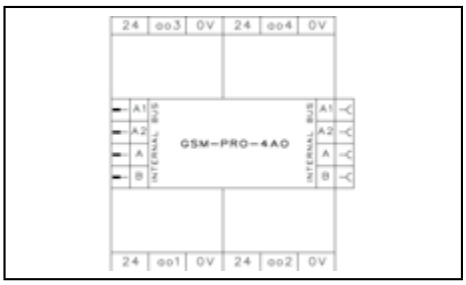
Type	GSM-PRO-8AI	
Cat. no.	*16377.2*	**Qty.** 1

Analogue output module

- 4 analogue outputs, 0 – 10 V

GSM-PRO-4AO

Circuit diagram



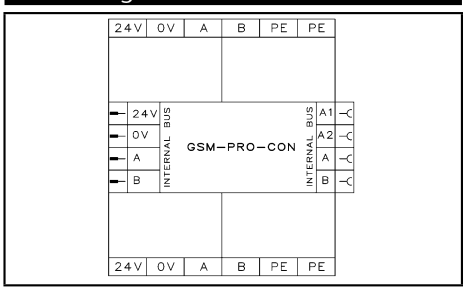
Type	GSM-PRO-4AO	
Cat. no.	*16376.2*	**Qty.** 1

Connection module

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

GSM-PRO-CON

Circuit diagram



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

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 to +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 plug: 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)	95 x . . . 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-PRO2-4G Accessories

GSM antenna

	GSM-ANTENNA-4G	GSM-ANTENNA-EXTERNAL-4G-…M
		
Type	**GSM-ANTENNA-4G**	**GSM-ANTENNA-EXTERNAL-4G-3M**
Cat. no. **Qty.**	*16450.2* **1**	*16451.2* **1**
Cable length		3 meters
Weight, g	9	122
Type		**GSM-ANTENNA-EXTERNAL-4G-5M**
Cat. no. **Qty.**		*16452.2* **1**
Cable length		5 meters
Weight, g		198
Type		**GSM-ANTENNA-EXTERNAL-4G-10M**
Cat. no. **Qty.**		*16453.2* **1**
Cable length		10 meters
Weight, g		457
General information		
Frequency GSM	800, 850, 900 – 1700, 1800, 1900, 2100 – 2600 MHz	689 – 960/1710 – 2690 MHz
Max. gain	0.1 dBi (689 – 960 MHz)	2.5 dBi
	2.9 dBi (1710 – 2170 MHz)	
	4.6 dBi (2500 – 2700 MHz)	
Impedance	50 Ohm	50 Ohm
Wire connect type	SMA male	SMA male
Bore hole		13 mm
Antenna diameter	10 mm	81.3 mm
Antenna height	49 mm	14.6 mm
Total height	71 mm	29.6 mm
Temperature range	-20 °C to +65 °C	-40 °C to +85 °C
Material of antenna housing	POM	ABS
Mounting type	Screw	Screw
Antenna shape	Stubby	Puck

	GSM-ANTENNA-EXTERNAL-4G-20M	GSM-ANTENNA-EXTENSION-4G-10M
		
Type	**GSM-ANTENNA-EXTERNAL-4G-20M**	**GSM-ANTENNA-EXTENSION-4G-10M**
Cat. no. **Qty.**	*16499.2* **1**	*16494.2* **1**
Cable length	20 meters	10 meters
Weight, g	940	423.1
General information		
Frequency GSM	800, 868, 900, 1800, 2100, 2600 MHz	
Impedance	50 Ohm	50 Ohm
Wire connect type	SMA-Male	SMA-Male-Female
Antenna diameter	32 mm	
Total height	283 mm	
Temperature range	-35 °C to +80 °C	
Mounting type	Screw/wall	
Antenna shape	Rod	

GSM-USB-MICRO-cable

Type	**GSM-USB-MICRO-cable**
Cat. no. **Qty.**	*16382.2* **1**
Cable length	1.5 meters
Weight, g	24
General information	
Plug-in connector	USB A | Micro USB

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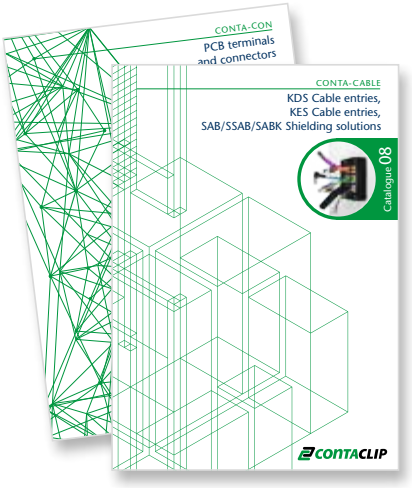

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