according to GB standard	

further information / internet-Links

Internet-Link	
• to web page: selection aid TIA Selection Tool	http://www.siemens.com/tia-selection-tool
• to website: Industrial communication	http://www.siemens.com/simatic-net
• to website: Industry Mall	https://mall.industry.siemens.com
• to website: Information and Download Center	http://www.siemens.com/industry/infocenter
• to website: Image database	http://automation.siemens.com/bilddb
• to website: CAx-Download-Manager	http://www.siemens.com/cax
• to website: Industry Online Support	https://support.industry.siemens.com

security information

security information	Siemens provides products and solutions with industrial security functions that support the secure operation of plants, solutions, machines, equipment and/or networks. They are important components in a holistic industrial security concept. With this in mind, Siemens' products and solutions undergo continuous development. Siemens recommends strongly that you regularly check for product updates. For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action(e.g. cell protection concept) and integrate each component into a holistic, state-of-the-art industrial security concept. Third-party products that may be in use should also be considered. For more information about industrial security, visit http://www.siemens.com/industrialsecurity. To stay informed about product updates as they occur, sign up for a product-specific newsletter. For more information, visit http://support.automation.siemens.com. (V3.4)

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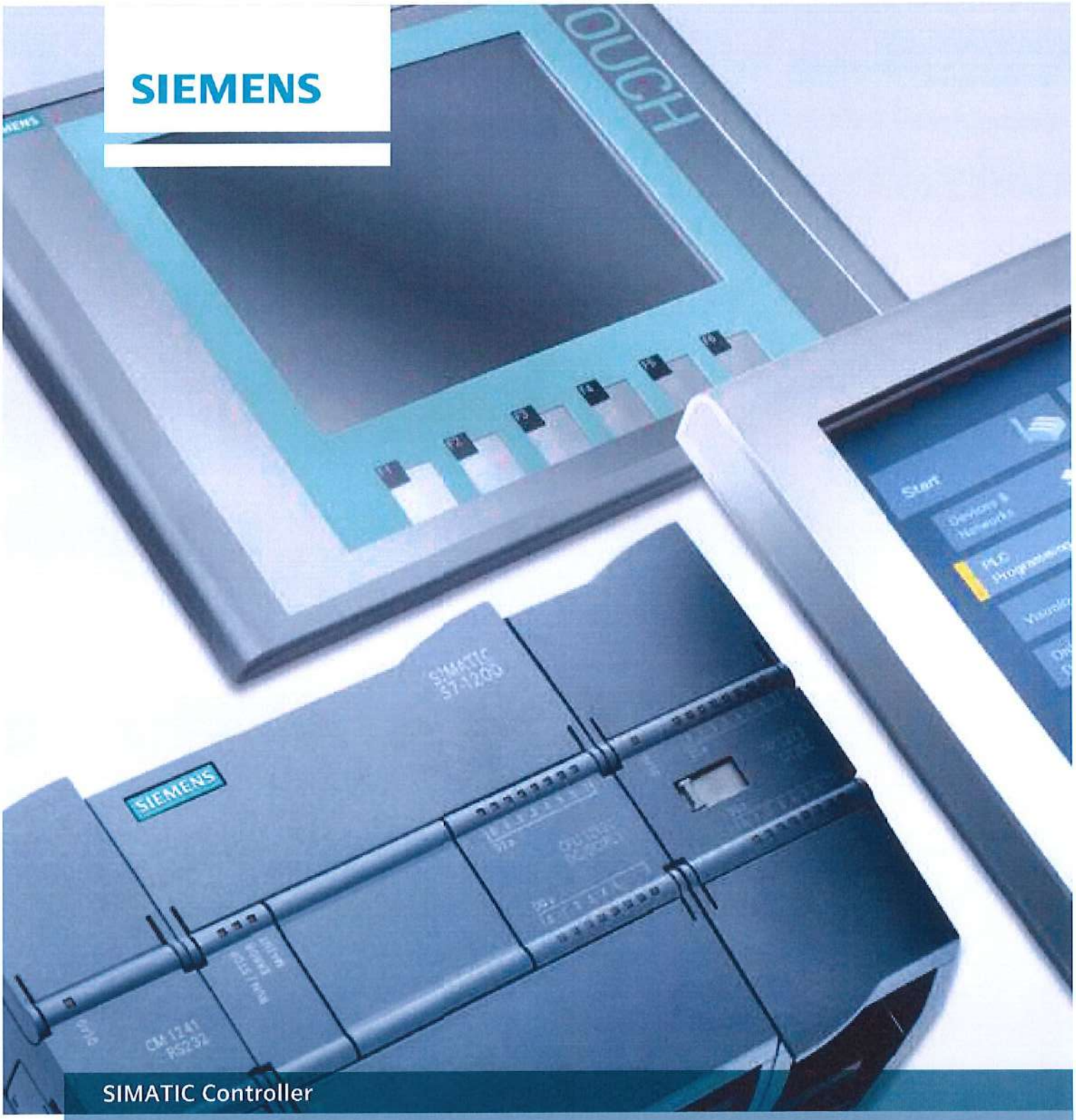


SIMATIC Controller

SIMATIC S7-1200

It's the interplay that makes the difference

siemens.com/simatic-s7-1200

Modular. Powerful. Easy to use.

It's the common interfaces, communication, and one easy-to-use integrated engineering system for both the controller and HMI that makes the difference. The interplay between the new SIMATIC S7-1200 controller, our seamless range of SIMATIC HMI Basic Panels and the highly integrated SIMATIC STEP 7 Basic engineering system provides a unique integrated automation solution specifically for the compact controller class.

It's the Interplay
The new modular SIMATIC S7-1200 controller is at the core of our new offering for simple but highly precise automation tasks. The optimized performance of our SIMATIC HMI Basic Panels, designed for seamless compatibility with this new controller and the powerfully integrated engineering system, ensures simplified development, fast start-up, precise monitoring and the highest level of usability. It's the interplay between these products and their innovative features that give you an unprecedented level of efficiency for small automation systems.

The Controller
The SIMATIC S7-1200 controller is modular and compact, versatile, a secure investment, and is perfectly fit for a full range of applications. It comes in a scalable and flexible design and enables communication that fulfills the highest, most demanding requirements in the industry. A full range of powerful and integrated technology makes this controller an integral part of a comprehensive automation solution.

In the field of automation, powerful components are a key factor to success. But what really gives you a unique advantage, is all of them working together.

The Panels
The operation of small machines or simple applications can often be further improved with the addition of visualization. With the SIMATIC HMI Basic Panels offering essential functionality, this is an economical option that opens up new possibilities for creative automation solutions. The range of SIMATIC HMI Basic Panels includes high-contrast graphical displays with touch and tactile function keys, simple networking and seamless communication making them ideal for applications with the new SIMATIC S7-1200.

The Software
Our highly integrated engineering system, SIMATIC STEP 7 Basic, which includes SIMATIC WinCC Basic, is task-oriented, intelligent and provides intuitive easy-to-use editors for the efficient configuration of the SIMATIC S7-1200 and SIMATIC HMI Basic Panels. In addition to programming, it is the common engineering framework for hardware and network configuration, diagnostics and more. The functionality provided by this engineering system is the key ingredient that makes the interplay between the controller and HMI so powerful.

A modular concept for compact automation in a scalable design.

The SIMATIC S7-1200 features an integrated PROFINET interface, PROFIBUS and AS-interface functionality, remote access as well as powerful integrated technology functions and a highly flexible and scalable design. This enables simple communication, efficient solutions for technological tasks, and a perfect fit for individual automation requirements in a wide variety of applications.

Scalable and flexible design
The SIMATIC S7-1200 controller family has been designed for maximum flexibility when configuring individual machines. This allows you to custom-design your controller system to optimally meet specific needs; it also makes future system expansions quick and easy.

Industrial communication
As a PROFINET IO controller, SIMATIC S7-1200 fully enables the connection of PROFINET IO devices. In addition, the integrated PROFINET interface provides seamless communication with the SIMATIC STEP 7 Basic engineering system for project planning and programming, with SIMATIC HMI Basic Panels for visualization, with additional controllers for PLC-to-PLC communication and with third-party devices for advanced integration options. The connection to the fieldbus standard PROFIBUS for short reaction times, for example, is made possible thanks to the new PROFIBUS communication modules as well. For remote communication via wireless internet the S7-1200 has been equipped with a GSM/GPRS interface.

Further, AS-i actuators and sensors of the lowest field level can be connected through the AS-i Master communication module.

Integrated technology
The name SIMATIC has been a reliable symbol in the field of automation for many years. We have taken our experience and have integrated our proven and innovative technology functions into our new controller – ranging from counting and measuring, speed, position and duty cycle control to simple process control functionality. This wide variety of functionality guarantees you the ability to solve a wide array of applications.

Communication modules

Up to 3 communication modules can be added to any of the SIMATIC S7-1200 CPUs. The RS485 and RS232 communication modules are fit for serial, character-based point-to-point connections. The library functions USS drive protocol and Modbus RTU Master and Slave protocols are already included within the SIMATIC STEP 7 Basic engineering system.

Simple telecontrol applications

The new communication processor CP 1242-7 enables both monitoring and controlling of distributed S7-1200 units from a single hub via mobile telephone networks or the Internet.

Integrated PROFINET interface

The PROFINET IO controller enables the connection of PROFINET devices. The integrated PROFINET interface can be used for programming, as well as for HMI and PLC-to-PLC communication. Additionally, communication is supported by third-party devices based on open Ethernet protocols. This interface features an RJ45 connector with auto-cross-over functionality and provides for data transmission rates at 10/100 Mbit/s. A higher number of Ethernet connections are enabled by the following protocols: TCP/IP native, ISO on TCP, and S7 communication.

Integrated technology

High-speed inputs
The new SIMATIC S7-1200 controller comes with up to six high-speed counters. Three inputs at 100 kHz and three inputs at 30 kHz are seamlessly integrated for counting and measuring functionality.

High-speed outputs
Two high-speed pulse train outputs at 100 kHz are integrated for controlling the speed and position of a stepper motor or a servo drive. They can alternatively be

Complete AS-i Master

Up to 62 AS-i standard slaves, such as motor starters, position switches, and simple E/A modules, can be connected to each AS-i Master CM 1243-2. The separate data-decoupling module DCM 1271 enables this for AS-i Power24V grids as well.

Full PROFIBUS functionality

Up to 16 DP-slave connections may be implemented in combination with the PROFIBUS DP Master CM 1243-5. The S7-1200 is able to communicate with any other DP master thanks to the intelligent PROFIBUS DP Slave CM 1242-5.

Memory

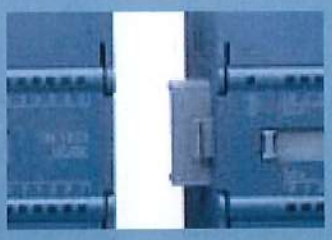
The controller comes with up to 50 KB of integrated work memory – with a floating boundary between the user program and user data. Up to 2 MB of integrated load memory and 2 KB of integrated retentive memory are also provided.

The optional SIMATIC Memory Card provides an easy way to transfer programs to multiple CPUs. This card can also be used for storing miscellaneous files or to update the firmware of the controller system.

used as pulse width-modulated outputs for controlling the speed of a motor, positioning a valve or controlling a heating element.

PID control
PID control loops with auto-tune allow for simple closed-loop process control applications.

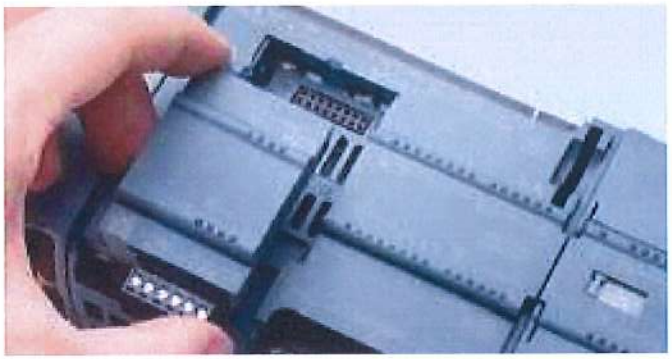
Scalable and flexible design



Signal modules
Up to eight signal modules can be connected to the largest CPUs for the support of additional digital and analog I/Os.

Signal boards
One signal board can be directly pinned up to a CPU. This allows you to customize the CPUs by adding digital or analog I/Os to the controller without affecting its physical size. The modular concept provided by the SIMATIC S7-1200 allows you to design a controller system to exactly fit your application needs.

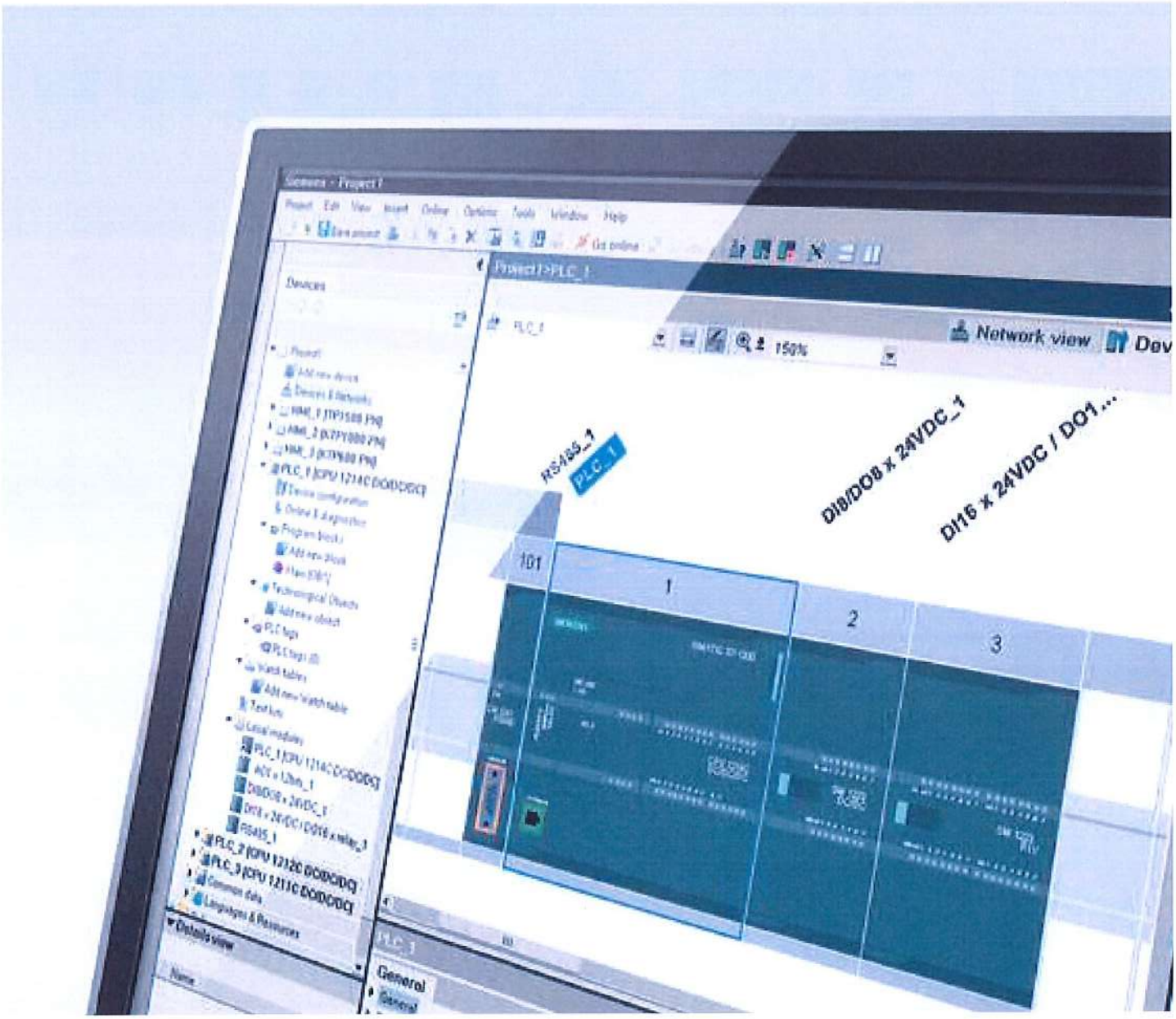
Design or expand a controller system to exactly fit your requirements.



With the addition of a signal board, you can increase the number of digital or analog I/Os on the controller to custom-fit your needs without increasing the controller's footprint.

Signal boards, signal modules, communication modules
The SIMATIC S7-1200 system comes in three different models, CPU 1211C, CPU 1212C and CPU 1214C, which may each be expanded to exactly fit your machine requirements. One signal board can be added inside the front of any CPU to easily expand the digital or analog I/Os without affecting the physical size of the controller. Signal modules can be connected to the right side of the CPU to further expand the digital or analog I/O capacity. CPU 1212C accepts two and CPU 1214C accepts eight signal modules. Finally, all SIMATIC S7-1200 CPUs can be equipped with up to three communication modules on the left side of the controller – this allows for any type of communication, including PROFIBUS, PROFINET, AS-Interface, point-to-point communication, WAN and GPRS.

Easy and convenient installation
All SIMATIC S7-1200 hardware has built-in clips that allow for easy and convenient mounting on a standard 35-mm DIN rail. These built-in clips can also be snapped into an extended position to provide mounting holes for situations where panel mounting is required. The SIMATIC S7-1200 hardware can be installed in either a horizontal or vertical position providing you with additional installation options. These integrated features offer users maximum flexibility during the installation process and they make the SIMATIC S7-1200 a practical solution for a wide variety of applications.

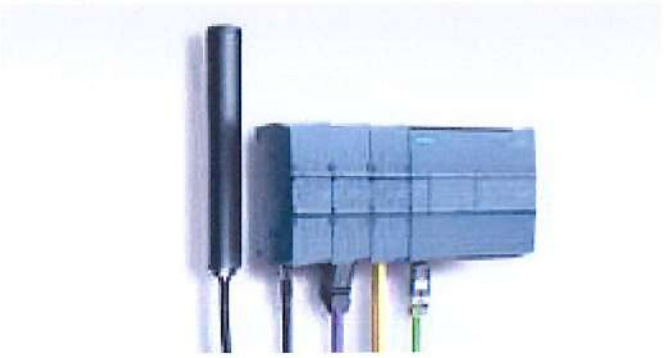


The device view within the SIMATIC STEP 7 Basic engineering system allows you to easily configure and visualize your SIMATIC S7-1200 controller system.

Removable terminals
All SIMATIC S7-1200 hardware is equipped with removable terminal blocks. This means that wiring only has to be done once, saving valuable time during the start-up and commissioning phases of a project. Additionally, the removable terminal blocks are an added convenience when hardware components must be replaced.

Space-saving design
All SIMATIC S7-1200 hardware has been specifically designed to save space in the control panel. For example, CPU 1214C has a width measuring only 110 mm and both the CPU 1212C and CPU 1211C are only 90 mm wide. Together with the small communication and signal modules, this modular system saves valuable space and offers you the highest level of efficiency and flexibility during the installation process.

Fast, easy and flexible communication.



The PROFINET IO controller with integrated PROFINET interface, additionally enabling communication among engineering software, panels and the CPU without any problems.

Integrated PROFINET interface
The SIMATIC S7-1200 is equipped with an integrated PROFINET interface, which provides seamless communication with the integrated SIMATIC STEP 7 Basic engineering. It supports programming, communication with SIMATIC HMI Basic Panels for visualization, communication with additional controllers for PLC-to-PLC communication and with third-party devices for advanced integration possibilities. The interface consists of a noise immune RJ45 connector with auto-crossover functionality, which supports Ethernet networks and features a data transmission rate of up to 10/100 Mbit/s.

Fast fieldbus communication
There are two new communication modules (CMs) that facilitate the connection of S7-1200 to PROFIBUS. Up to 16 field devices may be connected as DP slaves with the DP Master CP 1243-5, as decentralized peripheral ET 200 units, for example. The S7-1200 may function as a DP slave with the CM 1242-5 and may thus be connected to any other DP master. Both modules are easily connected via the backplane bus to the left of the CPU. Up to 62 AS-i standard slaves, such as motor starters, position switches, and simple E/A modules, can be connected to each AS-i Master CM 1243-2. The separate data decoupling module DCM 1271 enables this for AS-i Power24V grids as well.

Simple networking
To minimize cabling and provide maximum networking flexibility, the CSM 1277 Compact Switch Module can be used to configure a uniform or mixed network – with line, tree or star topologies. The CSM 1277 is a 4-port unmanaged switch, which allows you to connect the SIMATIC S7-1200 with up to three additional devices.

Communication with additional controllers and HMI devices
To ensure communication with additional SIMATIC controllers and HMI devices, the SIMATIC S7-1200 supports the connection to multiple devices communicating with the proven S7 communication protocol.

Communication with third-party devices
Seamless integration of devices from other manufacturers is possible with the integrated PROFINET interface on the SIMATIC S7-1200. It is possible to connect and communicate with multiple third-party devices utilizing the supported open Ethernet protocols TCP/IP native and ISO on TCP. This communication capability, which is configured with standard T-Send/T-Receive instructions

The network view within the SIMATIC STEP 7 Basic engineering system allows you to easily configure and visualize your network configuration.

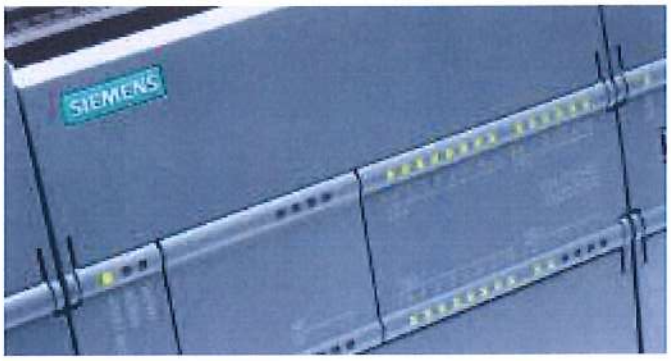
provided by the integrated engineering system SIMATIC STEP 7 Basic, offers you an even higher level of flexibility in designing your automation solution.

PROFINET – the open Industrial Ethernet standard
Utilizing established TCP/IP standards, the integrated PROFINET interface provided with the SIMATIC S7-1200 can be used for programming, or to communicate with HMI devices and additional controllers. As a PROFINET IO controller, SIMATIC S7-1200 now supports communication with PROFINET IO devices.

PROFIBUS – the fieldbus standard
Thanks to the recent connection between S7-1200 and the fieldbus standard PROFIBUS – the powerful network with short reaction times – a uniform communication from the field level to the control level will be made possible in the future. This is our dedicated reaction to one of the most important requirements in the segment of compact automation.

AS-Interface – the effective fieldbus standard on the actuator/sensor level
AS-i is an open industrial bus that is used on the lowest automation level in the field area: the actuator/sensor level. On this level the data volume is low, but there are a large number of connected devices as well as real-time demands at the same time. The high-performance S7-1200 AS-i Master effectively connects the users. It is integrated seamlessly into the TIA Portal and offers a comfortable parameterization of the AS-i slaves that is displayed in plain text.

Powerful technology functions. Completely integrated.



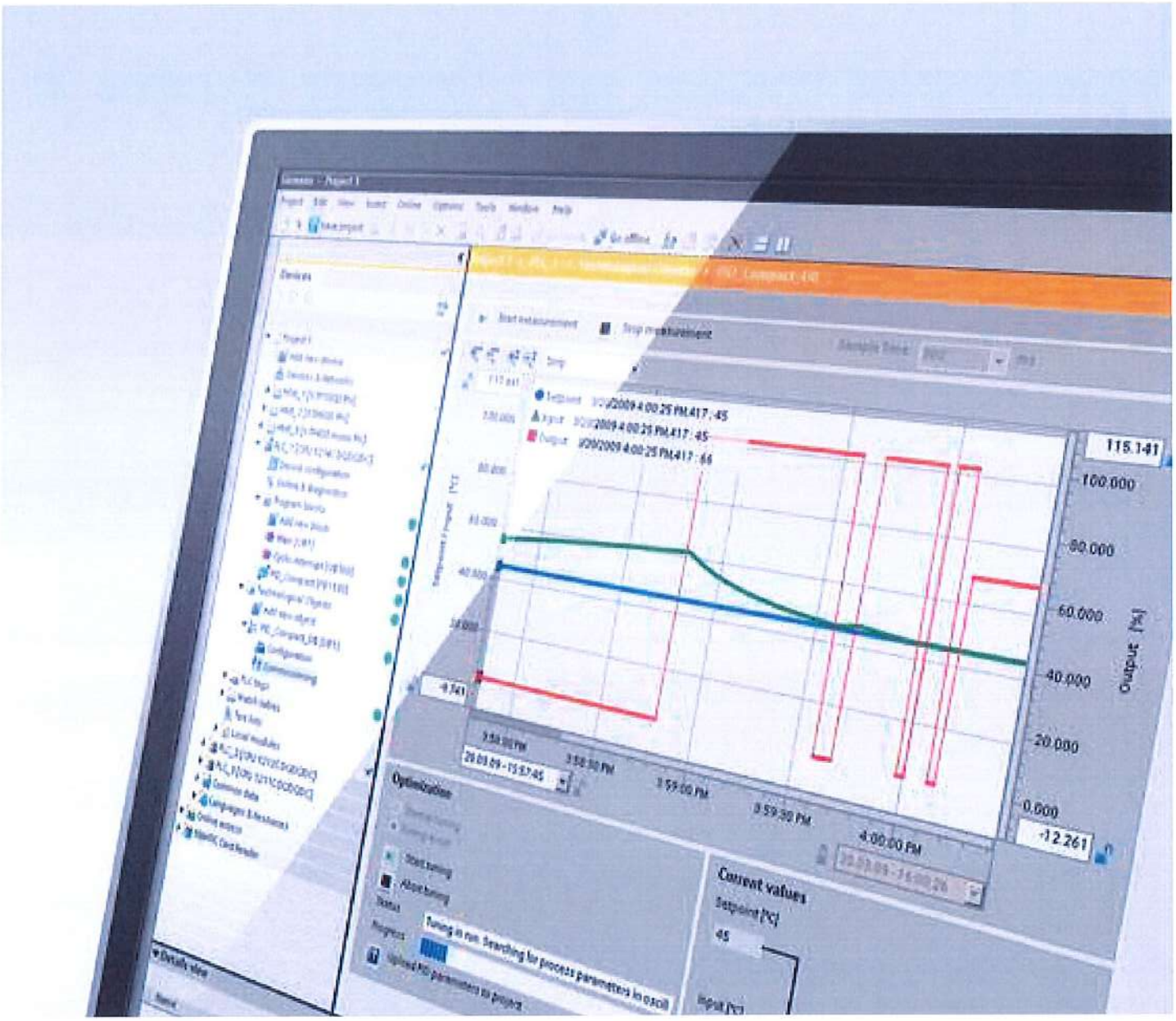
Integrated technology for counting and measuring, closed-loop control and motion control make the SIMATIC S7-1200 an extremely versatile system for many types of automation tasks.

High-speed inputs for counting and measuring
Up to six high-speed counters, three at 100 kHz and three at 30 kHz, are integrated for precise monitoring of incremental encoders, frequency counting, or high-speed counting of process events.

High-speed outputs for speed, position or duty cycle control
Two high-speed outputs are integrated into the SIMATIC S7-1200 controller for use as either pulse train outputs or pulse-width-modulated outputs. When configured as a PTO, they offer a pulse train with 50 percent duty cycle at a rate of up to 100 kHz for the open-loop speed and position control of stepper motors and servo drives. Feedback for the pulse train outputs is provided internally using two of the high-speed counters. When configured as a PWM output, a fixed cycle time output with a variable duty cycle is provided for controlling the speed of a motor, the position of a valve or the duty cycle of a heating element.

PLCopen motion function blocks
The SIMATIC S7-1200 supports the open-loop speed and position control of stepper motors and servo drives. This functionality is easily configured using an axis technology object along with the internationally accepted PLCopen motion function blocks included within the engineering system SIMATIC STEP 7 Basic. Absolute, relative and velocity moves are supported in addition to home and jog functions.

Drive commissioning control panel
The drive commissioning control panel included with the engineering system SIMATIC STEP 7 Basic simplifies the start-up and commissioning of stepper motors and servo drives. It provides both automatic and manual control of a single motion axis as well as online and diagnostics information.



The tuning of PID control loops is fast and accurate using the commissioning control panel included with SIMATIC STEP 7 Basic.

PID functionality for closed-loop control
The SIMATIC S7-1200 supports PID control loops for simple process control applications. These control loops are easily configured using a PID controller technology within the engineering system SIMATIC STEP 7 Basic. Additionally, the SIMATIC S7-1200 supports PID auto-tuning to automatically compute the optimum tuning values for the gain, integral time and derivative time.

PID commissioning control panel
The PID commissioning control panel included within SIMATIC STEP 7 Basic simplifies the loop tuning process. It provides both automatic tuning and manual control capabilities for a single control loop and it also provides a graphical trend view of the tuning process.

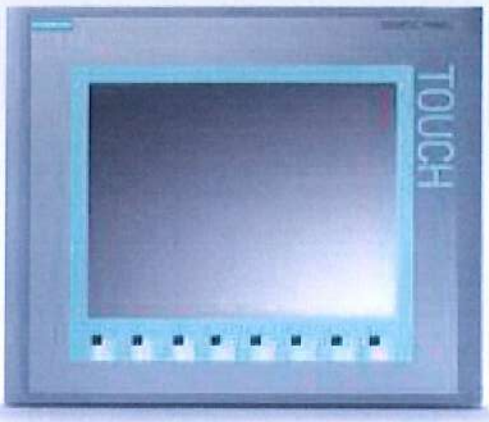
KP300 Basic mono PN

KTP400 Basic mono PN

KTP600 Basic color PN

The SIMATIC HMI Basic Panels: high-quality panels at attractive prices.

The SIMATIC HMI Basic Panels are designed for seamless compatibility with the new SIMATIC S7-1200 controller. Our new SIMATIC HMI Basic Panels for compact applications provide a solution that adapts to your specific visualization requirements with optimized performance and functionality, a wide variety of screen sizes and mounting compatibility for easy upgrades.



KTP1000 Basic color PN

TP1500 Basic color PN

Optimized performance and functionality
The SIMATIC S7-1200 integrates perfectly with the SIMATIC HMI Basic Panels to provide simple visualization and control options for compact automation applications. With the seamless integration between the controller and HMI engineering software, SIMATIC STEP 7 Basic and SIMATIC WinCC Basic, the perfect solution with the best results can be achieved in the shortest amount of time.

Touch screen and tactile keys
The new SIMATIC HMI Basic Panels feature a touch display for intuitive operation as standard starting at 4". Apart from touch screen operation on 4", 6" or 10" displays, the panels also have fully programmable keys with tactile feedback. A device with a 15" touch screen is also available for applications where visualization requires a larger display area. For applications in the lower performance segment, we offer a compact device for operation with ten functional keys. The high-definition 3" display offers an individually configurable LED background illumination in color.

Numerous standard functions for engineering of compact automation tasks.

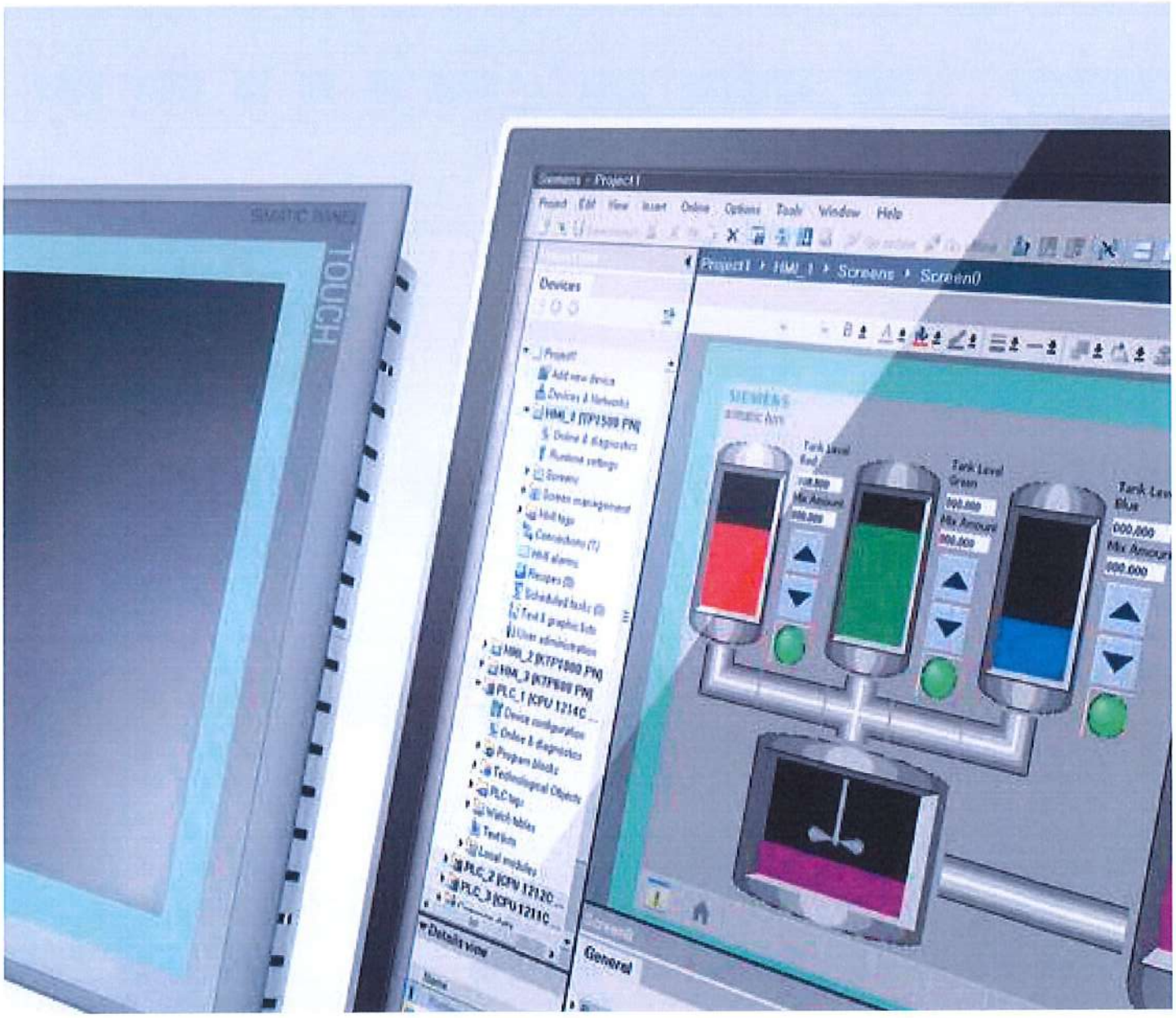
The new SIMATIC HMI Basic Panels with an integrated PROFINET interface allow easy and user-friendly visualization of machines and processes. This represents an essential part of the interplay with the SIMATIC S7-1200.

PROFINET interface
Each of the SIMATIC HMI Basic Panels has an integrated PROFINET interface. This enables communication with the controller and the transmission of parameterization and configuration data. The PROFINET interface, which is integrated in the SIMATIC S7-1200 controller, makes the interplay between the controller and the SIMATIC HMI Basic Panels easy and reliable.

Space-saving design and ruggedness
With the IP65 degree of protection, the SIMATIC HMI Basic Panels are very well suited for use in rough industrial environments. With compact installation dimensions, they are also fit for applications where space is limited. In applications where space is extremely limited, the four- and six-inch variants can be installed and configured in an upright position.

Functionalities
All SIMATIC HMI Basic Panels are equipped with a complete range of relevant functionalities, such as alarm logging systems, recipe management, trend functionality, and vector graphics. A comprehensive library with various graphics and objects is provided within the engineering system. User administration according to the demands of different industries is available as well, for example authentication with user ID and password.

Worldwide application
With various certifications and the fulfillment of different norms and regulations, configuration data being available in up to 32 languages and support of Asian and Cyrillic fonts, the SIMATIC HMI Basic Panels are perfectly fit for worldwide application. During operation, up to five languages are available and can be changed online. Language-dependent graphics additionally support intuitive operation.



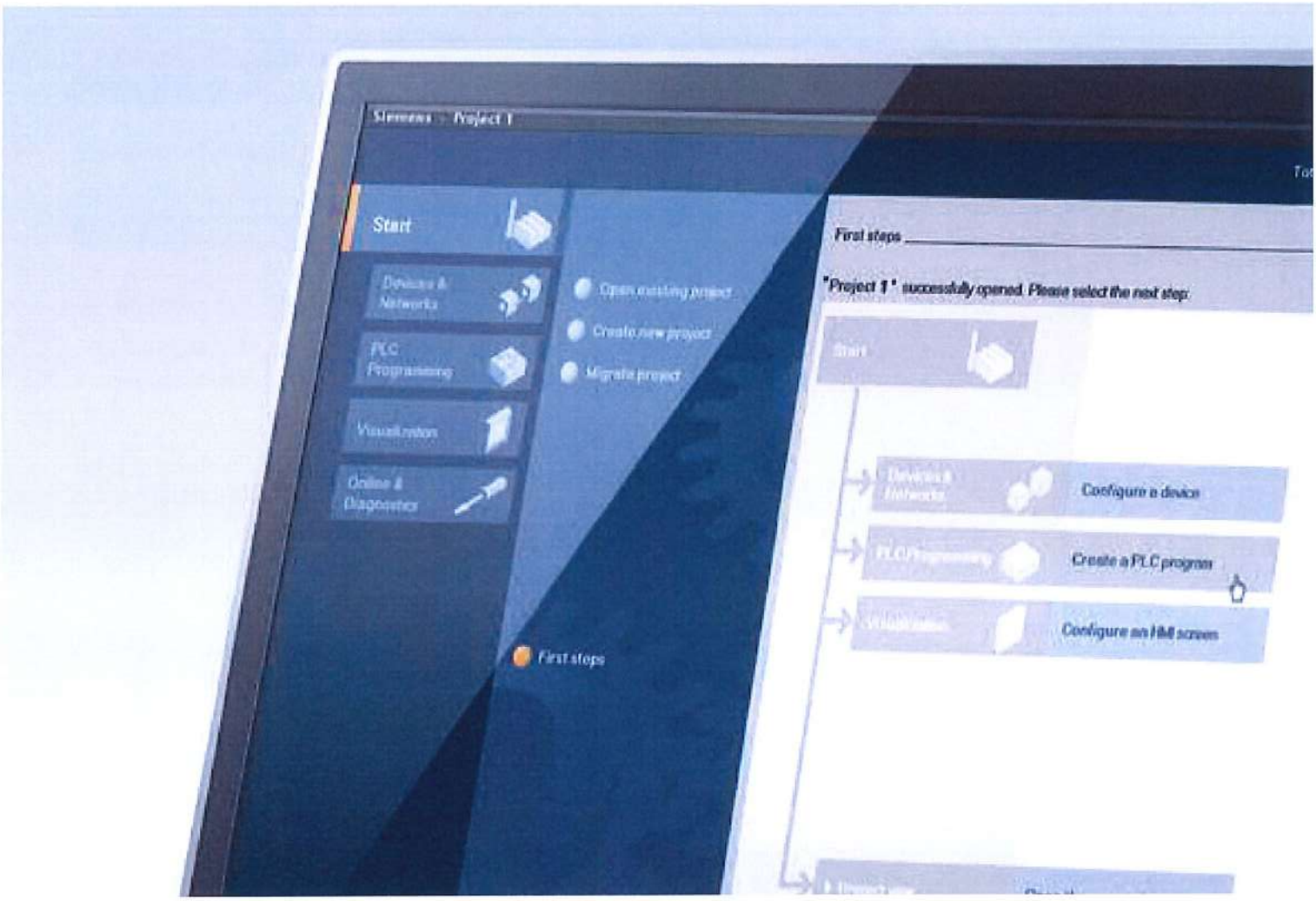
The SIMATIC HMI Basic Panels are easily configured using SIMATIC WinCC Basic which is integrated into the SIMATIC STEP 7 Basic engineering system.

Display and graphics
The SIMATIC HMI Basic Panels starting at 4" to 15" have a standard touch display for intuitive operation. The use of displays with full graphical functionality offers entirely new possibilities for visualization: vector graphics, the representation of trend charts, texts, bitmaps and I/O fields enable a clearly arranged and thus user-friendly operation display. Background illumination of the 3" device may be individually set to white, green, red or yellow. This enables the visualization of alarms, for example, and reduces the need for additional components for optical signaling.

Function keys
Aside from touch screen functionality, the SIMATIC HMI Basic Panels in sizes of 4", 6" and 10" screens have individually configurable function keys – this means individual functionalities may be configured according to the selected display on the screen. Additional usability and operational reliability is ensured with the tactile feedback provided by these function keys. The keys on the 3" device may be individually configured. Operation of these keys is similar to mobile phone keys – enabling fast and intuitive operation.

One software for all tasks.

SIMATIC STEP 7 Basic is designed to be intuitive, easy to learn and easy to use. This provides you with highest efficiency in engineering. Smart functionalities such as intuitive editors, drag and drop functionality as well as automatic recognition of possible commands and variables during operation simply result in faster engineering. This new future-proof software architecture is based on the many years of experience of the innovation leader in automation technology.



One common engineering framework
SIMATIC STEP 7 Basic, including SIMATIC WinCC Basic, has task-oriented, intelligent and intuitive editors that enable it to serve as one common engineering framework for programming SIMATIC S7-1200 controllers and configuring SIMATIC HMI Basic Panels. The new integrated engineering system SIMATIC STEP 7 Basic offers you intuitive and fast engineering capabilities for programming and commissioning comprehensive automation solutions. Starting from STEP 7 V11, SIMATIC STEP 7 Basic is an integrated part of SIMATIC STEP 7 Professional for all SIMATIC controllers.

Supporting first-time users and professionals
With SIMATIC STEP 7 Basic, ease of use is guaranteed, whether you are just starting out in engineering or have many years of routine. Engineering is easy to learn and use for starters, and fast and efficient for professionals.

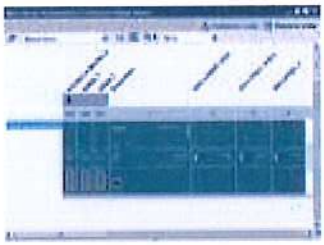
Different users may choose from two different types of views. Using the portal view, you have all tasks for an automation project at a glance. This means beginners are supported with a task-oriented user guidance. Users are provided with task-specific editors that are perfectly fit for their automation task. When using the project view, your entire project is hierarchically structured in the project tree, enabling fast, intuitive access to all editors, parameters and project data – an important prerequisite for object-oriented engineering. Both first-time users and professionals will be able to solve engineering tasks fast and efficiently.

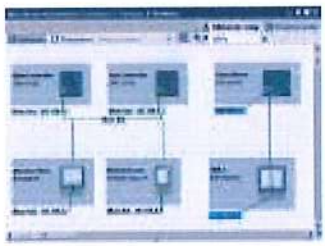
A new dimension in intuitive and efficient engineering.

SIMATIC STEP 7 Basic with integrated SIMATIC WinCC Basic enables the user to perform an unparalleled fast and easy engineering. One project view for all, state-of-the-art user interface technology for intuitive graphical engineering with intelligent drag and drop functionality, shared data handling and more ensures high-quality projects.

One common project tree for controller and HMI
One common project view relieves you from handling separate files for each automation device. This makes sure that our whole project is always consistent after changes in any part of the project. Thus, high project quality is ensured. The project tree's clearly arranged structure remains organized even with complex engineering projects. This is the basis for fast access to respective devices, folders or specific views that will assist you in engineering an automation task. ①

Intelligent drag and drop between controller and HMI editors
Symbols may be assigned to hardware with the drag and drop functionality; the same method can be used for connecting tags between the controllers and HMI. This enables the user to efficiently use both HMI and controller editors within one common engineering framework. ②③



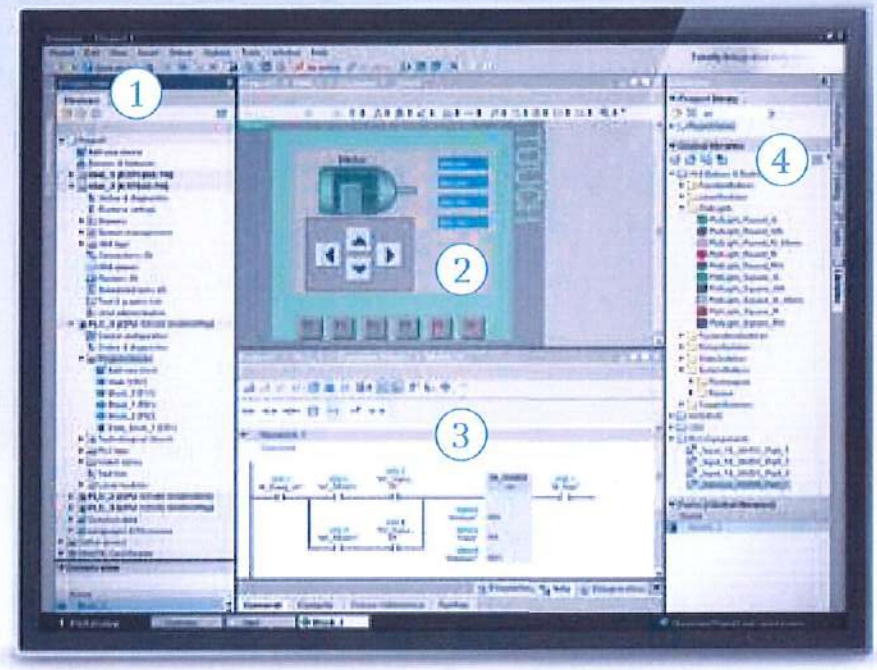


Clearly arranged graphical engineering
A fast and intuitive configuration of devices and networks is ensured by the graphical editors. Connections can be easily configured by graphically connecting the individual devices with lines. In the online mode, visual diagnostics information is provided. For users, this means complex systems may be handled easily and efficiently and large projects are still clearly arranged.

Clear and intuitive user interface for highest usability
The software has a task-oriented user concept. All editors are embedded into one common framework. The user may intuitively work with all editors and change between them per mouse click. Common functions for all editors enable the user to handle projects fast and efficiently. An attractive graphical user interface and immediate system responsiveness on a standard PC ensure ease of use and highest productivity from the beginning of every project. ①②③④

Higher project quality due to shared data handling and consistent symbolism
Automated data consistency ensures high project quality. Modified application data is automatically updated within the entire project. The cross-referencing concept ensures that variables are used consistently within all parts of the project and for various devices – they can thus be updated consistently. Symbols are automatically generated and assigned to respective I/Os. Data is only entered once, meaning that no additional address and data module handling is needed, which reduces the risk of errors. ①②③④

Reuse of data due to a comprehensive library concept
Users may save various engineering elements such as blocks, tags, alarms, HMI screens, individual modules and entire stations in local and global libraries. These elements can be reused within the same project and in different projects as well. Data may be exchanged between separately configured systems with the help of the global library. ④



More beneficial features.

Whether the direct online testing and diagnosis, the easy addition of technology objects or the library concept for time-efficient reuse of data – these and many more functions in detail add to the overall concept of a new dimension in engineering.

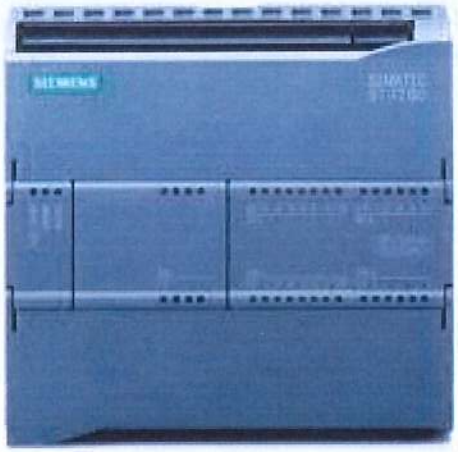
Online test and diagnostics
Only a single mouse click is needed to go online, even if a project has not been loaded. Once online, the project's online and offline status are immediately compared to detect possible differences. Differences or conflicts are clearly displayed, as different engineering modules can be opened in both online and offline status.

Adding technology objects
Adding technology objects is only a mouse click away as well. While adding new objects such as an axis or a PID controller, respective settings are displayed in the engineering system's "Add new object" window. The object may be named according to its function. When fine-tuning various objects, the user is supported with a function description and may obtain additional information via help online. Once an object has been configured, it may be opened in the editor right away, if required. Efficient editors allow intuitive programming in LAD, FBD, and SCL.

Controller programming
Intelligent functions support the user and reduce errors. Configuration and modification of program modules is easy and efficient with only little information to put in. Frequently used commands can even be stored in a favorites list and the entire engineering modules can be copied and added to programs of other SIMATIC S7-1200 controllers; new symbols are automatically added.

Changes can be made very quickly. With a single click, functional modules can be altered subsequently. The modules may be saved, even if not all symbols or I/Os have been assigned. The symbols can also be altered within the user program. It is also easy to configure and modify connections.

Integrated HMI
SIMATIC STEP 7 Basic includes the powerful HMI software SIMATIC WinCC Basic for efficient programming and configuring of SIMATIC HMI Basic Panels. Efficient engineering means for example: direct use of controller process values in the HMI project using intelligent drag and drop functionality. HMI is part of the entire project which means that consistent HMI data is always guaranteed. Connections between HMI and PLC can be centrally defined. Several templates can be created and assigned to other screens. Completely integrated HMI functionality makes configuring the SIMATIC HMI Basic Panels very easy, highly powerful and efficient at the same time.



SIMATIC HMI Basic Panels

KP300 Basic mono PN
10 Function Keys
3.6" LCD mono FSTN display with background illumination in color (white, red, green, yellow)

6AV6 647-0AH11-3AX0

KTP400 Basic mono PN
Touch Screen + 4 Function Keys,
3.8" LCD mono FSTN display,
4 gray scales

6AV6 647-0AA11-3AX0

KTP600 Basic mono PN
Touch Screen + 6 Function Keys,
5.7" LCD mono FSTN display,
4 gray scales

6AV6 647-0AB11-3AX0

KTP600 Basic color PN
Touch Screen + 6 Function Keys,
5.7" LCD TFT display, 256 colors

6AV6 647-0AD11-3AX0

KTP1000 Basic color PN
Touch Screen + 8 Function Keys,
10.4" LCD TFT display, 256 colors

6AV6 647-0AF11-3AX0

TP1500 Basic color PN
Touch Screen,
15.0" LCD TFT display, 256 colors

6AV6 647-0AG11-3AX0

and more.

Compact Switch Module

CSM 1277
4-port unmanaged switch,
4xRJ45 sockets,
10/100 Mbit/s

6GK7 277-1AA10-0AA0

Engineering-System

SIMATIC STEP 7 Basic V11
6ES7 822-0AA01-0YA0

SIMATIC STEP 7 Professional V11
6ES7 822-1AA01-0YA5

Software Update Service
6ES7 822-0AA00-0YL0

Telecontrol Server Basic 8
6NH9 910-0AA20-0AA0

Telecontrol Server Basic 64
6NH9 910-0AA20-0AB0

Telecontrol Server Basic 256
6NH9 910-0AA20-0AC0

and more.

Power Module

PM 1207
Input: 120/230 V AC,
50/60 Hz, 1.2 A/0.67 A,
Output: 24 V DC/2.5 A

6EP1 332-1SH71

Communication Modules and Processor

CM 1241 RS232
6ES7 241-1AH30-0XB0

CM 1241 RS485
6ES7 241-1CH30-0XB0

CM 1243-2 AS-i Master
3RK7 243-2AA30-0XB0

DCM 1271 AS-i Data Decoupling Module
3RK7 271-1AA30-0AA0

CM 1242-5 PROFIBUS DP-Slave
6GK7 242-5DX30-0XE0

CM 1243-5 PROFIBUS DP-Master
6GK7 243-5DX30-0XE0

CP 1242-7 GPRS
6GK7 242-7KX30-0XE0

Signal and Comm

SIMATIC S7-1200 Compact Controllers

CPU 1211C
25 KB, DI 6x24 V DC, DO 4x24 V DC or 4xRLY,
AI 2x10 Bit 0–10 V DC
DC/DC/DC 6ES7 211-1AD30-0XB0
AC/DC/RLY 6ES7 211-1BD30-0XB0
DC/DC/RLY 6ES7 211-1HD30-0XB0

CPU 1212C
25 KB, DI 8x24 V DC, DO 6x24 V DC or 6xRLY,
AI 2x10 Bit 0–10 V DC
DC/DC/DC 6ES7 212-1AD30-0XB0
AC/DC/RLY 6ES7 212-1BD30-0XB0
DC/DC/RLY 6ES7 212-1HD30-0XB0

CPU 1214C
50 KB, DI 14x24 V DC, DO 10x24 V DC or 10xRLY,
AI 2x10 Bit 0–10 V DC
DC/DC/DC 6ES7 214-1AE30-0XB0
AC/DC/RLY 6ES7 214-1BE30-0XB0
DC/DC/RLY 6ES7 214-1HE30-0XB0

Accessories

unication Boards

SB 1221 DC 200 kHz	
DI 4x5 V DC	6ES7 221-3AD30-0XB0
DI 4x24 V DC	6ES7 221-3BD30-0XB0
SB 1222 DC 200 kHz	
DO 4x5 V DC 0.1 A	6ES7 222-1AD30-0XB0
DO 4x24 V DC 0.1 A	6ES7 222-1BD30-0XB0
SB 1223 DC/DC	
DI 2x24 V DC / DO 2x24 V DC 0.5 A	6ES7 223-0BD30-0XB0
SB 1223 DC/DC 200 kHz	
DI 2x5 V DC / DO 2x5 V DC 0.1 A	6ES7 223-3AD30-0XB0
DI 2x24 V DC / DO 2x24 V DC 0.1 A	6ES7 223-3BD30-0XB0
SB 1232 AO	
AO 1x12 Bit ±10 V DC or 0–20 mA	6ES7 232-4HA30-0XB0
SB 1231 AI	
AI 1x12 Bit ±10 V DC, ±5 V DC, ±2.5 V DC or 0–20 mA	6ES7 231-4HA30-0XB0
SB 1231 RTD	
AI 1xRTDx16 Bit, Type: Platin (Pt)	6ES7 231-5PA30-0XB0
SB 1231 TC	
AI 1xTCx16 Bit, Types: J, K, Voltage Range: ± 80 mV	6ES7 231-5QA30-0XB0
CB 1241 RS485	
Clamping Block	6ES7 241-1CH30-1XB0

SIMATIC Memory Card
2 MB (optional)
6ES7 954-8LB01-0AA0
24 MB (optional)
6ES7 954-8LF01-0AA0

TS-Adapter IE Basic
6ES7 972-0EB00-0XA0

Quad-Band GSM Antenna ANT794-4MR
6NH9 860-1AA00

SIM 1274 Input Simulator
8 positions for
CPU 1211C /CPU 1212C
6ES7 274-1XF30-0XA0
14 positions for CPU 1214C
6ES7 274-1XH30-0XA0

TS-Module Modem
6ES7 972-0MM00-0XA0
TS-Module ISDN
6ES7 972-0MD00-0XA0
TS-Module RS232
6ES7 972-0MS00-0XA0
TS-Module GSM
6GK7 972-0MG00-0XA0

Telecontrol Server Basic
Control center software for telecontrol e.g. Telecontrol Server Basic 8
6NH9 910-0AA20-0AA0

Signal Module Expansion Cable
2.0 m
6ES7 290-6AA30-0XA0

Signal Modules

SM 1221 DC

DI 8x24 V DC	6ES7 221-1BF30-0XB0
DI 16x24 V DC	6ES7 221-1BH30-0XB0

SM 1222 DC

DO 8x24 V DC 0.5 A	6ES7 222-1BF30-0XB0
DO 16x24 V DC 0.5 A	6ES7 222-1BH30-0XB0

SM 1222 RLY

DO 8xRLY 30 V DC/250 V AC 2 A	6ES7 222-1HF30-0XB0
DO 16xRLY 30 V DC/250 V AC 2 A	6ES7 222-1HH30-0XB0

SM 1223 DC/DC

DI 8x24 V DC, DO 8x24 V DC 0.5 A	6ES7 223-1BH30-0XB0
DI 16x24 V DC, DO 16x24 V DC 0.5 A	6ES7 223-1BL30-0XB0

SM 1223 DC/RLY

DI 8x24 V DC, DO 8xRLY 30 V DC/250 V AC 2 A	6ES7 223-1PH30-0XB0
DI 16x24 V DC, DO 16xRLY 30 V DC/250 V AC 2 A	6ES7 223-1PL30-0XB0

SM 1223 AC/RLY

DI 8x120/250 V AC, DO 8xRLY 30 V DC/250 V AC 2 A	6ES7 223-1QH30-0XB0

SM 1231 AI

AI 4x13 Bit ±10 V DC, ±5 V DC, ±2.5 V DC or 0–20 mA	6ES7 231-4HD30-0XB0
AI 8x13 Bit ±10 V DC, ±5 V DC, ±2.5 V DC or 0–20 mA	6ES7 231-4HF30-0XB0

SM 1231 RTD

AI 4xRTDx16 Bit	6ES7 231-5PD30-0XB0
AI 8xRTDx16 Bit	6ES7 231-5PF30-0XB0

Types: Platinum (Pt), Copper (Cu), Nickel (Ni) or Resistance

SM 1231 TC

AI 4xTCx16 Bit	6ES7 231-5QD30-0XB0
AI 8xTCx16 Bit	6ES7 231-5QF30-0XB0

Types: J, K, T, E, R, S, N, C, TXK/XK(L) Voltage Range: ±80 mV

SM 1232 AO

AO 2x14 Bit ±10 V DC or 0–20 mA	6ES7 232-4HB30-0XB0
AO 4x14 Bit ±10 V DC or 0–20 mA	6ES7 232-4HD30-0XB0

SM 1234 AI/AO

AI 4x13 Bit ±10 V DC, ±5 V DC, ±2.5 V DC or 0–20 mA, AO 2x14 Bit ±10 V DC or 0–20 mA	6ES7 234-4HE30-0XB0

SIMATIC S7-1200 Starter Kits

SIMATIC S7-1200 Starter Kit

CPU 1212C AC/DC/RLY
Input Simulator
SIMATIC STEP 7 Basic V11 in the TIA Portal
IE TP Cord 2 m
Documentation Collection CD
and more ...

6ES7 212-1BD31-4YB0

SIMATIC S7-1200 + KP300 Basic Starter Kit

CPU 1212C AC/DC/RLY
Input Simulator
KP300 Basic mono PN
SIMATIC STEP 7 Basic V11 in the TIA Portal
IE TP Cord 2 m
Documentation Collection CD
and more ...

6AV6 651-7HA01-3AA1

SIMATIC S7-1200 + KTP400 Basic Starter Kit

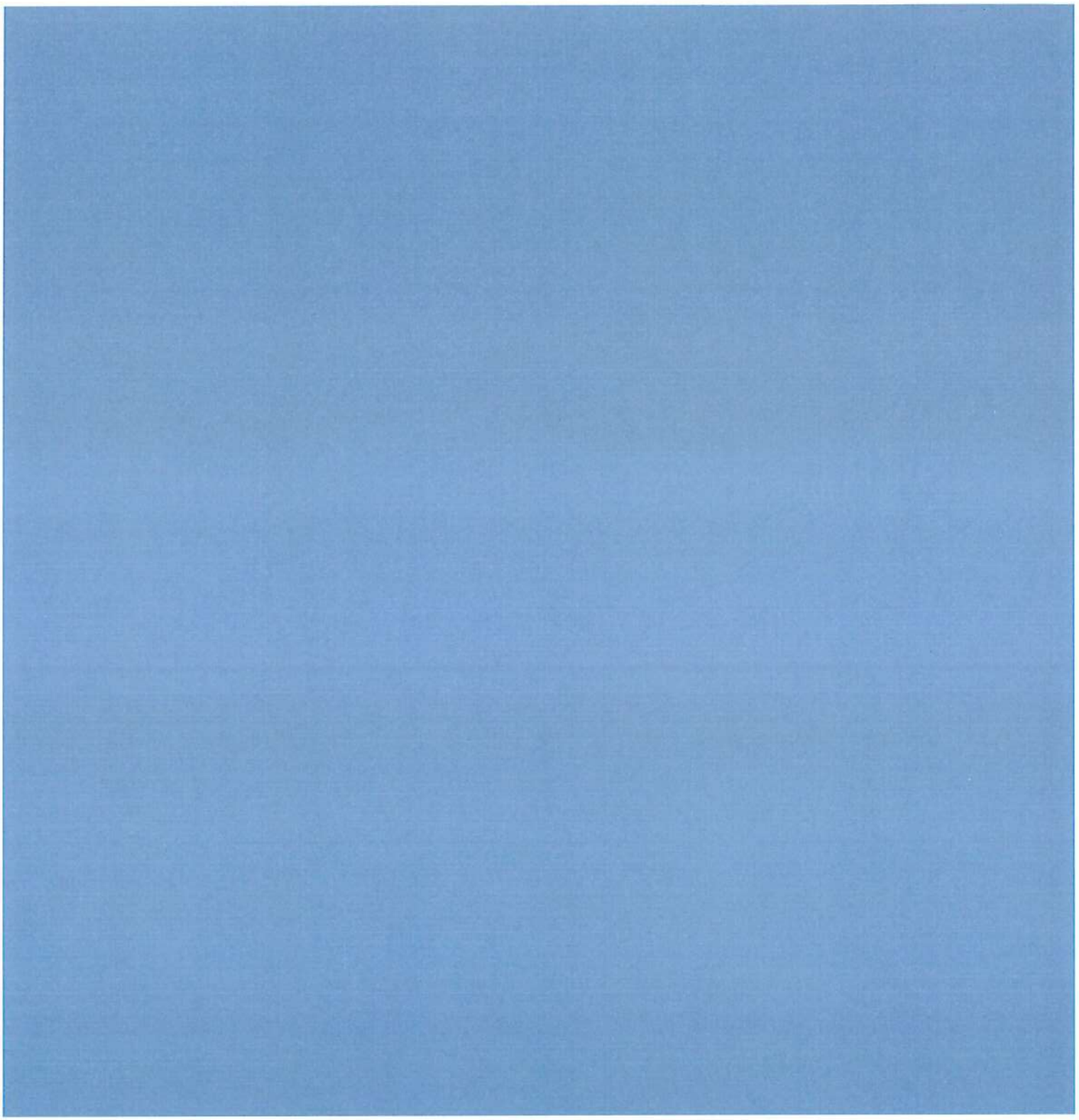
CPU 1212C AC/DC/RLY
Input Simulator
KTP400 Basic mono PN
SIMATIC STEP 7 Basic V11 in the TIA Portal
IE TP Cord 2 m
Documentation Collection CD
and more ...

6AV6 651-7AA01-3AA1

SIMATIC S7-1200 + KTP600 Basic Starter Kit

CPU 1212C AC/DC/RLY
Input Simulator
KTP600 Basic color PN
SIMATIC STEP 7 Basic V11 in the TIA Portal
IE TP Cord 2 m
Documentation Collection CD
and more ...

6AV6 651-7DA01-3AA1



Siemens AG
Industry Sector
Industry Automation
P.O. Box 4848
90327 Nuremberg
GERMANY

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Printed in Germany

The information provided in this brochure contains merely general descriptions or characteristics of performance, which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

siemens.com/simatic-s7-1200

Single-phase UPS

NETYS RT

Total protection on rack or tower
from 1100 to 11000 VA

The solution for

- Switching
- Storage
- Servers and networking devices
- VoIP communication systems
- Structured cabling systems
- Control systems
- Video surveillance systems

Technology

- VFI "online double conversion"

Certifications

Advantages

High protection and availability

- Online double conversion technology with sinusoidal waveform, completely filters out all disturbances from / to the mains power supply and ensures maximum protection of the utility.
- Permanent regulation of output voltage and frequency.
- Wide tolerance of the input voltage reduces switchovers to battery mode, prolonging battery life.

Simple to install

- No configuration necessary on first startup.
- Space and time saving 'tower-to-rack' conversion mode.
- IEC input and output connections (1100-3300 VA) or terminal input and output connections with built-in magnetothermal input switch (5000-11000 VA).
- Compact footprint (tower mode).
- Compact rack enclosure saving valuable cabinet rack space.

Easy to use

- Clear and uncluttered LCD interface, with buzzers that immediately indicate the operating status of the UPS, even for less specialist users.
- Wide range of communication protocols for integration into LAN networks or Building Management Systems (BMS).
- Load segmentation function to prioritize loads and manage critical situations.
- EPO (Emergency Power Off).
- RS232 advanced connection for the management of power supply and local/remote shutdown of the applications.

Meets practical needs

- Modular battery extension (EBM) to meet all back-up time requirements, even after installation.
- Possibility of 1+1 parallel redundant configuration to maximise the availability of critical utilities, even in the event of a module breakdown (5000-11000 VA).

Standard electrical features

- Built-in backfeed protection.
- RJ11 connection for Emergency Power Off (EPO).
- Connection for battery extension modules.
- Port for parallel operation (5000-11000 VA).

Electrical options

- 1+1 parallel module (5000-11000 VA).
- Battery extension modules.
- Manual bypass without interruption (5000-11000 VA).
- Hot-swap manual bypass (1100-3300 VA).
- Portable multiple German standard outlets with cable and IEC 320-C20 plug.

Standard communication features

- LOCAL VIEW: ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux and Mac OS X® operating systems.
- HID: UPS management based on Windows® and Mac OS X® embedded service - USB interface (1100-3300 VA).
- MODBUS RTU (RS232).
- RT-VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems (5000-11000 VA).

Communication options

- RT-VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems (1100-3300 VA).
- Dry-contact interface.
- Environmental Monitoring Device (EMD).

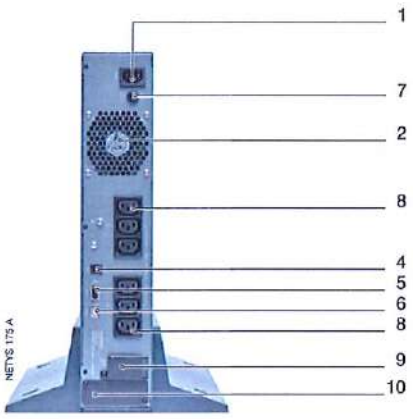
Technical data

NETYS RT								
Sn	1100 VA	1700 VA	2200 VA	3300 VA	5000 VA	7000 VA	9000 VA	11000 VA
Pn	900 W	1350 W	1800 W	2700 W	4500 W	5400 W	7200 W	9000 W
Architecture	online double conversion VFI with input PFC and automatic bypass							
Parallel redundant function	-	-	-	-	1+1	1+1	1+1	1+1
INPUT								
Voltage	230 V (1ph) 175÷280 V; up to 120 V @70% load				230 V (1ph) 181÷280 V; up to 100 V @50% load			
Frequency	50/60 Hz +/-10% (Auto-Selectable)							
Power factor / THDi	>0.99 / <5%							
Input socket	IEC 320-C14 (10 A)	IEC 320-C20 (16 A)			terminals			
OUTPUT								
Voltage	230 V (1ph) selectable 200 / 208 / 220 / 240 V - 50 or 60 Hz ± 2% (± 0.05 Hz in battery mode)							
Power factor	0.9 @ 1000 VA	0.9 @ 1500 VA	0.9 @ 2000 VA	0.9 @ 3000 VA	0.9 @ 5000 VA	0.9 @ 6000 VA	0.9 @ 8000 VA	0.9 @ 10000 VA
Efficiency	up to 93% online mode							
Overload capability	up to 105% continuously; 125% x 3 min; 150% x 30 sec				up to 105% continuously; 125% x 5 min; 150% x 30 sec			
Output connections	6 x IEC 320-C13 (10 A)	6 x IEC 320-C13 (10 A) + 1 x IEC 320-C19 (16 A)			terminals			
BATTERY								
Standard autonomy(1)	8	12	8	10	8	6	8	6
Voltage	24 VDC	48 VDC	48 VDC	72 VDC	192 VDC	192 VDC	240 VDC	240 VDC
Recharge time	< 3 hr to recover 90% capacity				< 6 hr to recover 90% capacity			
COMMUNICATION								
Mimic panel	LCD with graphical icons				LCD with menu available in 6 languages			
RS232 MODBUS protocol	•	•	•	•	•	•	•	•
USB HID protocol	•	•	•	•	-	-	-	-
WEB/SNMP (Ethernet RJ45 port)	option	option	option	option	•	•	•	•
COMM slot	•	•	•	•	•	•	•	•
Dry contacts card	option	option	option	option	option	option	option	option
EPO input (RJ11 port)	•	•	•	•	•	•	•	•
Parallel port	-	-	-	-	•	•	•	•
STANDARDS								
Safety	IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2							
EMC	IEC/EN 62040-2, AS 62040.2							
Performance	IEC/EN 62040-3 (efficiency tested by an external independent body)							
Product declaration(2)	CE, RCM (E2376)							
ENVIRONMENT								
Operating ambient temperature	from 0 °C to +40 °C (from 15 °C to 25 °C for best battery life)							
Storage temperature range	from -15 °C to +50 °C (from 15 °C to 25 °C for best battery life)							
Relative Humidity	5-95% non-condensing							
Noise level (ISO 3746)	< 45 dBA	< 50 dBA			< 55 dBA			
UPS CABINET								
UPS size std (W x D x H)	89x333x440 mm	89x430x440 mm	89x430x440 mm	89x608x440 mm	177.5x670x440 mm	177.5x670x440 mm	261x623x440 mm	261x623x440 mm
UPS size RACK	2U	2U	2U	2U	2U+2U	2U+2U	3U+3U	3U+3U
UPS weight std	13 kg	18 kg	19 kg	30 kg	15.5+40 kg	16+40 kg	19.5+66 kg	20+66 kg
IP rating	IP20							
EBM module size (W x D x H)	89x340x440 mm	89x438x440 mm	89x438x440 mm	89x610x440 mm	89x608x440 mm	89x608x440	130.5x623x440 mm	130.5x623x440 mm
EBM module RACK	2U	2U	2U	2U	2U	2U	3U	3U
EBM module weight	16 kg	29 kg	29 kg	43 kg	40 kg	40 kg	66 kg	66 kg

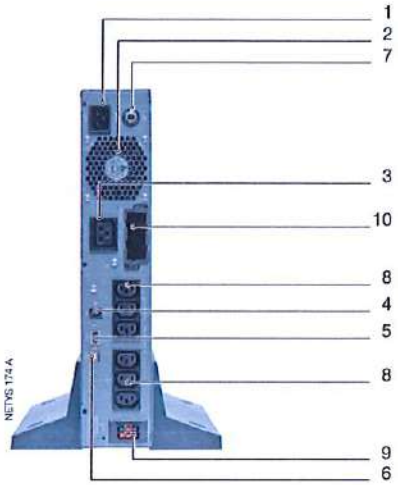
(1) @75% of rated load PF 0.7. (2) BIS compliance for 5000 VA model

NETYS RT
Single-phase UPS
from 1100 to 11000 VA

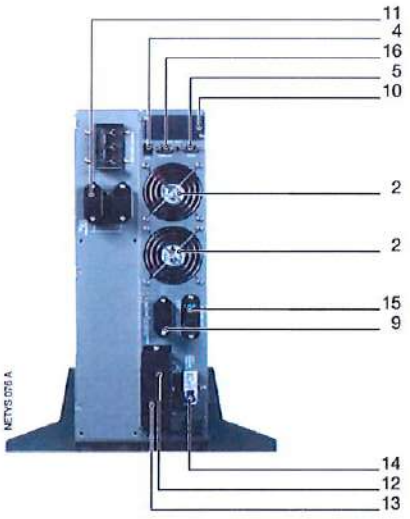
Connections



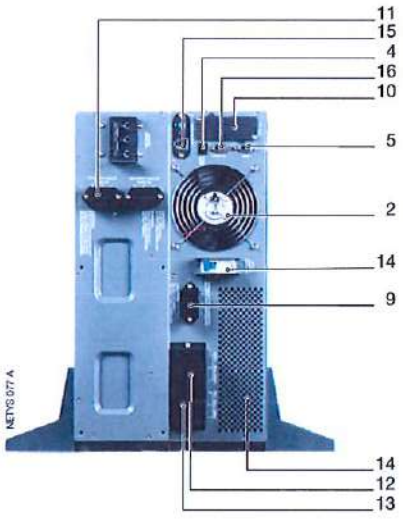
1100 VA



1700 VA - 2200 VA - 3300 VA



5000 VA - 7000 VA + battery



9000 VA - 11000 VA + battery

Converts from Tower to Rack mounted

APPLI 057 - 058 - 059 - 060 - 061 - 062 - 063 - 064 A

1. Mains input socket (IEC 320)
2. Fan
3. Output socket (full power)
4. EPO (Emergency Power Off) input
5. RS232 interface (MODBUS protocol)
6. USB port
7. Input protection
8. Output sockets (IEC 320 - 10 A)
9. Connector for external battery extension
10. Slot for optional communication boards
11. Battery extension connector
12. Output terminals
13. Input terminals
14. Input switch
15. RJ45 LAN ethernet connector
16. Parallel port connector

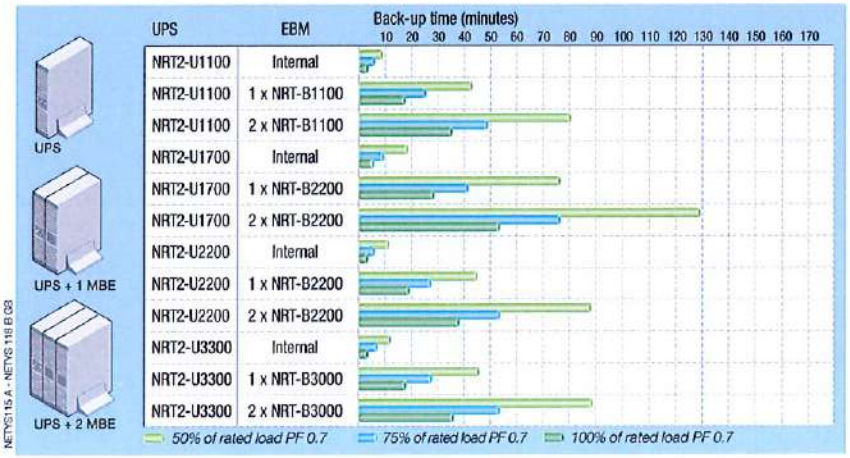
Electrical options

Portable multiple
German standard sockets

Manual bypass
(5000-11000 VA)

Hot-swap manual bypass
(1100-3300 VA)

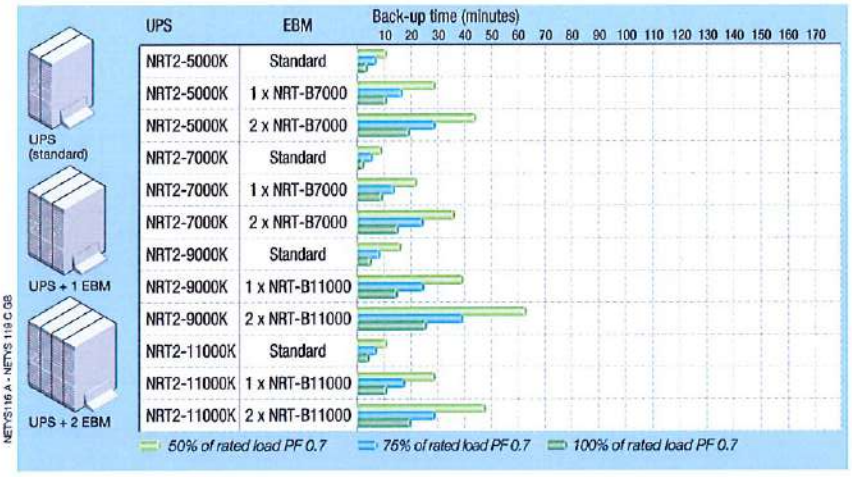
NETYS RT 1100-3300 VA - Battery extension



UPS	EBM	Back-up time (minutes) 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170
NRT2-U1100	Internal	
NRT2-U1100	1 x NRT-B1100	
NRT2-U1100	2 x NRT-B1100	
NRT2-U1700	Internal	
NRT2-U1700	1 x NRT-B2200	
NRT2-U1700	2 x NRT-B2200	
NRT2-U2200	Internal	
NRT2-U2200	1 x NRT-B2200	
NRT2-U2200	2 x NRT-B2200	
NRT2-U3300	Internal	
NRT2-U3300	1 x NRT-B3000	
NRT2-U3300	2 x NRT-B3000	

50% of rated load PF 0.7 — 75% of rated load PF 0.7 — 100% of rated load PF 0.7

NETYS RT 5000-11000 VA - Battery extension



UPS	EBM	Back-up time (minutes) 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170
NRT2-5000K	Standard	
NRT2-5000K	1 x NRT-B7000	
NRT2-5000K	2 x NRT-B7000	
NRT2-7000K	Standard	
NRT2-7000K	1 x NRT-B7000	
NRT2-7000K	2 x NRT-B7000	
NRT2-9000K	Standard	
NRT2-9000K	1 x NRT-B11000	
NRT2-9000K	2 x NRT-B11000	
NRT2-11000K	Standard	
NRT2-11000K	1 x NRT-B11000	
NRT2-11000K	2 x NRT-B11000	

50% of rated load PF 0.7 — 75% of rated load PF 0.7 — 100% of rated load PF 0.7

Parallel redundant operation for business continuity

To achieve the highest level of availability and to power critical utilities, NETYS RT UPS modules above 3.3 kVA can be configured for 1:1 redundancy.

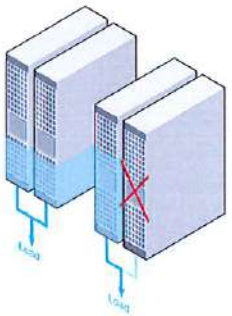
Redundant operation (1+1) means: the system incorporates one more UPS module than is needed to protect the load; in the event of a breakdown, it guarantees sufficient power supply capacity to the load by maintaining online protection.

Parallel technology is based on the principle of load sharing, whereby both units are always kept active.

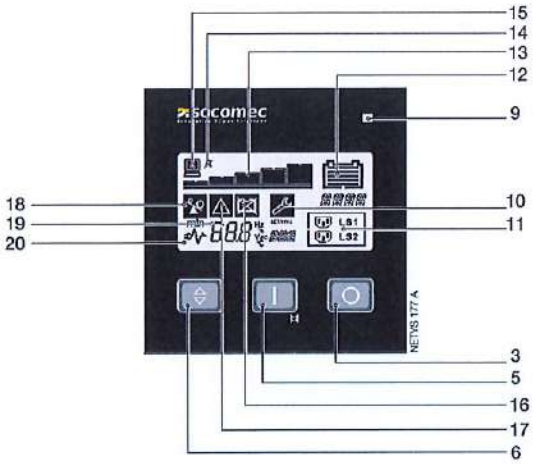
In a redundant configuration, overall system availability is much higher than a conventional UPS system using similar technology.

1+1 redundant configuration does not require additional circuits and can therefore be set up at a later date, simply by using two UPS modules and a collector/manual bypass module which simplifies cabling and maintenance of the UPS installation.

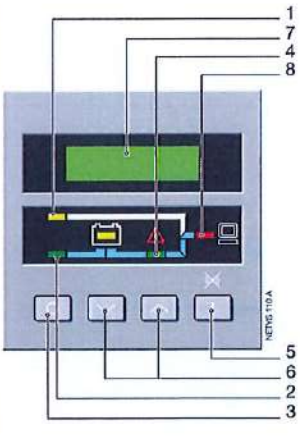
To further streamline the solution, it is also possible to select between operation with separate battery or shared battery, which is extremely useful in the case of applications requiring high levels of autonomy.



Control panel



1100 VA - 1700 VA - 2200 VA - 3300 VA



5000 VA - 7000 VA - 9000 VA - 11000 VA

1. Yellow LED lit. Operation in bypass mode
2. Green LED lit. Mains healthy
3. OFF button
4. Green LED lit. Normal operation (inverter in-line)
5. ON/TEST and buzzer override button
6. Navigator button
7. Alphanumeric LCD display
8. Green LED lit. Status of the load
9. Load status
10. Configuration
11. Programmable outlets
12. Battery status
13. Load level (5 steps)
14. Buzzer off
15. Load present
16. Battery fault / Replace the battery
17. General alarm
18. Overload
19. Input value
20. Normal mode / Battery mode (flashing)

Rosemount 3051C Coplanar Pressure Transmitter ordering information

Rosemount 3051C Coplanar Pressure Transmitters are the industry standard for differential, gage, and absolute pressure measurement. The coplanar platform enables seamless integration with manifolds, flow, and level solutions.

- Loop Integrity and Plugged Impulse Line Diagnostics detect issues that might compromise the integrity of the output signal (code DA1).
- Bluetooth® Connectivity enables efficient, reliable, and safe configuration and maintenance (code BLE).
- Back-lit Graphical Display with Local Language Capability (code M6).
- Safety certification and proof testing (code QT and T9).

CONFIGURE > VIEW PRODUCT >

Online product configurator

Many products are configurable online using our Product Configurator. Select the **Configure** button or visit our website to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

Specifications and options

See the Specifications and options section for more details on each configuration. Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See the Material selection section for more information.

Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in Figure 1.

Figure 1: Model Code Example

3051CD3A22A1A WR5M6BLEDA1
1 2

1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for the fastest delivery times. The non-starred offerings are subject to additional delivery lead time.

Required model components

Model

Code	Description	
3051C	Coplanar pressure transmitter	★

Measurement type

Code	Description	
D	Differential	★
G	Gage	★
A(1)	Absolute	

(1) *If ordered with Wireless output (code X), only available with 316L stainless steel (SST) diaphragm material (code 2), and silicone fill fluid (code 1).*

Pressure range

Code	Differential (Rosemount 3051CD)	Gage (Rosemount 3051CG)	Absolute (Rosemount 3051CA)	
0(1)	–3 to 3 inH_2O (-7.46 to 7.46 mbar)	N/A	N/A	
1	–25 to 25 inH_2O (–62.16 to 62.16 mbar)	–25 to 25 inH_2O (–62.16 to 62.16 mbar)	0 to 30 psia (0 to 2.06 bar)	★
2	–250 to 250 inH_2O (–621.60 to 621.60 mbar)	–250 to 250 inH_2O (–621.60 to 621.60 mbar)	0 to 150 psia (0 to 10.34 bar)	★
3	–1000 to 1000 inH_2O (–2.48 to 2.48 bar)	–393 to 1000 inH_2O (–0.97 to 2.48 bar)	0 to 800 psia (0 to 55.15 bar	★
4	–300 to 300 psi (–20.68 to 20.68 bar)	–14.2 to 300 psi (–0.97 to 20.68 bar)	0 to 4000 psia (0 to 275.79 bar)	★
5	–2000 to 2000 psi (–137.89 to 137.89 bar)	–14.2 to 2000 psi (–0.97 to 137.89 bar)	N/A	★

(1) *Rosemount 3051CD0 is only available with 4-20 mA HART or wireless HART outputs (code A and code X). For 4-20 mA HART output (code A), only transmitter flange code 0 (Alternate flange H2, H7, HJ, or HK), isolating diaphragm code 2, O-ring code A, and bolting option L4 are available. For wireless output (code X), only transmitter flange code 0 (Alternate flange H2), isolating diaphragm code 2, O-ring code A, and bolting option L4 are available.*

Transmitter output

Code	Description	
A	4–20 mA with digital signal based on HART® Protocol	★

F	FOUNDATION™ Fieldbus Protocol	★
W(1)	PROFIBUS® PA Protocol	★
X(2)	Wireless (requires wireless options and engineered polymer housing)	★
M(3)	Low-power, 1–5 Vdc with digital signal based on HART Protocol	

(1) *For local addressing and configuration, M4 (LOI) is required. Not available with product certification codes E4, EM, EP, I6, IM, KD, KL, KM, KP, KS, and N3.*
(2) *This option is only available with intrinsically safe approvals.*
(3) *Only available with C6, E2, E5, I5, K5, KB, EM, IM, KM, EP, and E8 product certifications.*

Materials of construction

Code	Transmitter flange type	Flange material	Drain/vent	
2	Coplanar	SST	SST	★
3(1)	Coplanar	Cast C-276	Alloy C-276	★
4	Coplanar	Alloy 400	Alloy 400/K-500	★
5	Coplanar	Plated CS	SST	★
7(1)	Coplanar	SST	Alloy C-276	★
8(1)	Coplanar	Plated CS	Alloy C-276	★
0	Alternate process connection			★

(1) *Materials of construction comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.*

Isolating diaphragm

Code	Description	
2(1)	316L SST	★
3(1)	Alloy C-276	★
4(2)	Alloy 400	
5(2)	Tantalum (available on Rosemount 3051CD and CG, ranges 2–5 only; not available on Rosemount 3051CA)	
6(2)	Gold-plated alloy 400 (use in combination with O-ring option code B)	
7(2)	Gold-plated 316 SST	

(1) *Materials of construction comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.*
(2) *Not available with wireless output (code X).*

O-ring

Code	Description	
A	Glass-filled PTFE	★
B	Graphite-filled PTFE	★

Sensor fill fluid

Code	Description	
1	Silicone	★
2(1)	Inert (differential and gage only)	★

(1) *Not available with wireless output (code X).*

Housing material

Code	Description	Conduit entry size	
A	Aluminum	½–14 NPT	★
B	Aluminum	M20 x 1.5	★
J	SST	½–14 NPT	★
K	SST	M20 x 1.5	★
P(1)	Engineered polymer	No conduit entries	★
D(2)	Aluminum	G½	
M(2)	SST	G½	

(1) *Only available with wireless output (code X).*
(2) *Transmitter conduit entry will be ½ NPT and a ½ NPT to G½ thread adapter will be provided. These options are only available with product certifications options I1, I2, I3, I7, IA, IB, IM, KA, N1, N3, N7. Product certifications options E4 and IG are available with aluminum only (option D).*

Wireless options

Requires wireless output (code X) and engineered polymer housing (code P).

Wireless transmit rate, operating frequency, and protocol

Code	Description	
WA3	User configurable transmit rate, 2.4 GHz *Wireless*HART®	★

Antenna and SmartPower™

Code	Description	
WP5	Internal antenna, compatible with Green Power Module (I.S. Power Module sold separately)	★

Additional options

Local wireless device access

Code	Description	
BLE(1)	Bluetooth® configuration and maintenance	★

(1) *Requires the Graphical LCD Display (code M6).*

Extended product warranty

Code	Description	
WR3	3-year limited warranty	★
WR5	5-year limited warranty	★

Plantweb™ control functionality

Code	Description	
A01	FOUNDATION™ Fieldbus control function block suite	★

Plantweb™ diagnostic functionality

Code	Description	
DA0(1)	Loop Integrity Diagnostic	★
DA1(1)	Loop Integrity and Plugged Impulse Line Diagnostics	★
D01	FOUNDATION™ Fieldbus Diagnostics Suite	★

(1) *Only available with 4-20 mA HART protocol (code A).*

Alternate flange

The alternate flange option code requires the 0 code in materials of construction for alternate process connection.

Code	Description	
H2	Traditional flange, 316 SST, SST drain/vent	★
H3(1)	Traditional flange, alloy C, alloy C-276 drain/vent	★
H4	Traditional flange, cast alloy 400, alloy 400/K-500 drain/vent	★
H7(1)	Traditional flange, 316 SST, alloy C-276 drain/vent	★
HJ	DIN-compliant traditional flange, SST, 7/16-in. (10 mm) adapter/manifold bolting	★
FA	Level flange, SST, 2-in. (51 mm), ANSI Class 150, vertical mount 316 SST drain/vent	★
FB	Level flange, SST, 2-in. (51 mm), ANSI Class 300, vertical mount 316 SST drain/vent	★
FC	Level flange, SST, 3-in. (76 mm), ANSI Class 150, vertical mount 316 SST drain/vent	★
FD	Level flange, SST, 3-in. (76 mm), ANSI Class 300, vertical mount 316 SST drain/vent	★
FP	DIN level flange, SST, DN 50, PN 40, vertical mount 316 SST drain/vent	★
FQ	DIN level flange, SST, DN 80, PN 40, vertical mount 316 SST drain/vent	★
HK(2)	DIN compliant traditional flange, SST, 0.40-in. (10 mm) adapter/manifold bolting 316 SST	
HL	DIN compliant traditional flange, SST, 0.50-in. (12 mm) adapter/manifold bolting 316 SST	

(1) *Materials of construction comply with recommendations per NACE MR0175/ISO 15156 for sour oil field production environments. Environmental limits apply to certain materials. Consult latest standard for details. Selected materials also conform to NACE MR0103 for sour refining environments.*

(2) *Not valid with option code P9 for 4500 static pressure.*

Manifold assembly

"Assemble-to" items are specified separately and require a completed model number.

Code	Description	
S5	Assemble to Rosemount 305 Integral Manifold	★
S6	Assemble to Rosemount 304 Manifold or Connection System	★

Integral mount primary element

Not valid with option code P9 for 4500 static pressure. "Assemble-to" items are specified separately and require a completed model number.

Code	Description	
S3	Assemble to Rosemount 405 Compact Orifice Plate	★
S4(1)	Assemble to Rosemount Annubar™ or Rosemount 1195 Integral Orifice	★

(1) *Transmitter flange limited to coplanar (option codes 2, 3, 5, 7, or 8) or traditional (option codes H2, H3, or H7).*

Seal assemblies

"Assemble-to" items are specified separately and require a completed model number.

Code	Description	
S1(1)	Assemble to one Rosemount seal	★
S2(2)	Assemble to two Rosemount seals	★

(1) *Not valid with option code D9 for RC½ adapters.*
(2) *Not valid for option codes DF and D9 for adapters.*

Mounting bracket

Panel mounting bolts are not supplied.

Code	Description	
B4	Coplanar flange bracket, all SST, 2-in. (51 mm) pipe and panel	★
B1	Traditional flange bracket, CS, 2-in. (51 mm) pipe	★
B2	Traditional flange bracket, CS, panel	★
B3	Traditional flange flat bracket, CS, 2-in. (51 mm) pipe	★
B7	Traditional flange bracket, B1 with SST bolts	★
B8	Traditional flange bracket, B2 with SST bolts	★
B9	Traditional flange bracket, B3 with SST bolts	★
BA	Traditional flange bracket, B1, all SST	★
BC	Traditional flange bracket, B3, all SST	★

Product certifications

Code	Description	
E8	ATEX Flameproof	★
I1(1)	ATEX Intrinsic Safety	★
IA	ATEX FISCO Intrinsic Safety; for FOUNDATION™ Fieldbus or PROFIBUS® PA Protocol only	★

N1	ATEX Type n Certification	★
K8	ATEX Flameproof, Intrinsic Safety, Type n, Dust (combination of E8, I1 and N1)	★
E4[2]	Japan Flameproof	★
E5	USA Explosion-proof, Dust Ignition-proof	★
I5[3]	USA Intrinsically Safe, Nonincendive	★
K5	USA Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
E6	Canada Explosion-proof, Dust Ignition-proof, Division 2	★
I6	Canada Intrinsic Safety	★
C6	Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2	★
K6	Canada and ATEX Explosion-proof, Intrinsically Safe, and Division 2 (combination of C6, E8, and I1)	★
E7	IECEx Flameproof	★
I7	IECEx Intrinsic Safety	★
N7	IECEx Type n Certification	★
K7	IECEx Flameproof, Dust Ignition-proof, Intrinsic Safety, and Type n (combination of I7, N7, and E7)	★
IG	IECEx FISCO Intrinsically Safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
E2	Brazil Flameproof	★
I2	Brazil Intrinsic Safety	★
IB	Brazil FISCO intrinsically safe; for FOUNDATION Fieldbus or PROFIBUS PA Protocols only	★
K2	Brazil Flameproof, Intrinsic Safety	★
E3	China Flameproof	★
I3	China Intrinsic Safety	★
EM	Technical Regulations Customs Union (EAC) Flameproof	★
IM	Technical Regulations Customs Union (EAC) Intrinsic Safety	★
KM	Technical Regulations Customs Union (EAC) Flameproof and Intrinsic Safety	★
KB	USA and Canada Explosion-proof, Dust Ignition-proof, Intrinsically Safe, and Division 2 (combination of K5 and C6)	★
KD	USA, Canada, and ATEX Explosion-proof, Intrinsically Safe (combination of K5, C6, I1, and E8)	★
KL[4]	USA, Canada, IECEx, ATEX Intrinsic Safety Combination	★
KS	USA, Canada, IECEx, ATEX Explosion-proof, Intrinsically Safe, Dust, Non-Incendive, Type-N, Div. 2	★
EP	Republic of Korea Flameproof	★
IP	Republic of Korea Intrinsic Safety	★
KP	Republic of Korea Flameproof, Intrinsic Safety	★

(1) *Dust approval not applicable to wireless (output code X). See Rosemount 3051 Wireless product certifications for wireless approvals.*
(2) *Only available with 4-20 mA HART® (output code A), FOUNDATION™ Fieldbus (output code F), or PROFIBUS® PA (output code W). Only available with aluminum housing and G½ conduit entry size (housing material code D).*
(3) *Nonincendive certification not provided with wireless (output code X).*
(4) *Only available with wireless (output code X).*

Product Data Sheet
00813-0100-4811, Rev JC
October 2022

Rosemount™ 3300 Level Transmitter

Guided Wave Radar

- Accurate, direct level measurement virtually unaffected by process conditions
- Minimized maintenance with no moving parts and no re-calibration required
- Fewer process penetrations and reduced installation costs with a MultiVariable™ level and interface transmitter
- Easy installation and commissioning through two-wire technology and user-friendly configuration
- Versatile and easy-to-use transmitter with field proven reliability
- High application flexibility with a wide range of process connections, probe styles, and accessories

ROSEMOUNT™

EMERSON.

Proven, reliable, and easy to use guided wave radar

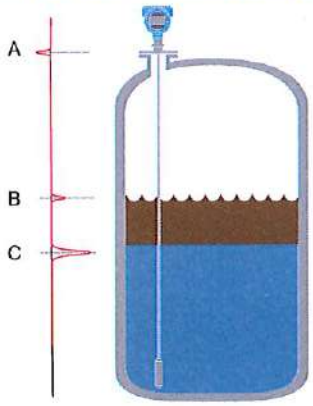
Measurement principle

Low power, nano-second microwave pulses are guided down a probe submerged in the process media. When a microwave pulse reaches a medium with a different dielectric constant, part of the energy is reflected back to the transmitter.

The transmitter uses the residual wave of the first reflection for measuring the interface level. Part of the wave, which was not reflected at the upper product surface, continues until it is reflected at the lower product surface. The speed of this wave depends fully on the dielectric constant of the upper product.

The time difference between the transmitted and the reflected pulse is converted into a distance, and the total level or interface level is then calculated. The reflection intensity depends on the dielectric constant of the product: the higher dielectric constant value, the stronger reflection.

Figure 1: Measurement Principle



A. Reference pulse
B. Level
C. Interface level

Contents

Guided wave radar technology benefits

- Direct level measurement means no compensation needed for changing process conditions (i.e. density, conductivity, temperature, and pressure)
- No moving parts and no re-calibration result in minimized maintenance
- Handles vapor and turbulence well
- Suitable for small tanks, difficult tank geometry, internal obstacles, and unaffected by the mechanical design of chambers
- Allows for easy upgrade
- Top down installation minimizes risk for leakages

Special Rosemount 3300 features

Proven high reliability increases uptime

- First 2-wire level and interface transmitter with field proven reliability
- More than 120,000 units installed
- Advanced signal processing for reliable measurement
- Accurate level unaffected by changing process conditions

High application flexibility

- Suitable for most liquid storage and monitoring level and interface applications
- A wide selection of process connections and probe styles
- Remote mounting, mounting bracket, Emerson Wireless 775 THUM™ Adapter, HART® Tri-Loop™, and probe centering discs accessories
- Easy retrofit in existing chambers or available as complete assembly with high quality Rosemount chambers

Robust design reduces costs and increases safety

- Leakage prevention and reliable performance under challenging conditions
- Detachable transmitter head allows tank to remain sealed
- Dual Compartment housing separates cable connections and electronics

Easy installation and plant integration

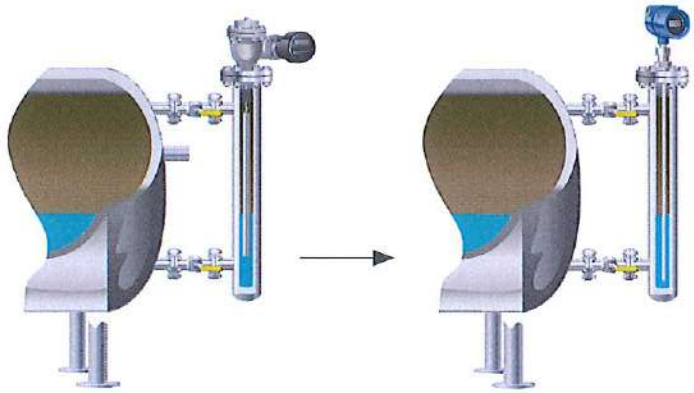
- Seamless system integration with HART, Modbus®, or IEC 62591 (*Wireless*HART®) with the THUM adapter
- Allows for easy swap by matching existing tank connections
- Cut-to-fit probes
- Long lengths of rigid probes for robust measurements becomes cost-effective and practical to ship, store and install with the segmented probe option (code 4S)
- Pre-configured or user-friendly configuration with wizard, autoconnect, dielectric calculator, and on-line help
- MultiVariable – measures simultaneously level and interface, resulting in fewer process penetrations and reduces installation and wiring cost

Minimized maintenance reduces cost

- No mechanical moving parts that require maintenance
- User-friendly software provides easy on-line troubleshooting with echo curve tool and logging
- Adjustments without opening tank
- No re-calibration or compensation needed due to changing process conditions

Easy replacement of old technology and best fit for chambers

- Less need for maintenance reduces costs and improves measurement availability
- Reliable measurement, independent of density, turbulence, and vibrations
- Unaffected by the mechanical configuration of the chamber
- Wide range of options to find the best fit in existing chamber or a complete assembly with Rosemount CMB high quality chambers



Access information when you need it with asset tags

Newly shipped devices include a unique QR code asset tag that enables you to access serialized information directly from the device. With this capability, you can:

- Access device drawings, diagrams, technical documentation, and troubleshooting information in your MyEmerson account
- Improve mean time to repair and maintain efficiency
- Ensure confidence that you have located the correct device
- Eliminate the time-consuming process of locating and transcribing nameplates to view asset information

Ordering information

Online product configurator

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Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in Figure 2.

Figure 2: Model Code Example

3302 H S 1 S 1 V 4B E 10 27 RA I7 (1) M5 B2 WR3 (2)

1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

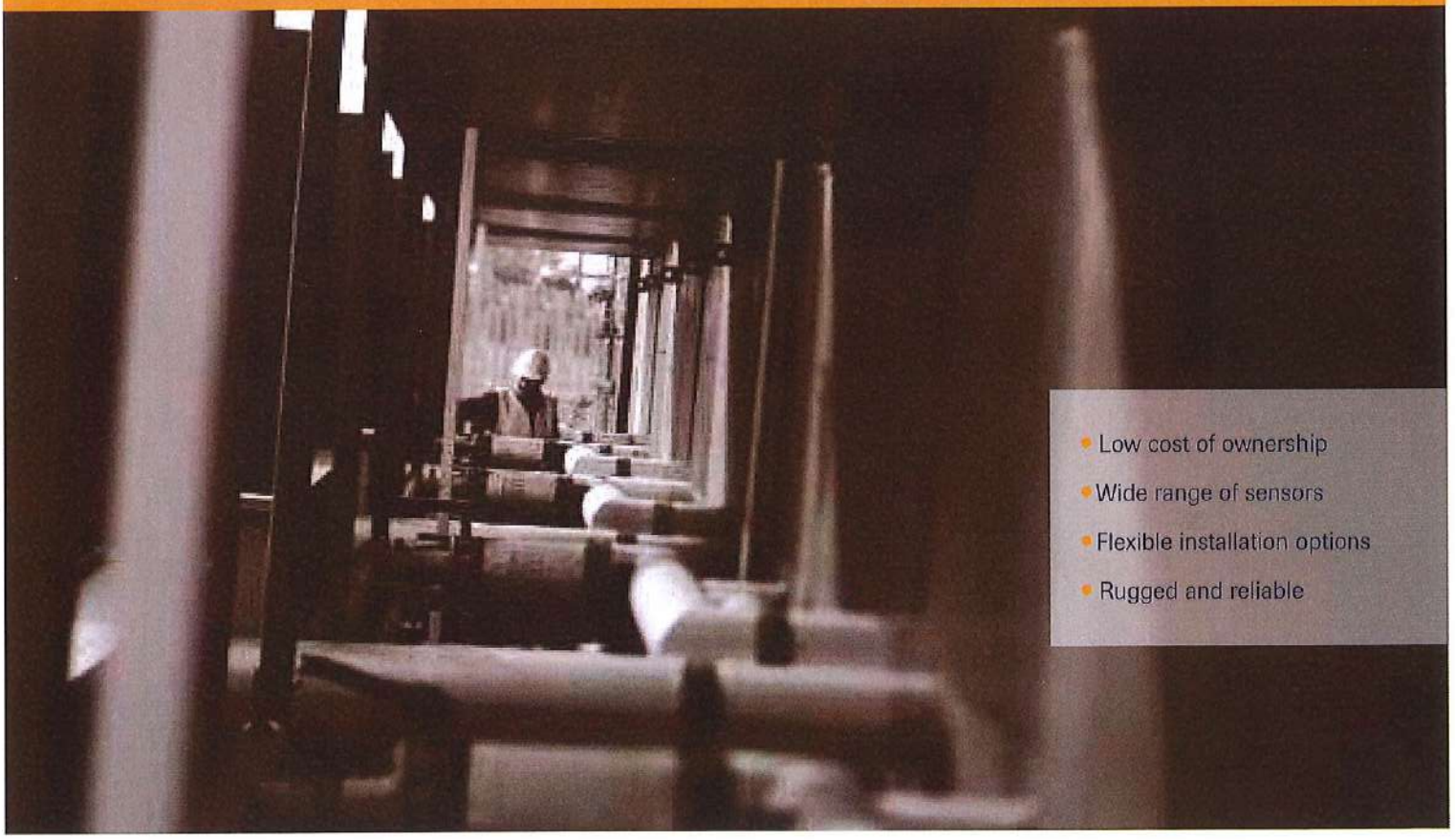
Optimizing lead time

The starred offerings (★) represent the most common options and should be selected for the fastest delivery times. The non-starred offerings are subject to additional delivery lead time.

CROWCON
Detecting Gas Saving Lives

Xgard

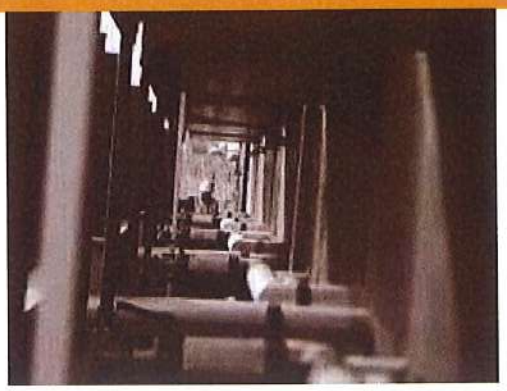
Fixed Gas Detectors



- Low cost of ownership
- Wide range of sensors
- Flexible installation options
- Rugged and reliable

Xgard

Fixed Gas Detectors



When lives and property are at risk and you need gas detection equipment that is totally reliable, you need Crowcon. For over 40 years Crowcon has been developing and manufacturing high quality products with a reputation for reliability and technical innovation.

The Xgard range of gas detectors has been specifically designed to meet your requirements. The dangers presented by toxic and flammable gases as well as oxygen deficiency vary with each application.

Choose the gas detector for your needs

Xgard offers three different sensor concepts so you can choose exactly what you need for your site. Xgard is available in flameproof, intrinsically safe, or safe area formats for use in all environments, whatever the classification.

Low cost of ownership

- Xgard detectors are designed for easy installation and maintenance to keep costs down.
- The three junction box options are all designed to make replacement of sensors and sinters extremely simple. Spare sensors simply plug-in.
- Many spare parts are common to all Xgard models, which keeps spares holding requirements to a minimum.

Wide range of sensors

- Poison resistant pellistors, for all flammable detection needs including hydrocarbons, hydrogen, ammonia, jet fuel, leaded petrol and vapours containing halogens.
- Electrochemical sensors are used to detect a vast range of toxic gases and oxygen.
- Thermal conductivity sensors are available to monitor % volume concentrations of gases.

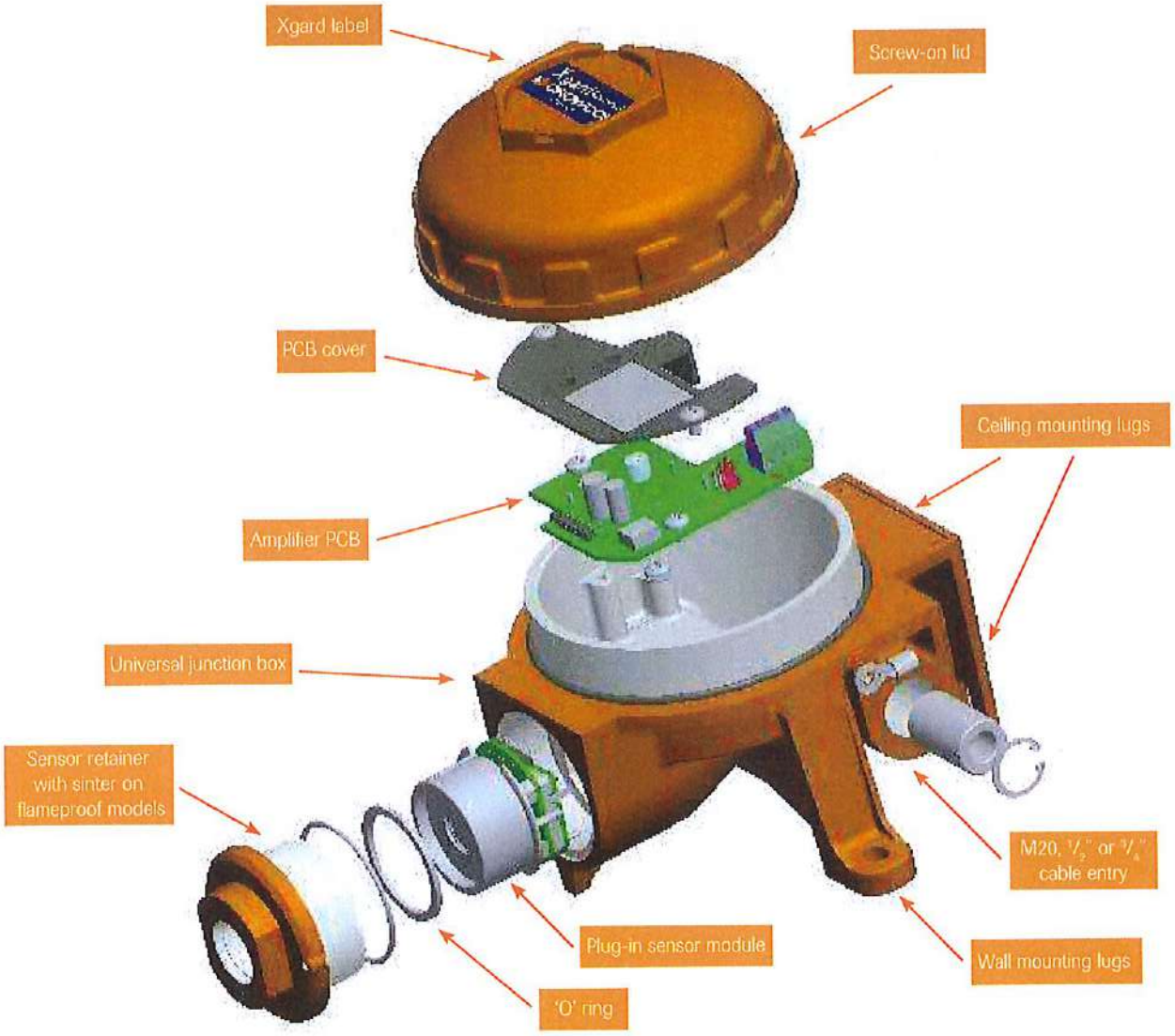
Flexible installation options

- Xgard is designed for either wall or ceiling mounting without the need for additional brackets.
- Xgard can accommodate M20, 1/2" NPT or 3/4" NPT cable glands to suit all site requirements.
- High temperature models are available for hot environments (up to 150°c).
- Accessories are available for duct mounting and sampling applications as well as remote gassing for simple sensor checking.

Rugged and reliable

- Xgard is manufactured using a choice of three materials: glass reinforced nylon, highly durable aluminium with a tough polyester coating, or 316 stainless steel for ultimate corrosion resistance. All versions are designed to operate even in the harshest conditions.
- Spray deflectors and weatherproof caps are available for use in areas subject to regular wash-downs, or offshore environments.
- All models have been validated to the functional safety standard IEC 61508 (SIL 1 to SIL 3).

Please see the back page for full technical specifications.



Accessories

(all accessories require an Accessory Adaptor to be fitted to the Xgard junction box)

Spray Deflector

For outdoor use and protection against wash-down operations.

Sun Shield

For use where a detector is installed in direct sunlight

Weatherproof Cap

For use in very wet conditions, such as offshore installations and ships.

Collector Cone

For aiding detection of gases which are lighter than air, such as hydrogen and methane.

Flow Adaptor

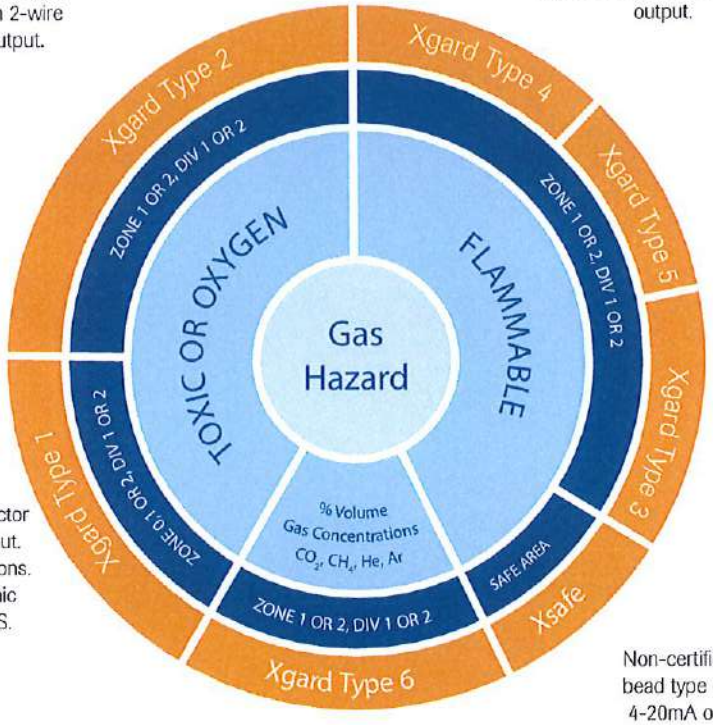
For use in sampling applications.

Accessory Adaptor

For fitting accessories to Xgard.

Detector Selector

The Xgard range offers a comprehensive selection of fixed point gas detectors that meet the diverse requirements for flammable and toxic gas detection and oxygen monitoring in industries throughout the world. This diagram is designed to help you choose the correct Xgard detector to suit your needs.



Flameproof electrochemical type detector with 2-wire 4-20mA output.

Flameproof high temperature (up to 150°C) catalytic bead type detector with mV bridge output.

Flameproof catalytic bead type detector with 3-wire 4-20mA output.

Flameproof catalytic bead type detector with 3-wire mV bridge output.

Intrinsically Safe electrochemical type detector with 2-wire 4-20mA output. Wide range of sensor options. A zener barrier or galvanic isolator is required for I.S. operation.

Non-certified low cost catalytic bead type detector with 3-wire 4-20mA or mV bridge output.

Flameproof thermal conductivity type detector with 3-wire 4-20mA output.

Ordering Requirements

The following code is designed to help in the selection of the correct detector. The product reference number should be compiled by inserting the appropriate integer in each box.

Detector	Type No. Code		Type No. Code	Enclosure Code		Cable Entry Code		Certification Code		Gas Type	Range
XGARD	Type 1	1		Standard*1	A	M20	M20	ATEX	AT	Abbreviated up	From selection
XSAFE	Type 2	2		Stainless Steel*2	S	½"NPT	½	UL	UL	to 8 characters	shown on table
	Type 3	3				¾"NPT	¾"*3				
	Type 4	4									
	Type 5	5									
	Type 6	6									
	XSAFE	XS	mV or mA								

*1: Xgard Type 1 ATEX certified detectors will be supplied in a glass-reinforced nylon enclosure as standard, or in a 316 stainless steel enclosure as an option. Xgard Type 1 UL certified detectors and all other Xgard Types will be supplied in aluminium as standard, or in a 316 stainless steel enclosure as an option.

*2: The stainless steel option is not available for Xsafe and Xgard Type 4.
Example product reference for an I.S. 0-25ppm H_2S detector with ATEX certification and M20 cable entry in a standard (nylon) junction box: XGARD/1/A/M20/AT/H2S/25.

*3: ¾"NPT cable entry available on the aluminium enclosure only.

Xgard gases and ranges:

	LTEL (ppm) LEL (% Vol)	STEL (ppm) UEL (% Vol)	Range Available: Type 1	Range Available: Type 2	Ranges Available: Type 3, 4, 5 & Xsafe	Range Available: Type 6
Acetylene (C_2H_2)	2.3	100	-	-	0- 100% LEL*	-
Ammonia (NH_3)	25 15	35 33.6	50, 100, 250, 500, 1000 ppm	-	0- 25% LEL*	-
Argon (Ar)	-	-	-	-	-	Contact Crowcon
Arsine (AsH_3)	0.05	-	1 ppm	-	-	-
Bromine (Br_2)	0.1	0.2	3 ppm	-		-
Butane (C_4H_{10})	1.4	9.3	-	-	0-100% LEL*	-
Carbon dioxide (CO_2)	5000 (0.5% Vol)	15000 (1.5% Vol)	-	-	-	Contact Crowcon
Carbon monoxide (CO)	30	200	50, 100, 200, 250, 500, 1000, 2000 ppm	50, 100, 200, 250, 500, 1000, 2000 ppm	-	-
Chlorine (Cl_2)	-	0.5	3, 5, 10, 20, 50, 100 ppm	-	-	-
Chlorine Dioxide (ClO_2)	0.1	0.3	1 ppm	-	-	-
Diborane (B_2H_6)	0.1	-	1 ppm	-	-	-
Ethane (C_2H_6)	2.4	15.5	-	-	0-100%* LEL	-
Ethylene (C_2H_4)	2.3	36	-	-	0-100%* LEL	-
Ethylene oxide (C_2H_4O)	5	-	10, 50, 100 ppm	-	-	-
Fluorine (F_2)	1	1	1 ppm	-	-	-
Germane (GeH_4)	0.2	0.6	2 ppm	-	-	-
Helium (He)	-	-	-	-	-	Contact Crowcon
Hydrogen (H_2)	4	77	200, 2000 ppm	200, 2000 ppm 100% LEL	0- 100%* LEL 50% LEL, 100% LEL	0-5%, 10%, 50% vv (in air) 0-20%, 25%, 30%, 50% vv (H_2 in N_2)
Hydrogen chloride (HCl)	1	5	10, 25 ppm	-	-	-
Hydrogen cyanide (HCN)	-	10	25 ppm	-	-	-
Hydrogen fluoride (HF)	1.8	3	10 ppm	-	-	-
Hydrogen sulphide (H_2S)	5	10	5, 10, 20, 25, 50, 100, 200, 250, 300, 1000 ppm	5, 10, 20, 25, 50, 100, 200 ppm	-	-
LPG	2	10	-	-	0-100% LEL	-
Methane (CH_4)	4.4	17	-	-	0-100% LEL	-
Nitric Oxide (NO)	5*1	5*1	25, 50, 100 ppm	-	-	-
Nitrogen dioxide (NO_2)	1*1	1*1	10, 50, 100 ppm	-	-	-
Ozone (O_3)	-	0.2	1ppm	-	-	-
Oxygen (O_2)	-	-	25% Vol	25% Vol	-	-
Pentane (C_5H_{12})	1.1 600ppm	8.7 1800ppm	-	-	0-100% LEL*	-
Petrol vapour	1.4	6	-	-	0- 100% LEL*	-
Phosgene ($COCl_2$)	0.02	0.06	1 ppm	-	-	-
Phosphine (PH_3)	0.1	0.2	1 ppm	-	-	-
Propane (C_3H_8)	1.7	10.9	-	-	0-100% LEL	-
Silane (SiH_4)	0.5	1	1 ppm	-	-	-
Sulphur Dioxide (SO_2)	1*1	1*1	10, 20, 50, 100, 250 ppm	-	-	-
Vinyl chloride (VCM) (CH_2= CHCl)	3.6 3	33 -	-	-	0-100% LEL*	-
Volatile organics (VO)*2	-	-	0- 100 ppm *2	-	-	-

Notes:
Other sensors and ranges may be available, please contact Crowcon.
*Ranges not available for Xsafe or Xgard Type 4
LTEL & STEL figures are derived from the UK HSE document: EH40 2011. Alternative thresholds may apply in countries outside of the UK
LEL figures derived from EN60079-20-1: 2010
*1 Current limits advised in the UK
*2 Nominal 0-100ppm range with Carbon Monoxide (CO). Contact Crowcon for a full list of gases that can be detected using this sensor

Xgard Specification:

	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Xsafe
Size	156 x 166 x 111mm (6.1 x 6.5 x 4.3 inches)			195 x 166 x 111mm (7.6 x 6.5 x 4.3 inches)	156 x 166 x 111mm (6.1 x 6.5 x 4.3 inches)		
Weight	Nylon: 0.5kg (1.1 lbs) Alloy: 1kg (2.2 lbs) 316 S/S: 3.1kg (6.8 lbs)	Aluminium: 1kg (2.2 lbs) Stainless steel: 3.1kg (6.8lbs)		1.5kg (3.3 lbs)	Aluminium: 1kg (2.2 lbs) Stainless steel: 3.1kg (6.8lbs)		1kg (2.2 lbs)
Enclosure material	ATEX certified: Glass reinforced nylon or 316 S/S UL Certified: Aluminium or 316 S/S	Aluminium or 316 Stainless Steel		Aluminium	Aluminium or 316 Stainless Steel		Aluminium
Ingress protection	IP65			IP54	IP65		
Cable entries	1 x M20, ½ "NPT or ¾ NPT* on right-side						
Terminations	0.5 to 2.5mm²						
Sensor types	Electrochemical		Catalytic bead	316 S/S sensor housing with catalytic beads	Catalytic bead	Thermal conductivity	Catalytic bead
Operating temperature	-40 to +50°C (-40 to 122°F) (Sensor dependant)	-20 to +50°C (-4 to 122°F) (Sensor dependant)	-40 to +80°C (-40 to 176°F)	-20 to +150°C (-4 to 302°F)	-40 to +55°C (-40 to 131°F)	+10 to +55°C (50 to 301°F)	mV: -40 to +80°C (-40 to 176°F) mA: -40 to +55°C (-40 to 131°F)
Humidity	15-90% RH non-condensing		0-99% RH non-condensing			0-90% RH	0-99% RH
Repeatability Zero drift	<2% FSD (Typical) <2% FSD per Month (Typical)						
Response time	T90 <15s Oxygen T90 <30s to 120s Toxic (sensor dependant)		T90 <15s (Typical)				
Operating voltage	8- 30V dc		2.0V dc +/- 0.1V (Typical)		10-30V dc		mA: 10- 30V dc mV: 2.0Vdc
Power requirements	24mA maximum		300mA (Typical)		50mA at 24V dc 1.2W		mA: 50mA at 24V dc 1.2W mV: 300mA (Typical)
Electrical output	2-wire 4-20mA (current sink)		3- wire mV bridge Typical signal: 12-15 mV/ %LEL CH4	3- wire mV bridge Typical signal: >10 mV/ %LEL CH4	3- wire 4-20mA (current sink or source)		mA: 3- wire 4-20mA (current sink or source) mV: 3- wire mV bridge Typical signal: 12-15mV/ %LEL CH4
Approvals	ATEX: II 1 G Exia IIC T4 Ga (Tamb -40 to +55°C) UL/cUL: Class I, Div. 1 Groups A, B, C, D IECEx GOST-R	ATEX: II 2 GD Exd IIC T6 Gb (Tamb -40 to +50°C) UL: Class I, Div. 1 Groups B, C, D IECEx GOST-R	ATEX: II 2 GD Exd IIC T4 Gb (Tamb -40 to +80°C) Exd IIC T6 Gb (Tamb -40 to +50°C) Ex tb IIIC T180°c Db UL: Class I, Div. 1 Groups B, C, D IECEx GOST-R	ATEX: II 2 GD Exd IIC T3 Gb (Tamb -40 to +150°C)	ATEX: II 2 GD Exd IIC T6 Gb (Tamp -40 to +50°C) Exd IIC T4 Gb (Tamb -40 to +80°C) Ex tb IIIC T180°c Db UL: Class 1, Div. 1 Groups B, C, D IECEx GOST-R		Not certified for use in hazardous environment.
EMC compliance	EN 50270 FCC Part 15 ICES- 003						

* 3/4" cable entry only available on aluminium junction boxes

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CROWCON
Detecting Gas Saving Lives

P05005GB Issue 11 January 2014

FC460 Series Detectors

FC460 Series Detectors

Who this Leaflet is for

This leaflet is aimed at suitably qualified technicians experienced in the design and specification of fire detection and alarm systems, who have also received training.

What this Leaflet Covers

This leaflet is for use when designing a fire detection system, or replacing detectors in an existing system.

Specifications are provided for determining detector suitability. Information is provided on features that are unique to the series.

What this Leaflet does not Cover

This leaflet does not provide the following:

- Information on detection functionality or guidance on detector type choice. This information is provided in the Detectors Product Application & Design Information document.
- Installation information. This is because the detectors simply dock to detector bases, and installation details are provided in the associated base documentation.

Introduction

The detectors are for use in an addressable system, where a number of detectors are placed in key areas around the building.

For a more detailed introduction, refer to the Product Application & Design Information document.

The next few sections provide information common to all the detector variants in the series.

Specifications

Dimensions

- Height: 42 mm, diameter: 108 mm

Fig. 1: Dimensions

Material

- Plastic: Flame Retardant ABS

Electrical characteristics

- The detectors are designed for use in an addressable system which uses the FireClass Digital Protocol.

Temperature Ranges

The temperature ranges are shown in Table 1.

Detector	Operating Temperature (°C)	Storage Temperature (°C)	Relative Humidity
FC460PH	-25 °C to +70	-40 °C to +80	95 % (non-condensing)
FC460P	-25 °C to +70	-40 °C to +80	95 % (non-condensing)
FC460H	-25 °C to +70 short-term: to +90	-40 °C to +80	95 % (non-condensing)
FC460PC	-10 °C to +55	-20 °C to +55	95 % (non-condensing)

Table 1: Temperature Ranges

CE

0832

Control Equipment Ltd.
Hillcrest Business Park
Dudley, West Midlands
DY2 9AP UK

12

0832-CPD-1883

EN54-7

Digital addressable detector for use in fire detection and alarm systems in buildings

FC460P

CE

0832

Control Equipment Ltd.
Hillcrest Business Park
Dudley, West Midlands
DY2 9AP UK

12

0832-CPD-1884

EN54-5 and EN54-7

Digital addressable detector for use in fire detection and alarm systems in buildings

FC460PH

- The latest LED technology with a high luminous efficacy and a long service life
- Extremely high luminaire efficacy
- Luminous flux after 100,000 h still 90% of the starting luminous flux
- Optionally with DALI for controlling and monitoring the luminaire
- Optionally addressable for direct actuation of a common battery system

WebCode 6002D

The linear luminaire with Series 6002/4 LED is ideal for lighting surfaces at a mounting height of up to 10 m. It can also be used to illuminate equipment and objects, both inside and outside. The pole mounting sleeve accessory can be used to easily mount the luminaire on poles. Optionally, the luminaire can be equipped with addressable equipment. It can be used to control and monitor the luminaire for the common battery systems.

	IECEx / ATEX					
Zone	0	1	2	20	21	22
Installation in		•	•		•	•

Selection Table

Size Translucent cover Light distribution Lamp wattage Luminous flux Luminaire efficacy			2 Clear 120°x120° with diffusing glass 22 W 2910 lm 132 lm/W						
Product variant	Drilled holes	Disconnection of the luminaire	Light colour	Threaded plate	Cable glands and entries	Stopping plugs	Product Type	Art. No.	Weight kg
Interfaces DALI	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4128-0110-172-1110-11-8500	272391	4.450
standard	3 x M20	No	5000K - neutral white	2x SS430 stainless steel	Can be ordered as accessories	Can be ordered as accessories	6002/4128-0100-152-2220-22-8500	267067 ▲	4.400
	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4128-0100-152-1110-11-8500	267058 ▲	4.450
with address module	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4128-0130-152-1110-11-8500	275740	4.500
Size Translucent cover Light distribution Lamp wattage Luminous flux Luminaire efficacy			2 Translucent 120°x120° 22 W 2910 lm 132 lm/W						
Product variant	Drilled holes	Disconnection of the luminaire	Light colour	Threaded plate	Cable glands and entries	Stopping plugs	Product Type	Art. No.	Weight kg
standard	3 x M20	No	5000K - neutral white	2x SS430 stainless steel	Can be ordered as accessories	Can be ordered as accessories	6002/4124-0100-152-2220-22-850S	285108	4.350
	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4124-0100-152-1110-11-850S	285105 ▲	4.400

▲ Core programme – stock item, dispatch within 7 days | ■ Core programme – item available at reduced lead times on request

EXLUX Linear Luminaire with LED

Series 6002/4

E2

Selection Table

Size			4						
Translucent cover			Clear						
Light distribution			120°x120° with diffusing glass						
Lamp wattage			42 W						
Luminous flux			5810 lm						
Luminaire efficacy			138 lm/W						
Product variant	Drilled holes	Disconnection of the luminaire	Light colour	Threaded plate	Cable glands and entries	Stopping plugs	Product Type	Art. No.	Weight kg
Interfaces DALI	3 x M20	No	5000K - neutral white	2x SS430 stainless steel	Can be ordered as accessories	Can be ordered as accessories	6002/4148-0110-172-2220-22-8500	274963	6.900
	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4148-0110-172-1110-11-8500	267087	6.900
standard	3 x M20	No	5000K - neutral white	2x SS430 stainless steel	Can be ordered as accessories	Can be ordered as accessories	6002/4148-0100-152-2220-22-8500	267077 ▲	6.900
	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4148-0100-152-1110-11-8500	267074 ▲	6.900
with address module	3 x M20	No	5000K - neutral white	2x SS430 stainless steel	Can be ordered as accessories	Can be ordered as accessories	6002/4148-0130-152-2220-22-8500	277241	6.900
	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4148-0130-152-1110-11-8500	275741	6.900
Size			4						
Translucent cover			Translucent						
Light distribution			120°x120°						
Lamp wattage			42 W						
Luminous flux			5180 lm						
Luminaire efficacy			138 lm/W						
Product variant	Drilled holes	Disconnection of the luminaire	Light colour	Threaded plate	Cable glands and entries	Stopping plugs	Product Type	Art. No.	Weight kg
standard	3 x M20	No	5000K - neutral white	2x SS430 stainless steel	Can be ordered as accessories	Can be ordered as accessories	6002/4144-0100-152-2220-22-850S	285109	6.850
Size			4						
Translucent cover			Translucent						
Light distribution			120°x120°						
Lamp wattage			42 W						
Luminous flux			5810 lm						
Luminaire efficacy			138 lm/W						
Product variant	Drilled holes	Disconnection of the luminaire	Light colour	Threaded plate	Cable glands and entries	Stopping plugs	Product Type	Art. No.	Weight kg
standard	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4144-0100-152-1110-11-850S	285106 ▲	6.850
Size			6						
Translucent cover			Clear						
Light distribution			120°x120° with diffusing glass						
Lamp wattage			50 W						
Luminous flux			6960 lm						
Luminaire efficacy			139 lm/W						
Product variant	Drilled holes	Disconnection of the luminaire	Light colour	Threaded plate	Cable glands and entries	Stopping plugs	Product Type	Art. No.	Weight kg
standard	3 x M20	No	5000K - neutral white	2x SS430 stainless steel	Can be ordered as accessories	Can be ordered as accessories	6002/4168-0200-152-2220-22-8500	278346	8.000
	3 x M25	No	5000K - neutral white	2x plastic	2 x M25 Ø 7 – 17 mm	2 x M25 x 1.5	6002/4168-0200-152-1110-11-8500	278349 ▲	8.000

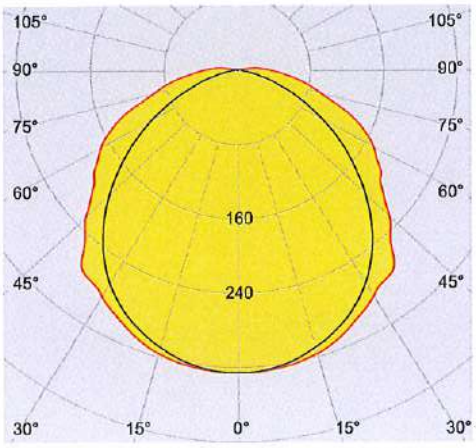
Variants with 2 x threaded plate plastic and 3 x drilled holes M25:
Cable glands 2 x M25 Ø 7 -17 mm and 2 x stopping plugs M 25 x 1,5 are included loose with the product (installation required). Threaded plate included.
Variants with 2 x threaded plate stainless steel SS430 and 3 x drilled holes M20:
Cable glands and stopping plugs can be ordered as accessories. Threaded plate included.

The light fittings are supplied without mounting material.

Technical Data		
Variant	**standard / product variant "-"**	**with address module**
Explosion Protection		
IECEx gas explosion protection	Ex db eb ib mb op is IIC T4 Gb	Ex db eb ib mb op is IIC T4 Gb
IECEx dust explosion protection	Ex tb op is IIIC T100 °C Db	Ex tb op is IIIC T100 °C Db
ATEX gas explosion protection	⟨Ex⟩ II 2 G Ex db eb ib mb op is IIC T4 Gb	⟨Ex⟩ II 2 G Ex db eb ib mb op is IIC T4 Gb
ATEX dust explosion protection	⟨Ex⟩ II 2 D Ex tb op is IIIC T100 °C Db	⟨Ex⟩ II 2 D Ex tb op is IIIC T100 °C Db
Certificates	ATEX (IBE), IECEx (IBE)	ATEX (IBE), IECEx (IBE)
Ship approval	DNV GL	DNV GL
Electrical Data		
Rated operational voltage AC	100 – 240 V	220 – 240 V
Rated operational voltage DC	110 – 250 V	194 – 250 V
Frequency range	50 – 60 Hz	50 Hz
Ambient Conditions		
Ambient temperature	-40 °C ... +50 °C Note: Through wiring Max. 3x16 A -40 °C ... +60 °C Note: Through wiring 2 Max. 3x10 A	-40 °C ... +50 °C Note: Through wiring Max. 3x16 A -40 °C ... +60 °C Note: Through wiring 2 Max. 3x10 A
Lighting Data		
Number of lamps	1	1
Lamp	LED	LED
Colour rendering	≥ 80	≥ 80
Colour temperature	5000 K	5000 K
Mechanical Data		
Impact strength (IEC 62262)	IK10	IK10
IP degree of protection (IEC 60598)	IP66/IP67	IP66/IP67
Enclosure colour	Light grey (RAL 7035)	Light grey (RAL 7035)
Enclosure material	Polyester resin, Glass fibre reinforced	Polyester resin, Glass fibre reinforced
Diffuser	Without diffuser	With diffuser
Sealing material	Silicone	Silicone
Max solid connection terminals	6 mm²	6 mm²
Max. finely stranded connection terminals	4 mm²	4 mm²
Type of connection cable	Finely stranded Solid	Finely stranded Solid
Notes	Connection terminals: Spring clamp terminal (2 free clamping units per pole)	
Components		
Ballast	6045/211-120-10	6045/212-122-10
Through wiring	With 5 conductors 2.5 mm²	With 5 conductors 2.5 mm²
Cable entry material	Polyamide, black	Polyamide, black
Stopping plug material	Polyamide, black	Polyamide, black

E2

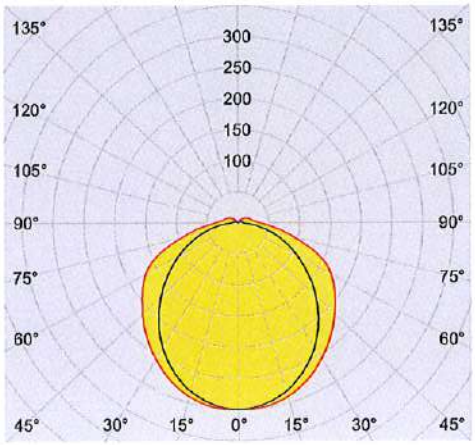
Light Distribution Curves – Subject to Alterations



cd/klm 100%

—C0 - C180 —C90 - C270

typical with diffusor, clear translucent cover

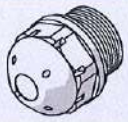
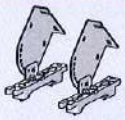
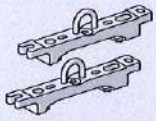
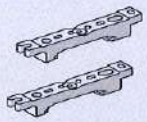
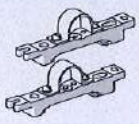


cd/klm 100%

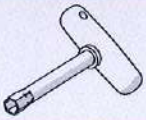
—C0 - C180 —C90 - C270

typical without diffusor, diffuse translucent cover

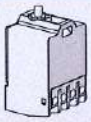
Accessories

Figure	Description	Art. No.	Weight kg
Breather			
	Thread: M25 x 1.5; 1 pc; for installation in lights; in moulded material; without counter nut	138573 ▲	0.010
	Thread: M25 x 1.5; 20 pc; for installation in lights; in moulded material; without counter nut	138576	0.200
Ceiling and wall mounting bracket			
	mounted on a mounting rail for a variable mounting distance; Material: stainless steel; Lamp can be swiveled in steps of 15°; 1 pair	222627 ▲	1.200
Cover			
	for luminaire size 2 (diffuse), the visibility of the indicator LED may be restricted when used on a single supplied emergency luminaire	276669	1.000
	for luminaire size 4 (diffuse), the visibility of the indicator LED may be restricted when used on a single supplied emergency luminaire	276670	1.200
Mounting bracket			
	mounting clamp mounted on a mounting rail for a variable mounting distance; 1 pair	222456 ▲	0.400
Mounting rail			
	for a variable mounting distance; 1 pair	222826 ▲	0.350
Pipe clamp			
	R 1 1/2"; with mounting rail for a variable mounting distance; Material: stainless steel; 1 pair	222459 ▲	0.700
	R 1 1/4"; with mounting rail for a variable mounting distance; Material: stainless steel; 1 pair	222458 ▲	0.700
	R 2"; with mounting rail for a variable mounting distance; Material: stainless steel; 1 pair	222460 ▲	0.750

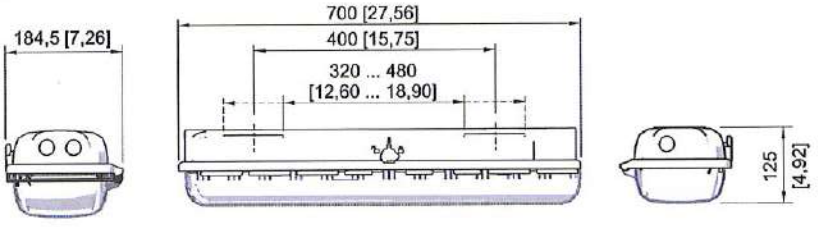
Accessories

Figure	Description	Art. No.	Weight kg
Pole mounting sleeve			
	for the subsequent mounting on lights size 2 and size 4, completely with assembly parts (for pipe diameter 42 mm)	227512 ▲	3.200
Ring bolt			
	M8, direct mounting in insert nuts; 1 pair	115736 ▲	0.115
Socket key			
	M8 / wrench size 13; to open/close the central locking	222430 ▲	0.110

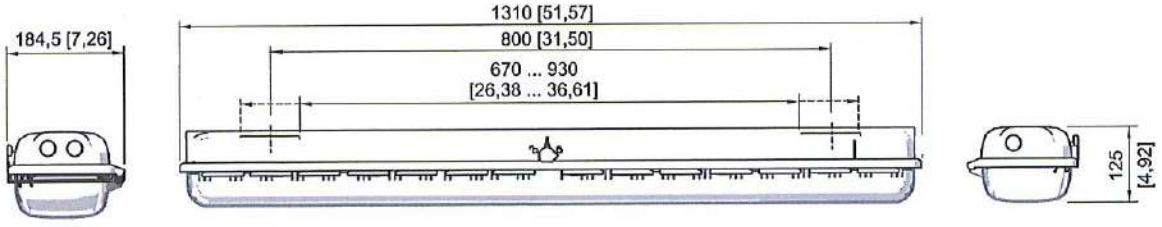
Spare Parts

Figure	Description	Art. No.	Weight kg
Contact element			
	8080/1-3-L 2 NC contact element	132527 ■	0.026
Covar			
	for luminaire size 4	222428	1.149
	for luminaire size 2	222427	0.639

Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations

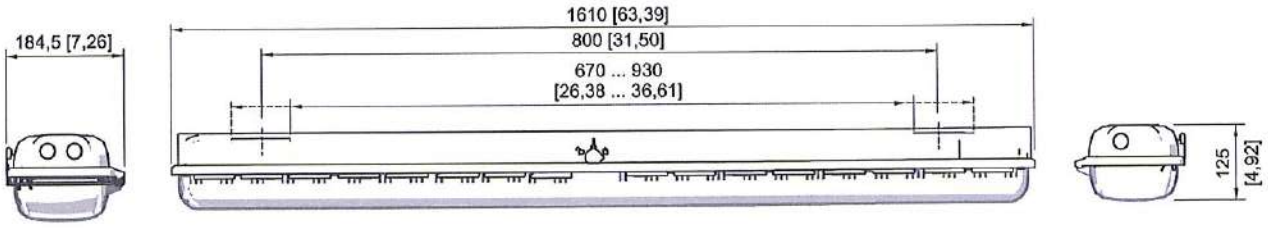


Size 2

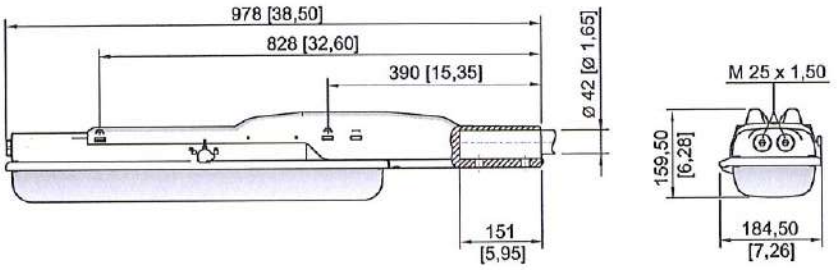


Size 4

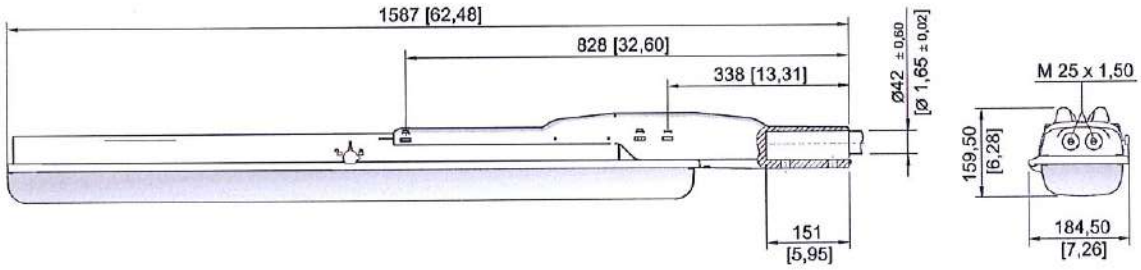
E2



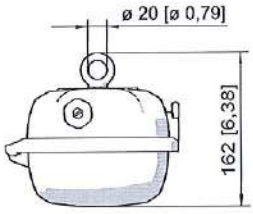
Size 6



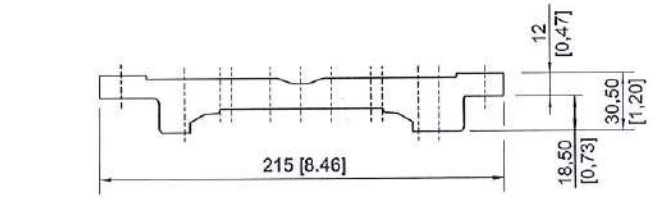
Size 2

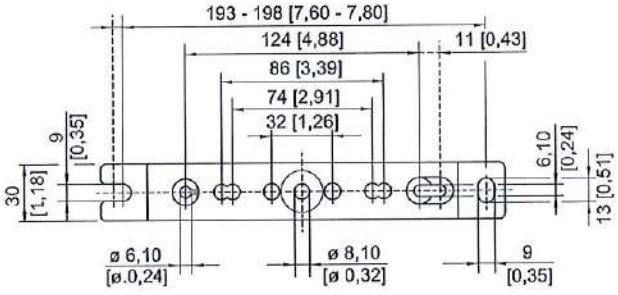


Size 4

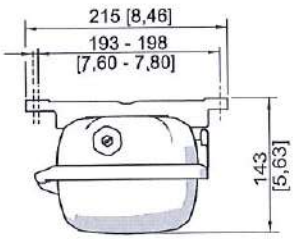


Ring bolt fitted in insert nut of the luminaire

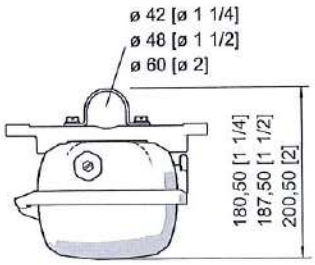




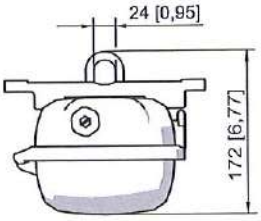
Mounting rail



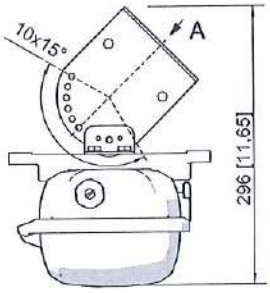
Mounting rail



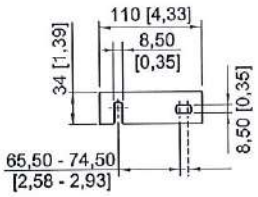
Pipe clamp fitted in mounting rail



Mounting bracket fitted in mounting rail



A



Wall mounting bracket fitted in mounting rail

Inrush current

Ipeak = 51 A; Delta t = 127 µs

Maximum number of luminaires per miniature circuit breaker:

Type	10 A	16 A	20 A	25 A
B	12	19	24	31
C	20	33	41	51
K	41	66	82	103

typical value for 1-pole miniature circuit breaker at +25 °C and nominal voltage 230 V AC; the exact number depends on the miniature circuit breaker used

FC421CP-I Outdoor Weatherproof Resettable Callpoint

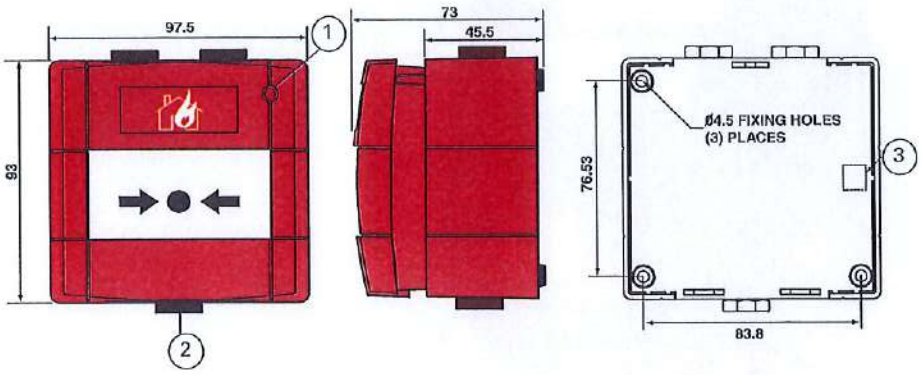


Fig. 1: FC421CP-I Outdoor Weatherproof Resettable Callpoint - Overall and Fixing Dimensions
1– Short Circuit Isolator Activation (Yellow) and Alarm Indicator LED (Red)
2– Test/Release Key Access
3– Earth Continuity Terminal (Internal)

Introduction

The FC421CP-I Weatherproof Addressable Resettable Callpoint is an outdoor manual callpoint.

The callpoint is designed to monitor and signal the condition of a switch contact that is operated by activating the resettable element.

The FC421CP-I is fitted onto a standard KAC weatherproof backbox, which is supplied with the callpoint.

The FC421CP-I has an integral short-circuit isolator for monitoring the field wiring.

The FC421CP-I callpoint meets the requirements of EN54 Pt. 11 and EN54 Pt. 17.

Technical Specification

Table 1 shows the technical specification information.

Parameter	Value
System Compatibility	Use only with FIRECLASS Fire Alarm Controllers
Environment	Outdoor applications
Operating Temperature	-25 to +70 °C
Storage Temperature	-30 to +70 °C
Operating Humidity	Up to 95 % non-condensing
Dimensions (HWD)	93 x 97.5 x 73 mm
Weight	240 g
IP Rating	IP67

Table 1: Technical Specifications

Terminals

Table 2 shows the terminal information.

Description	Marking	Comment
MX Loop Interface	1	Loop+ IN
	2	Loop- Left
	3	Loop+ OUT
	4	Loop- Right

Table 2: Terminals

Address Programming

The FC421CP-I has a default factory set address of 255.

The FC421CP-I is programmed with the address prior to installation using an address programming tool. The associated ancillary programming lead plugs into the programming port (see items 1 and 2 in Fig 2). Refer to Fig 2 for proper orientation.

NOTICE

Ensure that the pins of the ancillary programming lead are inserted completely into the lower row of the programming port (see item 7 in Fig 2) for effective communication with the Address programming tool.

Site Drawings

Once the address has been programmed, take note of the device location and address number, to include on site drawings.

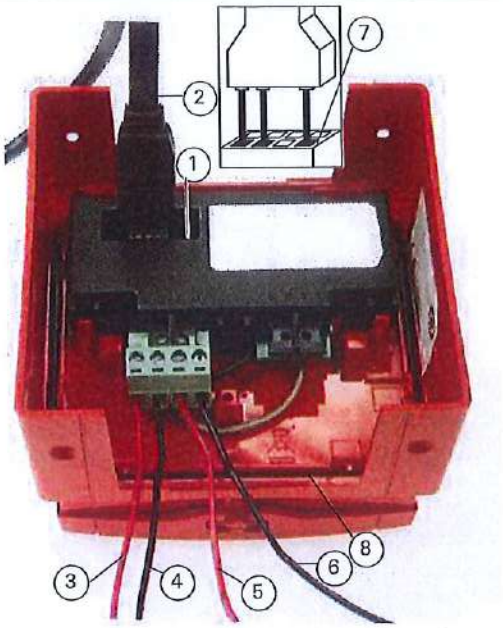


Fig. 2: FC421CP-I Rear View and Wiring Information
1– Ancillary Programming Port
2– Ancillary Programming Lead
3– Connected to Loop+ IN
4– Connected to Loop-Left
5– Connected to Loop+ Out
6– Connected to Loop-Right
7– Programming Lead Orientation
8– Gasket

Mounting & Cabling

How to mount the FC421CP-I with earthing plate fitted

1 Mount the backbox to a suitably flat surface in the required location, using the three fixing holes and screws provided in the installation kit.

NOTICE

Ensure that the cable entry holes are in the vertical plane. The backbox can be mounted with either the single or the double entry holes at the top.

2 Fit the appropriate cable glands into the 20 mm diameter threaded holes as required.

Spare Washers

Use only the supplied spare washer(s) to fit the respective cable gland(s) or hole stopper(s).

The 2 hole stoppers with plastic washers are provided for use where cable glands are not required.

3 Connection to the FC421CP-I is made via the 4 way terminal connector as shown in Fig. 2, ensuring correct polarity.

Each terminal can accommodate a conductor of up to 2.5 mm^2.

CAUTION

Ensure that the backbox's cable entry holes are not expanded to accommodate cable glands wider than 20 mm in diameter. It must not be subjected to stress by the cable or conduit.

Ensure that all the cable entries and unused entry points are securely sealed against water and moisture ingress.

Sealant

It is recommended to use Loctite 5331 as sealant.

NOTICE

Ensure that the gasket is correctly seated in the channel on the rear of the cover. The gasket should be replaced if damaged.

4 Place the callpoint squarely over the backbox and carefully push the callpoint until the locating clips have engaged.

Use the four fixing screws to lock the callpoint into place.

5 Select all cables in accordance with local standards,

6 Couplers are to be used with MICC cable.

Earthing

An Earth Continuity Terminal is situated in the rear of the backbox. This is designed to accommodate 2 conductors of up to 2.5 mm^2.

An earthing plate is provided for continuity of metal conduits. This must be placed behind the backbox prior to fixing the box to the wall.

If the earthing plate is fitted, fit the 3 spare washers (supplied with each call point) between the metal earth continuity strap and the call point backbox.

WARNING

While installing the FC421CP-I:

- **Do not overtighten the fixing screws**
- **Avoid using lubricants, cleaning solvents or petroleum based products.**

Wiring Notes

- There are no user-required settings (such as switches or headers) on the FC421CP-I.
- All wiring must comply with local installation regulations and local fire system design requirements.
- All conductors to be free of earths. For typical wiring configuration see Fig 2.

Call Point Removal

How to remove the FC421CP-I

1 Remove the four fixing screws used to lock the callpoint to the backbox.

2 Place the edge of a large flat bladed screwdriver into the slot between the callpoint cover and the backbox (see item 1 in Fig 3).

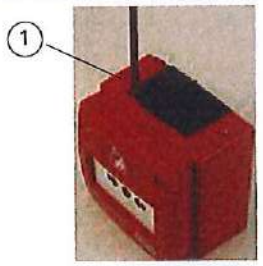


Fig. 3: FC421CP-I Removal
1– Screwdriver inserted into slot

3 Gently twist until the latches are disengaged.
4 Pull the cover away from the backbox.

Ordering Information

Component	Ordering Numbers
FC421CP-I Outdoor CP with isolator	514.800.806

Table 3: Ordering Information

CPR Information

CE
0832

Control Equipment Ltd
Hillcrest Business Park
Cinderbank Dudley
West Midlands DY2 9AP
UK
14
DoP-2014-2012

EN 54-11 and EN 54-17
Manual callpoint with Short-Circuit Isolator for fire detection & fire alarm systems for buildings
Type A, Indoor
FC421CP-I

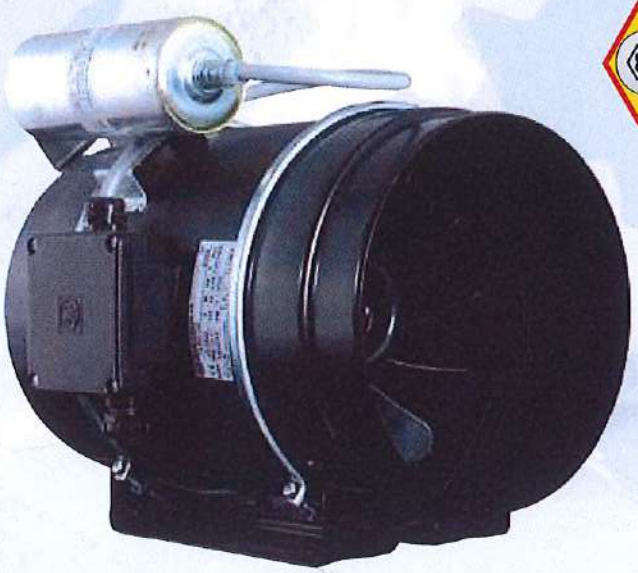
CE
0832

Essential Characteristics
EN54-11
Nominal activation conditions / Sensitivity and Performance under fire conditions: Pass
EN54-17
Performance under fire conditions:Pass
EN54-11 and EN54-17
Operational reliability: Pass
Durability of operational reliability temperature resistance: Pass
Durability of operational reliability; vibration resistance: Pass
Durability of operational reliability; humidity resistance: Pass
Durability of operational reliability; corrosion resistance: Pass
Durability of operational reliability; electrical stability: Pass

FIRECLASS

IN-LINE MIXED FLOW DUCT EXPLOSION PROOF FANS

TD ATEX



Low profile in-line mixed flow duct explosion proof fans, **specially designed for the extraction of potentially hazardous and explosive gases,** manufactured from sheet steel protected with black polyester paint coating, detachable fan unit without demounting duct connections.
Working temperature from -20 to +40°C.

Motors
Single phase 230V-50Hz.
IP44, Class B.

Explosion proof versions in accordance to ATEX 94/9/CE Directive.

For model 800:
- **Increased safety Ⓔx II2G EExeIIT3**
  EC nr. LOM 08ATEX2052 X Supplement 2.

For models 1100 and 1200:
- **Increased safety Ⓔx II2G EExeIIT3 Gb**
  EC nr. LOM 11ATEX2021 X Supplement 1.

Impeller helico

Efficient performance impeller helico

External terminal box and ATEX capacitor

External terminal box, IP55, **easy access, fireproof plastic V0**

Earth connection

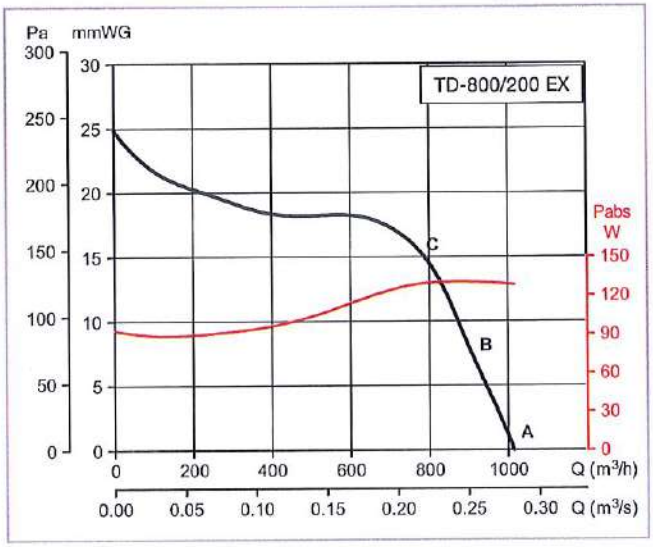
Technical characteristics

Model	Speed (r.p.m.)	Maximum absorbed power (W)	Maximum absorbed current (A)	Airflow at free discharge (m^3/h)	Operating temperature (°C)	Sound pressure level* (dB(A))			Ø Duct (mm)	Weight (Kg)
						Inlet	Radiated	Outlet		
TD-800/200 EX	2450	130	0,54	1020	-20/+40	53	43	55	200	5
TD-1100/250 EX	2630	197	0,81	1130	-20/+40	59	46	65	250	20
TD-1200/315 EX	2600	170	0,71	1320	-20/+40	56	44	59	315	25

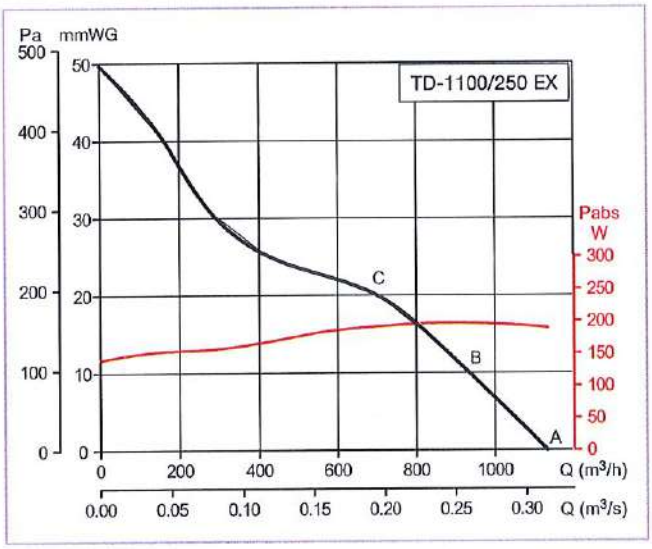
* Radiated sound pressure level measured at 3 m in free field conditions with rigid ducts at the inlet and at the outlet, at point "B" of the curve.

Performance curves

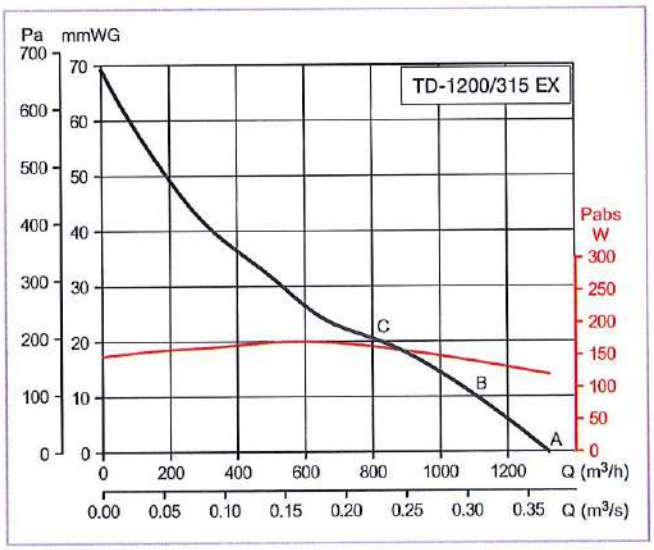
- Q = Air volume in, m^3/h and m^3/s.
- Ps = Static pressure in mmWG and Pa.
- Dry air at 20°C and 760 mmHg.
- Performance data in accordance with ISO 5801 and AMCA 210-99 Standards.



TD-800/200 EX		63	125	250	500	1000	2000	4000	8000	LwA
Inlet	A	27	43	53	61	69	69	65	56	**73**
	B	29	43	55	62	69	70	66	56	**74**
	C	39	49	69	71	74	70	63	55	**78**
Outlet	A	50	50	53	64	69	71	66	56	**74**
	B	44	45	54	66	70	71	67	57	**75**
	C	39	48	68	72	75	71	64	55	**78**
Radiated	A	7	38	37	44	58	61	52	39	**63**
	B	9	38	39	45	58	62	53	39	**64**
	C	19	44	53	54	63	62	50	38	**66**

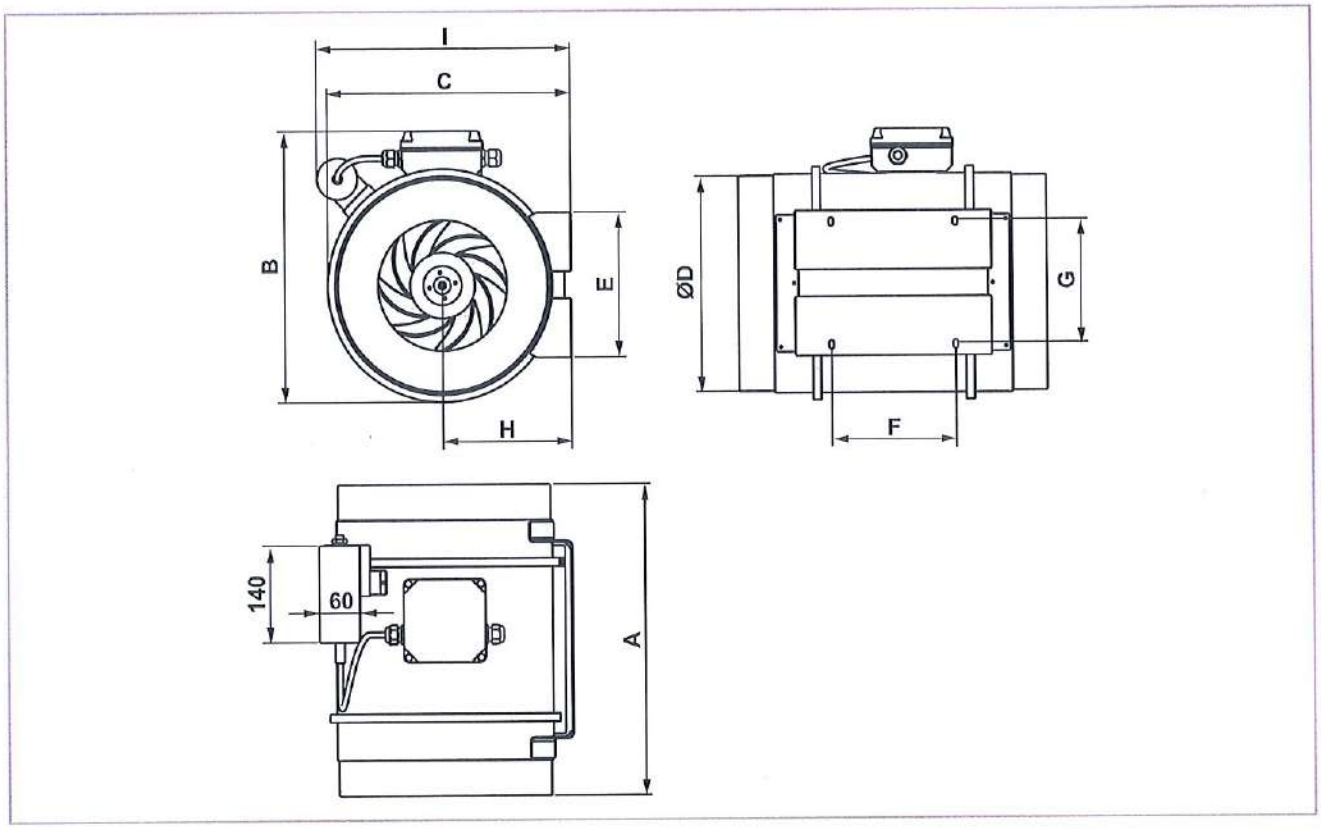


TD-1100/250 EX		63	125	250	500	1000	2000	4000	8000	LwA
Inlet	A	40	57	69	75	73	76	66	59	**80**
	B	40	58	70	75	72	74	65	57	**79**
	C	40	62	74	73	69	71	62	54	**78**
Outlet	A	54	55	70	80	82	81	72	62	**86**
	B	48	53	70	80	81	79	70	61	**85**
	C	41	56	72	80	78	76	68	58	**84**
Radiated	A	32	37	45	53	63	65	55	49	**68**
	B	32	38	46	53	62	63	54	47	**66**
	C	32	42	50	51	59	60	51	44	**63**



TD-1200/315 EX		63	125	250	500	1000	2000	4000	8000	LwA
Inlet	A	32	55	67	69	71	69	64	59	**76**
	B	34	58	70	70	71	69	64	59	**76**
	C	39	63	73	72	73	70	65	58	**79**
Outlet	A	47	55	67	72	74	72	67	62	**78**
	B	42	57	71	73	74	72	67	61	**79**
	C	39	60	74	75	75	74	68	60	**81**
Radiated	A	20	37	49	55	61	60	51	48	**65**
	B	22	40	52	56	61	60	51	48	**65**
	C	27	45	55	58	63	61	52	47	**66**

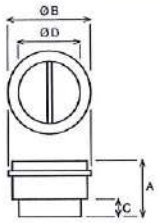
Dimensions (mm)



	A	B	C	Ø D	E	F	G	H	I
TD-800/200-ATEX	302	255	232,5	198	140	100	94	124	228,4
TD-1100/250-ATEX	386	324	291	248	168	145	140	155	339
TD-1200/315-ATEX	450	392	356	312	210	182	178	188	371

Mounting accessories

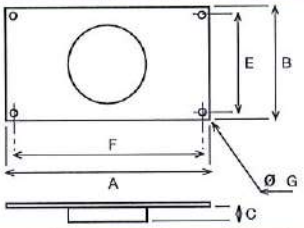
MCA
Back-draft shutters mounted at the outlet of the fans, to prevent external air entry and to limit heat leakage, when the fan are not in use.



MCA model	Type of TD ATEX
MCA - 800	800/200
MCA - 1000	1100/250
MCA - 2000	1200/315

MCA model	A	Ø B	C	Ø D
MCA - 800	131,5	214	35	197,5
MCA - 1000	164	264,5	42	248
MCA - 2000	205	330	50	312

MAR
Rectangular duct adapters.



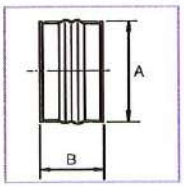
MAR model	Type of TD ATEX	Nominal dim. of ducting L x H
MAR - 800	800/200	315 x 200
MAR - 1000	1100/250	400 x 250
MAR - 2000	1200/315	500 X 315

MAR model	A	B	C	E	F	Ø G
MAR - 800	355	240	37	220	335	9
MAR - 1000	440	290	42	270	420	9
MAR - 2000	540	355	52	355	520	9

MRJ
Grilles mounted at the inlet or outlet of the fan, to prevent the entry of any foreign objects that could damage the fan.

MRJ model	Type of TD ATEX
MRJ - 800	800/200
MRJ - 1000	1100/250
MRJ - 2000	1200/315

ACOPEL EX
Proof explosion flexible connection.



Model	Model connection	ØA	B
TD-800/200 EX	ACOPEL EX-200/160	200	160
TD-1100/250 EX	ACOPEL EX-250/160	250	160
TD-1200/315 EX	ACOPEL EX-315/160	315	160

For more information see **MOUNTING ACCESSORIES**.

Magnetic Level Gauge

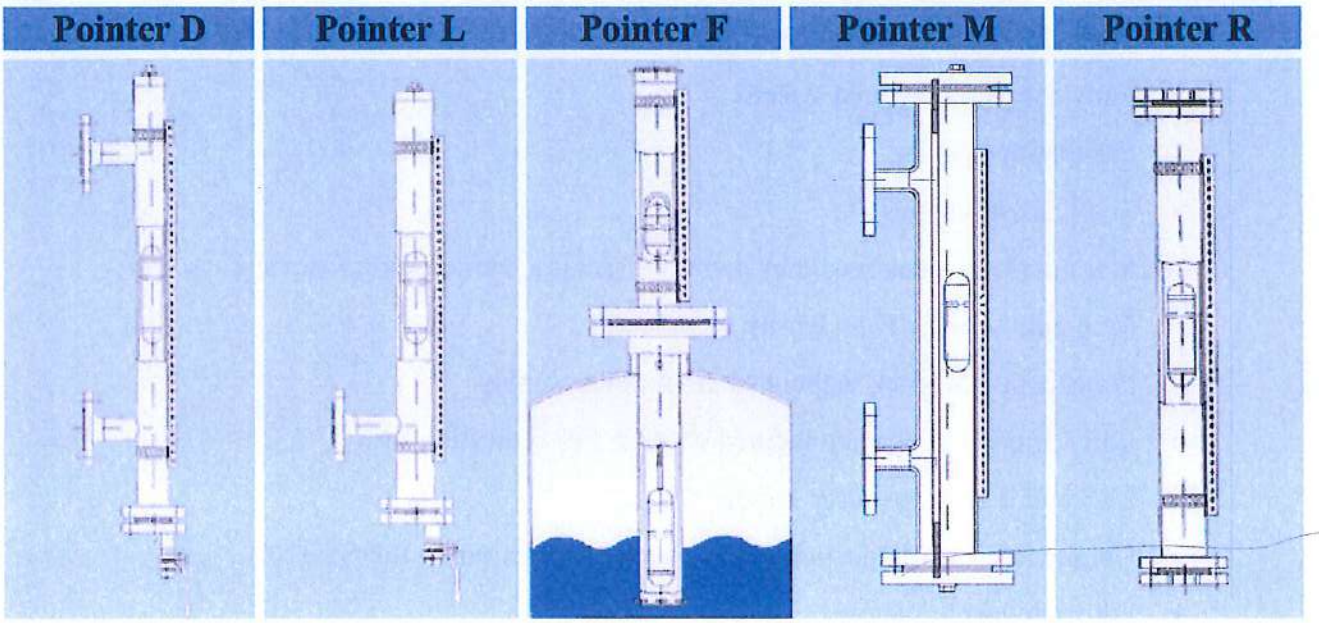
HADRO
MAATWERK OP NIVO

Hadro Techniek B.V.
Westbaan 270
NL - 2841 MC Moordrecht

Tel +31 182 527190
info@hadro.nl
www.hadro.nl

Models

In order to meet all the requirements there are several standard models available.



Pointer D

With two or more process connections for mounting on the side of a vessel. This design is suitable for many different applications, for example condensate tanks, LPG tanks etc.

Pointer L

With one process connection for mounting on the side of a vessel. This model is often used for day tanks for ships.

Pointer F

With one process connection on the bottom, this type is suitable for mounting above a tank.
This design is mostly used for storage tank below the surface.

Pointer M

With two or more process connections for mounting on the side of a vessel.
This design is specially made for evaporating applications.

Pointer R

With two process connections at the end of the level gauge, this type is suitable for mounting between two pipelines.

Special models

Beside the above mentioned types we can manufacture special models. We can make models with a coating (lining) from E-CTFE, PFA or ETFA, models made from plastic (PVC, PP, PVDF , HDPE), Hastelloy, Monel, Titanium or 254SMO/6Mo. We also produce magnetic level gauges with (steam)jacket for heating or cooling.
For further information please contact one of our technical sales engineers.

HADRO
MAATWERK OP NIVO

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NL - 2841 MC Moordrecht

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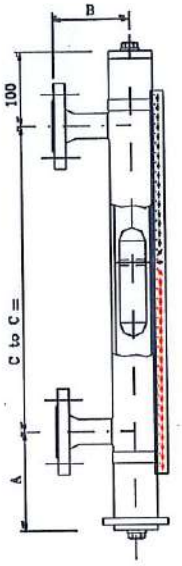
www.hadro.nl

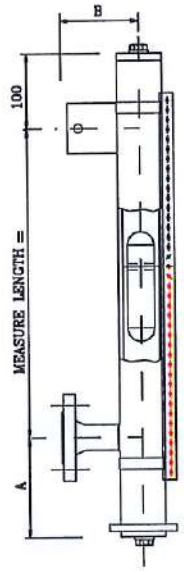
1 Pointer D / Pointer L

1.1 Max. pressure 10 bar, 70 lbs

Model	D-10 / D-70 L-10 / L-70	
Material Pipe	Stainless steel 316L (1.4404) 60.3 x 2 mm	
Pressure Temperature C. to C.	Max. 10 bar / 70 lbs Max. 160 °C Max. 5500 mm (for longer C. to C. see pointer D-16)	
Indication rail	Polycarbonate (max. temp. 105 °C, temporary 120 °C) Aluminium with SS316 flaps Stainless steel 316	
Process connection	DIN DN 15 – DN 32 / PN 16 ANSI ½" – 1¼" 150# RF Weld or thread (Male / Female) ½" – 1" DN 40 – DN 50 and ANSI 1.1/2" – 2" on 1" pipe	B = 75 mm B = 85 mm B = 70 mm B = 130 mm
Drain	¼", ½" or ¾" plug BSP or NPT ¼", ½" or ¾" ballvalve None	
Drain gasket	EPDM, NBR, FPM	
Vent	¼", ½" or ¾" plug or valve, BSP or NPT G 2" stop None	
Float Drain length	From density min. 380 kg/m³ Density min. 920 kg/m³ Density min. 830 kg/m³ Density min. 720 kg/m³ Density min. 660 kg/m³	 A = 200 mm (*) A = 235 mm (*) A = 285 mm (*) A = 340 mm (*)
Extra support	C. to C. > 3 meter for offshore C. to C. > 4 meter for onshore	
Pointers	High & Low in stainless steel	
Marking	Tag plate acc. to standard layout PED marking till cat. III std.	
Certificates	Material EN 10204 3.1 + drawing Pressure test LRS or BV certificate	
Special	Electrical tracing	



Pointer D-



Pointer L-

(*) special (shorter) drain length available on request.

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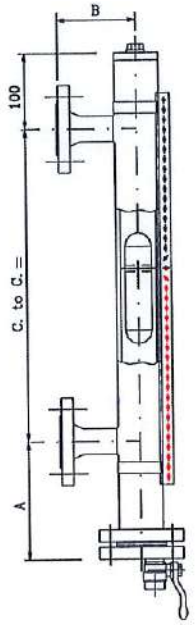
Westbaan 270
NL - 2841 MC Moordrecht

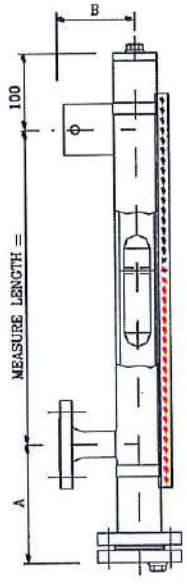
Tel +31 182 527190
info@hadro.nl
www.hadro.nl

1.3 Max. pressure 40 bar, 300 lbs

Model	D-40 / D-300 L-40 / L-300
Material	Stainless steel 316L (1.4404), Stainless steel 304, PP, PVC, PVDF, PE, Monel, Titanium, Hastelloy, 254SMO/6Mo
Pipe	60.3 x 2 mm or 60.3 x 2.77 mm (2" sch. 10)
Pressure	40 bar / 300 lbs
Temperature	Max. 400 °C
C. to C.	Till 5500 mm in 1 piece, longer out more pieces
Indication rail	Polycarbonate (max. temp. 105 °C, temporary 120 °C) Aluminium with SS316 flaps Stainless steel 316
Process connection	DIN DN 15 – DN 32 / PN 40 B = 75 mm ANSI ½" – 1¼" 300# RF (RTJ) B = 85 mm Weld or thread (Male / Female) ½" – 1" B = 70 mm DN 40 – DN 50 and ANSI 1.1/2" – 2" on 1" pipe B = 130 mm
Drain	¼", ½" or ¾" plug or valve, BSP or NPT Side entry as above Extra flange acc. DIN or ANSI None
Drain gasket	PTFE, Aramide, Graphite, spiral wound
Vent	¼", ½" or ¾" plug or valve, BSP / NPT or flanges Flange DN 50 / PN 40 or ANSI 2" 300# Flange DN 25 / PN 40 (as drain) None
Float Drain length	From density min. 390 kg/m³ Density min. 920 kg/m³ A = 210 mm (*) Density min. 830 kg/m³ A = 245 mm (*) Density min. 720 kg/m³ A = 295 mm (*) Density min. 660 kg/m³ A = 350 mm (*)
Extra support	C. to C. > 3 meter for offshore C. to C. > 4 meter for onshore
Marking	Tag plate acc. to standard layout in stainless steel PED marking till cat. III std.
Certificates	Material EN 10204 3.1 + drawing Pressure test LRS or BV certificate NACE MR 01.75 / ISO 15156 WPS/PQR standard material ⟨Ex⟩ II 1/2G Ex h IIC T6..T1 Ga/Gb II 1 D Ex h IIIC T85°C ... T450°C Da KIWA 17ATEX0031 X / IECEx KIWA 18.0006
Special	Insulation, steamjacket, spring, electrical tracing



Pointer D-



Pointer L-

(*)special (shorter) drain length available on request.

HADRO MAATWERK OP NIVO

Hadro Techniek B.V.
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NL - 2841 MC Moordrecht

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info@hadro.nl
www.hadro.nl

Contents

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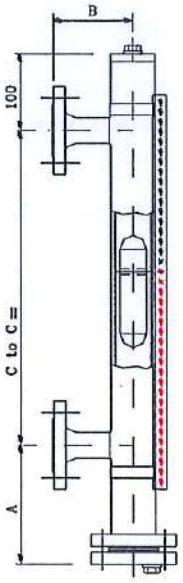
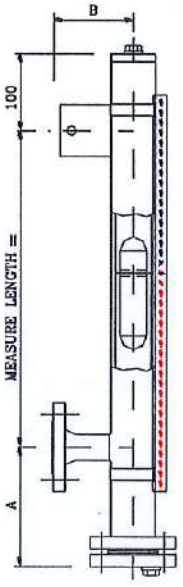
1.2 Max. pressure 16 bar, 150 lbs

Model	D-16 / D-150 L-16 / L-150	
Material	Stainless steel 316L (1.4404), Stainless steel 304, PP, PVC, PVDF, PE, Monel, Titanium, Hastelloy, 254SMO/6Mo	
Pipe	60.3 x 2 mm or 60.3 x 2.77 mm (2" sch. 10)	
Pressure	Max. 16 bar / 150 lbs	
Temperature	Max. 400 °C	
C. to C.	Till 5500 mm in 1 piece, longer out more pieces	
Indication rail	Polycarbonate (max. temp. 105 °C, temporary 120 °C) Aluminium with SS316 flaps Stainless steel 316	
Process connection	DIN DN 15 – DN 32 / PN 16 ANSI ½" – 1¼" 150# RF Weld or thread (Male / Female) ½" – 1" DN 40 – DN 50 and ANSI 1.1/2" – 2" on 1" pipe	B = 75 mm B = 85 mm B = 70 mm B = 130 mm
Drain	¼", ½" or ¾" plug or valve, BSP / NPT Side entry as above Extra flange acc. DIN or ANSI None	
Drain gasket	PTFE, Aramide, Graphite, spiral wound	
Vent	¼", ½" or ¾" plug or valve, BSP / NPT or flanges Flange DN 50 / PN 16 or ANSI 2" 150# Flange DN 25 / PN 16 (as drain) None	
Float	From density min. 380 kg/m³	
Drain length	Density min. 920 kg/m³ Density min. 830 kg/m³ Density min. 720 kg/m³ Density min. 660 kg/m³	A = 210 mm (*) A = 245 mm (*) A = 295 mm (*) A = 350 mm (*)
Extra support	C. to C. > 3 meter for offshore C. to C. > 4 meter for onshore	
Marking	Tag plate acc. to standard layout in stainless steel PED marking till cat. III std.	
Certificates	Material EN 10204 3.1 + drawing Pressure test LRS or BV certificate NACE MR 01.75 / ISO 15156 WPS/PQR standard material ⟨Ex⟩ II 1/2G Ex h IIC T6..T1 Ga/Gb II 1 D Ex h IIIC T85°C ... T450°C Da KIWA 17ATEX0031 X / IECEx KIWA 18.0006	
Special	Insulation, steamjacket, spring, electrical tracing	



Pointer D-



Pointer L-

(*) special (shorter) drain length available on request.

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The advantages

- Standard unpressurised floatsystem
- Float without mechanical or magnetic guide rails
- Fully corrosion resistant system
- Competitive prices
- Short delivery times
- Measurement is unaffected by pressure, vacuum, temperature, foam and viscosity
- Minimum sensitivity to density variations
- Permanent indication without external power supply
- Low temperature version is fitted with ice free indication strip
- LRS and BV approval for vessels
- Unique free view indication rail in plastic, Aluminium or full SS 316
- Fully adjustable switches
- Scale / ruler available in cm, mm, % or litres
- Back lighting is unnecessary
- Eccentric drain cannot blocked by the float
- Safe, environmentally friendly and maintenance-free construction
- Broken float indication rail is possible
- Special designs according to client wishes are possible
- You are doing business directly with the manufacturer, reducing transfer mistakes
- For most types all our weldings are fully penetrated.

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POINTER® MAGNETIC LEVEL GAUGE

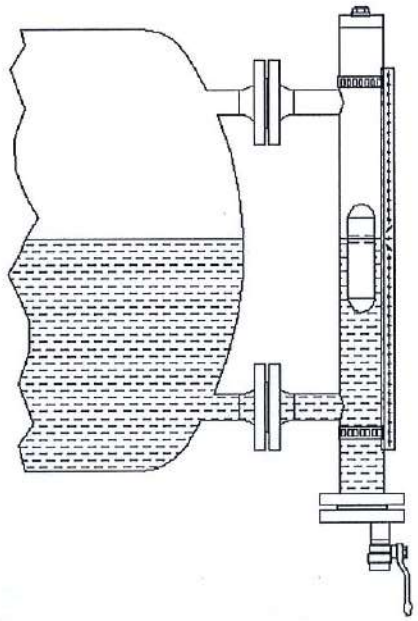
Operating principle

Magnetic level gauges work on the principle of communicating vessels, therefore the level in the measuring chamber will be the same as the level in the vessel. The measuring chamber is fitted with a float, which has a magnet inside. The float with magnet will float on the medium and the magnet in the float will turn the flaps of the indicating rail.

The float in the measuring tube is standard not pressurized and has no magnetic or mechanical guidance. This construction makes the float less dangerous than a float which is standard pressurized. When necessary Hadro can produce a pressurized float.

With the below mentioned process conditions it is possible to select a float which will float on the medium.

- Medium
- Density
- Working pressure
- Temperature



Each flap in the indicating rail is fitted with a permanent magnet which makes this level gauge unaffected by shocks, vibrations and high temperatures. Also moisture and / or an aggressive environment are no problem for this level gauge.

This magnetic level gauge is available with a full plastic indication rail or with stainless steel flaps in a aluminium or stainless steel 316 housing.

Because of the construction of the flaps, one side white and on the other red / orange it is possible to see the level over a greater distance or in darker places.

With the available "Pointers" it is possible to set the visual limits on the indicating rail on every level you require.

When the magnetic level gauge is fitted with magnetic switches it is possible to get a signal. With more switches you can make a pump control (pump on / off) and / or create a high / low alarm. Beside or instead of level switches a reedchain transmitter can be mounted, this reedchain has an standard output signal of 4-20 mA.

Magnetic level gauge are also suitable for interface reading. The float will sink into the medium with the lower density and will float on the medium with the higher density.

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Схема 1 / Schema 1

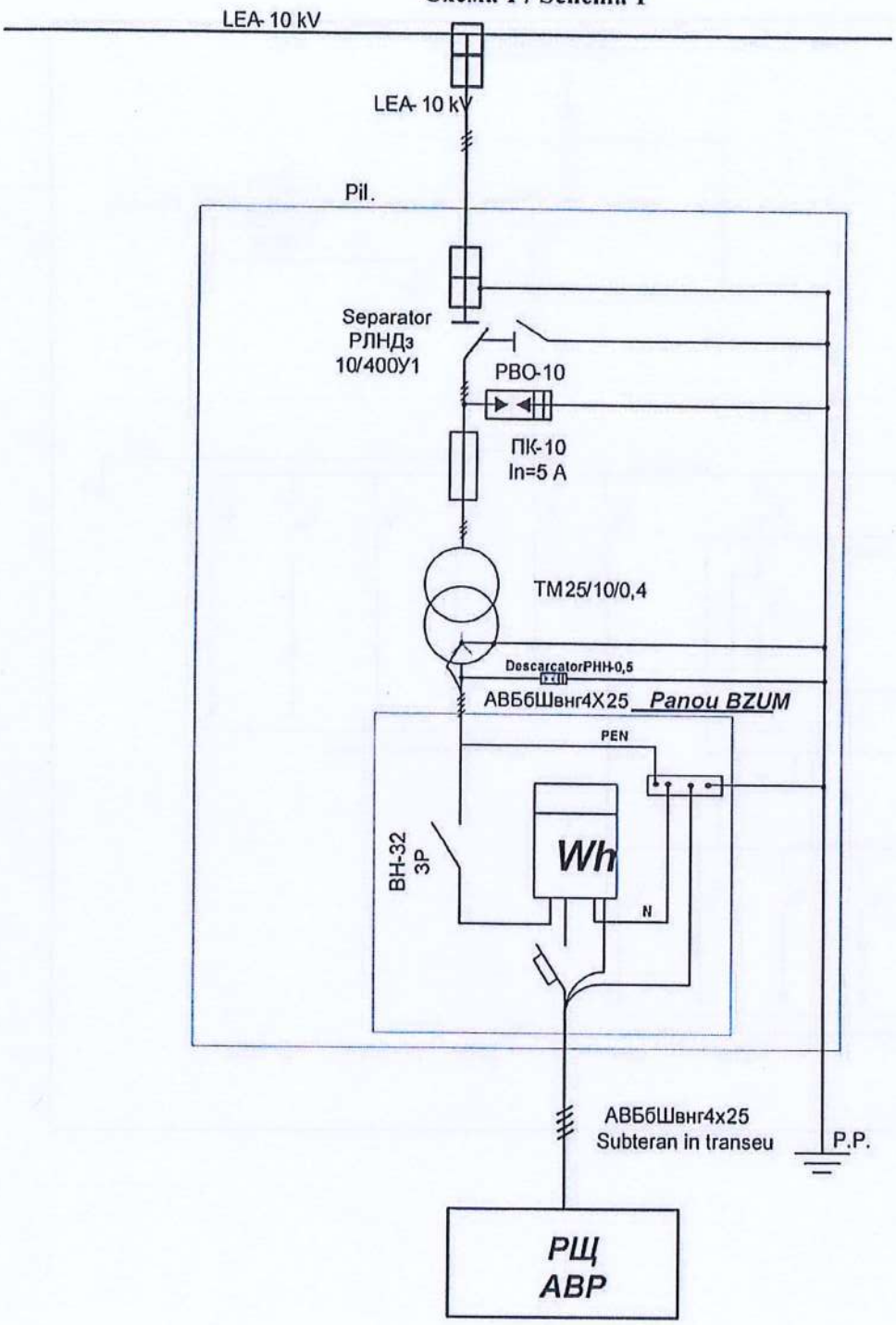
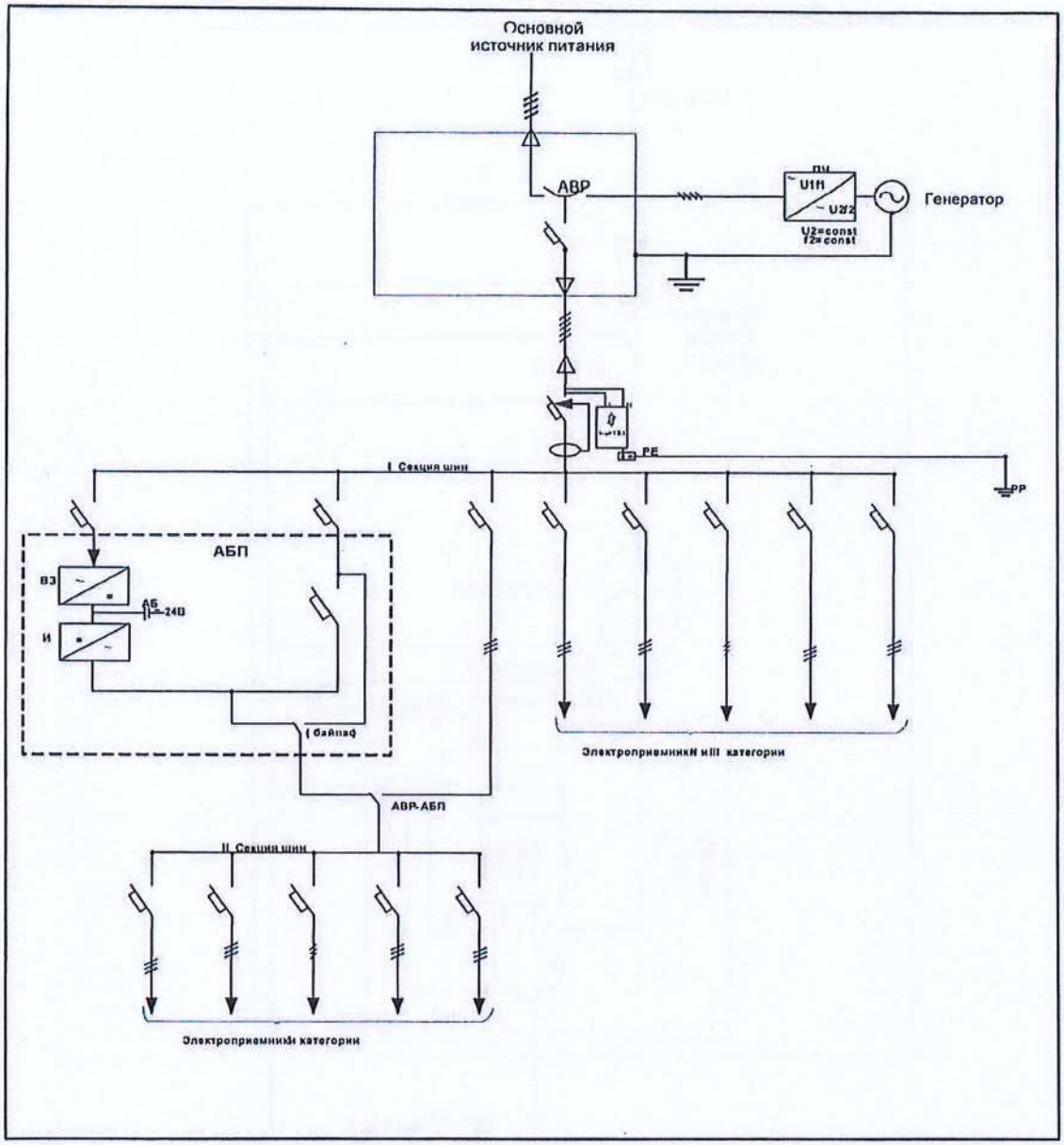


Схема 2 / Schema 2



7. TERMENE DE LIVRARE/EXECUȚIE ȘI GARANȚII ACORDATE

7.1.	Termen de executare a lucrărilor :	30.09.2023.
7.2.	Termen de dare în exploatare (PIF) :	15.10.2023.
7.3.	Termenul de garanție pentru Utilaje :	36 luni de la darea în exploatare (PIF).
7.4.	Termenul de garanție pentru Lucări :	60 luni de la data terminării lucrărilor.
7.5.	Garanație de bună execuție a contractului :	5% din valoarea contractului.
7.6.	Termen și modalitate de plată :	* Avans 0 * 90 zile de la semnarea Procesului verbal de recepție a lucrărilor, în baza facturii fiscale.

Notă : ***Menționăm că toate Utilajele, materialele care vor fi utilizate la executia lucrărilor care fac obiectul contractului, vor fi noi/nefolosite și vor beneficia de garanțiile solicitate de Autoritatea contractantă prin documentația de atribuire.***

Data : 21.03.2023

AUTORIZAŢIA

nr. 21535

pentru

Execuţia conductelor de alimentare din amonte şi a instalaţiilor tehnologice de suprafaţă aferente înmagazinării de gaze naturale, tip EPI

acordată

CIS GAZ S.A.

cu sediul în comuna Sîntana de Mureş, str.Voinicenilor nr. 686, judeţul Mureş,
CUI 1210493
înregistrat în Registrul comerţului sub nr. J26/838/1991

Durata de valabilitate a autorizaţiei este nelimitată, începând cu data de 24.10.2022. Valabilitatea autorizaţiei este condiţionată de vizarea acesteia la data la care se împlinesc 5 ani de la data de 24.10.2022 sau, după caz, de la data ultimei vizări în scopul continuării activităţii autorizate.

Titularul autorizaţiei are obligaţia să respecte prevederile din:

1. CONDIŢIILE-CADRU de valabilitate aferente autorizaţiilor destinate activităţii de execuţie în domeniul gazelor naturale;
2. Regulamentul pentru autorizarea operatorilor economici care desfăşoară activităţi în domeniul gazelor naturale, aprobat prin Ordinul preşedintelui ANRE nr. 132/2021;
3. Legea energiei electrice şi a gazelor naturale nr. 123/2012, cu modificările şi completările ulterioare (*Lege*);
4. alte acte normative incidente.

Este interzisă realizarea de activităţi de proiectare, execuţie şi exploatare a obiectivelor/sistemelor/ instalaţiilor din domeniul gazelor naturale de către persoane juridice sau persoane fizice care nu deţin autorizaţia corespunzătoare tipului de lucrări realizate sau pentru care autorizaţia nu a fost vizată.

Neîndeplinirea şi/sau îndeplinirea necorespunzătoare a prevederilor prezentului regulament sau nerespectarea condiţiilor-cadru de valabilitate asociate autorizaţiei/autorizaţiilor, în funcţie de tipul de autorizaţie deţinut, se sancţionează potrivit dispoziţiilor *Legii*.

p. PREŞEDINTE,
MIRCEA MAN

Data eliberării: 06.10.2022

Nr. 0065021

Loc ștampilă ANRE *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*
Următorul termen de vizare: 23.10.2027	*Următorul termen de vizare:*	*Următorul termen de vizare:*	*Următorul termen de vizare:*
Loc ștampilă ANRE *Data vizării*	*Loc ștampilă ANRE* *Data vizării*	*Loc ștampilă ANRE* *Data vizării*	*Loc ștampilă ANRE* *Data vizării*
Următorul termen de vizare	*Următorul termen de vizare*	*Următorul termen de vizare*	*Următorul termen de vizare*
Loc ștampilă ANRE *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*
Următorul termen de vizare	*Următorul termen de vizare*	*Următorul termen de vizare*	*Următorul termen de vizare*

AUTORITATEA NAȚIONALĂ DE REGLEMENTARE ÎN DOMENIUL ENERGIEI

AUTORIZAŢIA

nr. 21536

pentru

Execuţia sistemelor de transport, sistemelor de distribuţie a gazelor naturale, sistemelor de distribuţie închise, instalaţiilor aferente activităţii de producere/stocare biogaz/biometan, precum şi a instalaţiilor de utilizare a gazelor naturale ce funcţionează în regim de înaltă presiune, tip ET

acordată

CIS GAZ S.A.

cu sediul în comuna Sîntana de Mureş, str.Voinicenilor nr. 686, judeţul Mureş,
CUI 1210493
înregistrat în Registrul comerţului sub nr. J26/838/11.07.1991

Durata de valabilitate a autorizaţiei este nelimitată, începând cu data de 24.10.2022. Valabilitatea autorizaţiei este condiţionată de vizarea acesteia la data la care se împlinesc 5 ani de la data de 24.10.2022 sau, după caz, de la data ultimei vizări în scopul continuării activităţii autorizate.

Titularul autorizaţiei are obligaţia să respecte prevederile din:

1. CONDIŢIILE-CADRU de valabilitate aferente autorizaţiilor destinate activităţii de execuţie în domeniul gazelor naturale;
2. Regulamentul pentru autorizarea operatorilor economici care desfăşoară activităţi în domeniul gazelor naturale, aprobat prin Ordinul preşedintelui ANRE nr. 132/2021;
3. Legea energiei electrice şi a gazelor naturale nr. 123/2012, cu modificările şi completările ulterioare (*Lege*);
4. alte acte normative incidente.

Este interzisă realizarea de activităţi de proiectare, execuţie şi exploatare a obiectivelor/sistemelor/ instalaţiilor din domeniul gazelor naturale de către persoane juridice sau persoane fizice care nu deţin autorizaţia corespunzătoare tipului de lucrări realizate sau pentru care autorizaţia nu a fost vizată.

Neîndeplinirea şi/sau îndeplinirea necorespunzătoare a prevederilor prezentului regulament sau nerespectarea condiţiilor-cadru de valabilitate asociate autorizaţiei/autorizaţiilor, în funcţie de tipul de autorizaţie deţinut, se sancţionează potrivit dispoziţiilor *Legii*.

p. PREŞEDINTE,
MIRCEA MAN

Data eliberării: 06.10.2022

Nr. 0065020

Loc ștampilă ANRE *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*
Următorul termen de vizare: 23.10.2027	*Următorul termen de vizare:*	*Următorul termen de vizare:*	*Următorul termen de vizare:*
Loc ștampilă ANRE *Data vizării*	*Loc ștampilă ANRE* *Data vizării*	*Loc ștampilă ANRE* *Data vizării*	*Loc ștampilă ANRE* *Data vizării*
Următorul termen de vizare	*Următorul termen de vizare*	*Următorul termen de vizare*	*Următorul termen de vizare*
Loc ștampilă ANRE *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*
Următorul termen de vizare	*Următorul termen de vizare*	*Următorul termen de vizare*	*Următorul termen de vizare*

AUTORITATEA NAȚIONALĂ DE REGLEMENTARE ÎN DOMENIUL ENERGIEI

În temeiul prevederilor Legii energiei electrice şi a gazelor naturale nr. 123/2012 cu modificările și completările ulterioare.

Se acordă

AUTORIZAȚIE

destinată proiectării instalațiilor de utilizare a gazelor naturale având regimul de medie, redusă și joasă presiune, tip PDIB

nr. 20495

CIS GAZ S.A.

cu sediul în comuna Sântana de Mureş, str. Voinicenilor, nr. 686, judeţul Mureş

Prezenta autorizaţie este valabilă până la 28.09.2026, în condiţiile de valabilitate anexate.

Bucureşti, 29.09.2021

p. PREŞEDINTE

Mircea MAN

ORIGINAL ORIGINAL ORIGINAL ORIGINAL

Nr. 0058638

Anexă la autorizaţia nr. 20495

1. AUTORIZAŢIA nr. 20495 destinată proiectării instalaţiilor de utilizare a gazelor naturale având regimul de medie, redusă şi joasă presiune, tip PDIB este acordată de Autoritatea Naţională de Reglementare în Domeniul Energiei, denumită în continuare ANRE, operatorului economic CIS GAZ S.A., înregistrat la Oficiul Naţional al Registrului Comerţului sub nr. J26/838/11.07.1991, CUI 1210493, denumit în continuare TITULAR.
2. AUTORIZAŢIA nr. 20495 este valabilă începând din data de 29.09.2021 până la data de 28.09.2026.
3. TITULARUL are obligaţia să respecte prevederile Condiţiilor - cadru de valabilitate aferente autorizaţiilor destinate activităţii de proiectare în domeniul gazelor naturale, prevăzute în Anexa nr. 7 la Regulamentul pentru autorizarea operatorilor economici care desfăşoară activităţi în domeniul gazelor naturale, aprobat prin Ordinul preşedintelui ANRE nr. 98/2015, cu modificările şi completările ulterioare.

AUTORITATEA NAȚIONALĂ DE REGLEMENTARE ÎN DOMENIUL ENERGIEI

AUTORIZAŢIA

nr. 20830

pentru

proiectarea conductelor de alimentare din amonte şi a instalaţiilor tehnologice de suprafaţă aferente înmagazinării de gaze naturale, tip PPI

acordată

CIS GAZ S.A.

cu sediul în Sântana de Mureş, str.Voinicenilor nr. 686, comuna Sîntana de Mureș, judeţul Mureş
CUI 1210493
înregistrat în Registrul comerţului sub nr. J26/838/11.07.1991

Durata de valabilitate a autorizaţiei este nelimitată, începând cu data de 16.03.2022. Valabilitatea autorizaţiei este condiţionată de vizarea acesteia la data la care se împlinesc 5 ani de la data emiterii sau, după caz, de la data ultimei vizări în scopul continuării activităţii autorizate.

Titularul autorizaţiei are obligaţia să respecte prevederile din:

1. CONDIŢIILE-CADRU de valabilitate aferente autorizaţiilor destinate activităţii de proiectare în domeniul gazelor naturale;
2. Regulamentul pentru autorizarea operatorilor economici care desfăşoară activităţi în domeniul gazelor naturale, aprobat prin Ordinul preşedintelui ANRE nr. 132/2021;
3. Legea energiei electrice şi a gazelor naturale nr. 123/2012, cu modificările şi completările ulterioare (*Lege*);
4. alte acte normative incidente.

Este interzisă realizarea de activităţi de proiectare, execuţie şi exploatare a obiectivelor/sistemelor/ instalaţiilor din domeniul gazelor naturale de către persoane juridice sau persoane fizice care nu deţin autorizaţia corespunzătoare tipului de lucrări realizate sau pentru care autorizaţia nu a fost vizată.

Neîndeplinirea şi/sau îndeplinirea necorespunzătoare a prevederilor prezentului regulament sau nerespectarea condiţiilor-cadru de valabilitate asociate autorizaţiei/autorizaţiilor, în funcţie de tipul de autorizaţie deţinut, se sancţionează potrivit dispoziţiilor *Legii*.

PREŞEDINTE,
DUMITRU CHIRIŢĂ

Data eliberării: 16.03.2022

Nr. 0059448

Loc ștampilă ANRE *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*
Următorul termen de vizare: 15.03.2027	*Următorul termen de vizare:*	*Următorul termen de vizare:*	*Următorul termen de vizare:*
Loc ștampilă ANRE *Data vizării*	*Loc ștampilă ANRE* *Data vizării*	*Loc ștampilă ANRE* *Data vizării*	*Loc ștampilă ANRE* *Data vizării*
Următorul termen de vizare	*Următorul termen de vizare*	*Următorul termen de vizare*	*Următorul termen de vizare*
Loc ștampilă ANRE *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*
Următorul termen de vizare	*Următorul termen de vizare*	*Următorul termen de vizare*	*Următorul termen de vizare*

AUTORITATEA NAȚIONALĂ DE REGLEMENTARE ÎN DOMENIUL ENERGIEI

AUTORIZAŢIA

nr. 20831

pentru

proiectarea sistemelor de transport, sistemelor de distribuţie a gazelor naturale, sistemelor de distribuţie închise, instalaţiilor aferente activităţii de producere/stocare biogaz/biometan, precum şi a instalaţiilor de utilizare a gazelor naturale care funcţionează în regim de înaltă presiune, tip PT

acordată

CIS GAZ S.A.

cu sediul în Sântana de Mureş, str.Voinicenilor nr. 686, comuna Sîntana de Mureş, judeţul Mureş
CUI 1210493
înregistrat în Registrul comerţului sub nr. J26/838/11.07.1991

Durata de valabilitate a autorizaţiei este nelimitată, începând cu data de 16.03.2022. Valabilitatea autorizaţiei este condiţionată de vizarea acesteia la data la care se împlinesc 5 ani de la data emiterii sau, după caz, de la data ultimei vizări în scopul continuării activităţii autorizate.

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1. CONDIŢIILE-CADRU de valabilitate aferente autorizaţiilor destinate activităţii de proiectare în domeniul gazelor naturale;
2. Regulamentul pentru autorizarea operatorilor economici care desfăşoară activităţi în domeniul gazelor naturale, aprobat prin Ordinul preşedintelui ANRE nr. 132/2021;
3. Legea energiei electrice şi a gazelor naturale nr. 123/2012, cu modificările şi completările ulterioare (*Lege*);
4. alte acte normative incidente.

Este interzisă realizarea de activităţi de proiectare, execuţie şi exploatare a obiectivelor/sistemelor/ instalaţiilor din domeniul gazelor naturale de către persoane juridice sau persoane fizice care nu deţin autorizaţia corespunzătoare tipului de lucrări realizate sau pentru care autorizaţia nu a fost vizată.

Neîndeplinirea şi/sau îndeplinirea necorespunzătoare a prevederilor prezentului regulament sau nerespectarea condiţiilor-cadru de valabilitate asociate autorizaţiei/autorizaţiilor, în funcţie de tipul de autorizaţie deţinut, se sancţionează potrivit dispoziţiilor *Legii*.

PREŞEDINTE,
DUMITRU CHIRIŢĂ

Data eliberării: 16.03.2022

Nr. 0059447

Loc ștampilă ANRE *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*
Următorul termen de vizare: 15.03.2027	*Următorul termen de vizare:*	*Următorul termen de vizare:*	*Următorul termen de vizare:*
Loc ștampilă ANRE *Data vizării*	*Loc ștampilă ANRE* *Data vizării*	*Loc ștampilă ANRE* *Data vizării*	*Loc ștampilă ANRE* *Data vizării*
Următorul termen de vizare	*Următorul termen de vizare*	*Următorul termen de vizare*	*Următorul termen de vizare*
Loc ștampilă ANRE *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*	*Loc ștampilă ANRE* *Data vizării:*
Următorul termen de vizare	*Următorul termen de vizare*	*Următorul termen de vizare*	*Următorul termen de vizare*

INSEMEX Petrosani
GANEx

A T E S T A T

PRIVIND CAPACITATEA REALIZĂRII DE ACTIVITĂŢI SPECIFICE

Numărul atestatului: GANEx.Q.2023.(05).12.2710

Activităţi de proiectare, montaj, mentenanţă echipamente/instalaţii utilizate în medii potenţial explozive.

Solicitator: CIS GAZ S.A. SÂNTANA DE MUREŞ
Str. Voinicenilor, nr. 686, jud. Mureş

Beneficiar utilizator: CIS GAZ S.A. SÂNTANA DE MUREŞ
Atestatul privind capacitatea realizării de activităţi specifice se referă la specificaţiile prezentate în ANEXĂ

INSEMEX-GANEx, atestă pentru solicitator că are capacitatea necesară realizării de activităţi specifice Normativului NEx 01-06 precizate la pct. 4 dezvoltate pe cerinţele SR EN ISO 9001: 2015 cu referire la cerinţele specifice pentru instalaţii şi echipamente din atmosfere potenţial explozive din SR EN ISO 29001: 2020, SR EN 60079-14:2014, SR EN 60079-17:2014.

Prezentul atestat se bazează pe Chestionarul de evaluare a capacităţii nr. 5/2023.
Atestatul privind capacitatea realizării de activităţi specifice poate fi retras dacă titularul nu mai satisface cerinţele specificate.
Constituie parte a prezentului atestat, rezultatele reevaluării periodice.

Data atestării curente : **06.01.2023**

Prezentul atestat expiră la **06.01.2026** cu evaluare periodică anuală în schema INSEMEX-GANEx, şi poate fi retrasă dacă titularul nu mai satisface cerinţele privind asigurarea calităţii.

Prezentul atestat poate fi reprodus numai în totalitatea sa şi fără nici o modificare, inclusiv anexa.

Supraveghere I	Supraveghere II

Acest atestat este acordat având în vedere condiţiile generale INSEMEX-GANEx şi este valabilă juridic numai însoţită de adresă oficială INSEMEX.

Dosar GANEx nr. 2710/2022 — Petroşani, 06.01.2023
Pagina 1 din 2

SEF GANEx
DR. ING. SORIN BURIAN

INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE
PENTRU SECURITATE MINIERĂ SI PROTECTIE ANTIEXPLOZIVĂ
Str.Gen.V.Milea nr.32-34 Petrosani 332047 România
Tel.(++4)0254541621,22,; Fax.(++4) 0254546277
E-mail : insemex@insemex.ro.

A T E S T A T

PRIVIND CAPACITATEA REALIZĂRII DE ACTIVITĂŢI SPECIFICE

Numărul atestatului : GANEx.Q.2023.(05).12.2710

Activități de proiectare, montaj, mentenanță echipamente/instalații utilizate în medii potențial explozive

Metode de protecţie la explozie pentru care a fost evaluat titularul:
Aparatură electrică cu tipuri de protecţie:
Capsulare antideflagrantă (d)
Securitate intrinsecă (i)
Securitate mărită (e)
Încapsulare în masă (m)
Protecţie (n)
Presurizare (p)
Protecţie prin carcasă (t)
Materiale fără pericol de scântei mecanice și electricitate statică
Echipamente neelectrice cu tipuri de protecţie:
Capsulare antideflagrantă
Securitate constructivă
Controlul surselor de aprindere
Imersie în lichid
Presurizare

Responsabilul activităţii:
ALEXANDRU FLORIN ANTON

Responsabilul calităţii:
GOTA MARIUS

Tipuri de echipamente din instalaţiile tehnice pentru care a fost evaluat titularul
Motoare, transformatoare, generatoare, servomotoare liniare şi rotative
Capsulări, cutii de borne şi plăci de borne
Instrumentaţie, echipamente de măsură şi comandă
Senzori, traductoare şi comutatoare de semnalizare
Echipamente neelectrice

Echipamentele folosite trebuie să se identifice printr-un certificat emis de un organism recunoscut şi de asemenea prin marcajul şi declaraţia de conformitate.
În cazul în care sunt cuprinse în activitate alte tipuri de echipamente, fiecare tip suplimentar trebuie să fie însoţit de declaraţia de conformitate şi documentaţia tehnică de evaluare a conformităţii cu cerinţele esenţiale din Anexa 2/HG 245/2016 elaborate de către producător sau reprezentantul său autorizat şi după caz de certificatul adiţional INSEMEX-GANEx privind aparatura adiţională sau decizia de înregistrare a documentaţiei la organismul recunoscut.

Prezentul atestat nu poate fi folosit fără identificarea documentară menţionată mai sus şi înţelegerea scrisă cu beneficiarul.

Specificaţii adiţionale pentru supraveghere:
Specificaţiile adiţionale prevăzute în fiecare caz de atestare, privind securitatea la explozie şi cerinţele suplimentare pentru protecţia la explozie care rezultă pentru supravegherea în schema GANEx cu reevaluare anuală şi reciclare la trei ani.
Atestatul nu poate fi folosit fără specificaţiile adiţionale menţionate.

Grup tehnic de lucru :

Dr. ing. T. Csaszar

Dr. ing. L. Moldovan

Numărul anexei 1/1

AUTORITATEA NAȚIONALĂ DE REGLEMENTARE ÎN DOMENIUL ENERGIEI

În temeiul prevederilor Legii energiei electrice şi a gazelor naturale nr. 123/2012 cu modificările și completările ulterioare

Se acordă

AUTORIZAȚIE

destinată execuției instalațiilor de utilizare a gazelor naturale având regimul de medie, redusă și joasă presiune, tip EDIB

nr. 20497

CIS GAZ S.A.

cu sediul în comuna Sântana de Mureş, str. Voinicenilor, nr. 686, judeţul Mureş

Prezenta autorizaţie este valabilă până la 28.09.2026, în condiţiile de valabilitate anexate.

Bucureşti, 29.09.2021

p. PREŞEDINTE

Mircea MAN

ORIGINAL ORIGINAL ORIGINAL ORIGINAL

Nr. 0058639

Anexă la autorizaţia nr. 20497

1. AUTORIZAŢIA nr. 20497 destinată execuţiei instalaţiilor de utilizare a gazelor naturale având regimul de medie, redusă şi joasă presiune, tip EDIB este acordată de Autoritatea Naţională de Reglementare în Domeniul Energiei, denumită în continuare ANRE, operatorului economic CIS GAZ S.A., înregistrat la Oficiul Naţional al Registrului Comerţului sub nr. J26/838/11.07.1991, CUI 1210493, denumit în continuare TITULAR.
2. AUTORIZAŢIA nr. 20497 este valabilă începând din data de 29.09.2021 până la data de 28.09.2026.
3. TITULARUL are obligaţia să respecte prevederile Condiţiilor - cadru de valabilitate aferente autorizaţiilor destinate activităţii de execuţie în domeniul gazelor naturale, prevăzute în Anexa nr. 8 la Regulamentul pentru autorizarea operatorilor economici care desfăşoară activităţi în domeniul gazelor naturale, aprobat prin Ordinul preşedintelui ANRE nr. 98/2015, cu modificările şi completările ulterioare.

//

În conformitate cu **Decizia președintelui ANRE nr. 1925/ 03-12-2018** se acordă societății **ELBIM GRUPSERV S.R.L.** înregistrată în registrul comerțului sub nr. **J04/ 956/ 2014,** având codul unic de înregistrare nr. **33692790,**

ATESTATUL

nr. 13929/ 03-12-2018

de tip C1A pentru "proiectare de linii electrice, aeriene sau subterane, cu tensiuni nominale de 0,4 kV ÷ 20 kV, posturi de transformare cu tensiunea nominală superioară de cel mult 20 kV, stații de medie tensiune, precum și partea electrică de medie tensiune a stațiilor de înaltă tensiune".

Condiții de valabilitate asociate atestatului:

1.Atestatul este valabil pe termen nelimitat. Valabilitatea atestatului este condiționată de verificarea și vizarea periodică a acestuia în condițiile Regulamentului pentru atestarea operatorilor economici care proiectează, execută și verifică instalații electrice, aprobat prin ordin al președintelui ANRE nr. 45/2016.

2.Titularul atestatului are drepturile și trebuie să respecte obligațiile prevăzute în Regulamentul pentru atestarea operatorilor economici care proiectează, execută și verifică instalații electrice, aprobat prin ordin al președintelui ANRE nr. 45/2016 și precum și în orice altă reglementare aplicabilă aprobată de ANRE.

3.Neîndeplinirea și/sau îndeplinirea necorespunzătoare de către titularul prezentului atestat a obligațiilor impuse de lege sau de reglementările aprobate de ANRE în desfășurarea activităților ce fac obiectul atestatului nu atrage răspunderea penală, civilă, contravențională, administrativă sau materială a ANRE, iar atestarea operatorilor economici nu conduce la transferul de responsabilități de la aceștia către ANRE și nici nu îi exonerează pe aceștia de obligațiile ce le revin.

p. PREȘEDINTE,

HENOREL FLORIN SOREAȚĂ

Data emiterii: 03-12-2018

Nr. 0038420

Loc ștampilă ANRE Data vizării 03.12.2018	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării .....
Următorul termen de vizare 03.12.2023	Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare .....
Loc ștampilă ANRE Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării .....
Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare .....

AUTORITATEA NAȚIONALĂ DE REGLEMENTARE ÎN DOMENIUL ENERGIEI

În conformitate cu **Decizia președintelui ANRE nr. 1925/ 03-12-2018** se acordă societății **ELBIM GRUPSERV S.R.L.** înregistrată în registrul comerțului sub nr. **J04/ 956/ 2014,** având codul unic de înregistrare nr. **33692790,**

ATESTATUL

nr. 13930/ 03-12-2018

de tip C2A pentru "executare de linii electrice, aeriene sau subterane, cu tensiuni nominale de 0,4 kV ÷ 20 kV, posturi de transformare cu tensiunea nominală superioară de cel mult 20 kV, stații de medie tensiune, precum și partea electrică de medie tensiune a stațiilor de înaltă tensiune".

Condiții de valabilitate asociate atestatului:

1.Atestatul este valabil pe termen nelimitat. Valabilitatea atestatului este condiționată de verificarea și vizarea periodică a acestuia în condițiile Regulamentului pentru atestarea operatorilor economici care proiectează, execută și verifică instalații electrice, aprobat prin ordin al președintelui ANRE nr. 45/2016.

2.Titularul atestatului are drepturile și trebuie să respecte obligațiile prevăzute în Regulamentul pentru atestarea operatorilor economici care proiectează, execută și verifică instalații electrice, aprobat prin ordin al președintelui ANRE nr. 45/2016 și precum și în orice altă reglementare aplicabilă aprobată de ANRE.

3.Neîndeplinirea și/sau îndeplinirea necorespunzătoare de către titularul prezentului atestat a obligațiilor impuse de lege sau de reglementările aprobate de ANRE în desfășurarea activităților ce fac obiectul atestatului nu atrage răspunderea penală, civilă, contravențională, administrativă sau materială a ANRE, iar atestarea operatorilor economici nu conduce la transferul de responsabilități de la aceștia către ANRE și nici nu îi exonerează pe aceștia de obligațiile ce le revin.

p. PREȘEDINTE,

HENOREL FLORIN SOREAȚĂ

Data emiterii: 03-12-2018

Nr. 0038421

Loc ștampilă ANRE Data vizării 03.12.2018	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării .....
Următorul termen de vizare 03.12.2023	Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare .....
Loc ștampilă ANRE Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării	*Loc ștampilă ANRE* Data vizării .....
Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare	Următorul termen de vizare .....

INSEMEX Petrosani
GANEx

A T E S T A T

PRIVIND CAPACITATEA REALIZĂRII DE ACTIVITĂŢI SPECIFICE

Numărul atestatului: GANEx.Q.2020.(64).12.2535

4 Atestare privind asigurarea capacităţii realizării de activităţi specifice Normativului NEx 01-06 de proiectare, montaj, punere în funcţiune, control, inspecţie, întreţinere, mentenanță, revizii, reparații instalații tehnice în medii Ex

5 **Solicitator: SC ELBIM GRUPSERV SRL,** loc. Onești, str. Cauciucului 16/1, jud. Bacău

6 **Beneficiar utilizator: SC ELBIM GRUPSERV SRL**

Atestatul privind capacitatea realizării de activităţi specifice se referă la specificaţiile prezentate în ANEXĂ

7 INSEMEX-GANEx, atestă pentru solicitator că are capacitatea necesară realizării de activităţi specifice Normativului NEx 01-06 precizate la pct. 4 dezvoltate pe cerinţele SR EN ISO 9001:2015, SR EN 60079-14:2014/AC:2016, SR EN 60079-17:2014, SR EN 60079-19:2011/A1:2015 şi SR CEN ISO/TS 29001:2015.

8 Prezentul atestat se bazează pe Chestionarul de evaluare a capacităţii nr. 64/2020.
Atestatul privind capacitatea realizării de activităţi specifice poate fi retras dacă titularul nu mai satisface cerinţele specificate.
Constituie parte a prezentului atestat, rezultatele reevaluării periodice.

9 Data atestării curente : **04.12.2020**

10 Prezentul atestat expiră la **04.12.2023** cu evaluare periodică anuală în schema INSEMEX-GANEx, şi poate fi retrasă dacă titularul nu mai satisface cerinţele privind asigurarea calităţii.

11 Prezentul atestat poate fi reprodus numai în totalitatea sa şi fără nici o modificare, inclusiv anexa.

Supraveghere I **Supraveghere II**

Acest atestat este acordat având în vedere condiţiile generale INSEMEX-GANEx şi este valabil juridic numai însoţit de adresă oficială INSEMEX.

Dosar GANEx nr. 2535/2020 Petroşani, 04.12.2020
Pagina 1 din 2

Grupul tehnic de atestare a respectării cerințelor Normativului GANEx
INSEMEX GANEx PETROŞANI NEx 01-06
DR. ING. ŞTEFAN-BURIAN

INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE
PENTRU SECURITATE MINIERĂ SI PROTECTIE ANTIEXPLOZIVĂ
Str.Gen.V.Milea nr.32-34 Petrosani 332047 România
Tel.(++4)0254541621,22,; Fax.(++4) 0254546277
E-mail : insemex@insemex.ro.

A T E S T A T
PRIVIND CAPACITATEA REALIZĂRII DE ACTIVITĂŢI SPECIFICE

Numărul atestatului : GANEx.Q.2020.(64).12.2535

Anexa

Metode de protecţie la explozie pentru care a fost evaluat titularul:
Activităţi specifice de proiectare, montaj, punere în funcţiune, control, inspecţie, întreţinere, mentenanţă, revizii, reparaţii instalaţii tehnice în medii Ex pentru tipurile de protecţii:

Capsulare antideflagrantă (d)
Securitate intrinsecă (i)
Securitate mărită (e)
Încapsulare în masă (m)
Protecţie (n)
Presurizare (p)
Protecţie prin carcasă (t)
Echipamente neelectrice şi materiale fără pericol de scântei mecanice şi electricitate statică.
Carcase antideflagrante (d)
Securitate constructivă (c)
Controlul surselor de aprindere (b)
Imersie în lichid (k)

Responsabilul activităţii:

ADMINISTRATOR
ION MOCANU

Responsabil AQ:

CRISTINEL IRIMIA

Tipuri de echipamente din instalaţiile tehnice pentru care a fost evaluat titularul:

Motoare, transformatoare, generatoare, servomotoare liniare şi rotative
Capsulări, cutii de borne şi plăci de borne
Instrumentaţie, echipamente de măsură şi comandă
Senzori, traductoare şi comutatoare de semnalizare
Pompe, ventilatoare, compresoare

Prezentul atestat nu poate fi folosit fără identificarea documentară menţionată mai sus şi înţelegerea scrisă cu beneficiarul.

Specificaţii adiţionale pentru supraveghere:
Specificaţiile adiţionale prevăzute în fiecare caz de atestare, privind securitatea la explozie şi cerinţele suplimentare pentru protecţia la explozie care rezultă pentru supravegherea în schema GANEx cu reevaluare anuală şi reciclare la trei ani.
Atestatul nu poate fi folosit fără specificaţiile adiţionale menţionate.

Grup tehnic de lucru:

Dr. ing. Mihai Magyari

Dr. ing. Dragoş Fotău

Dr. ing. Colda Cosmin

Numărul anexei 1/1

INSPECŢIA DE STAT PENTRU CONTROLUL CAZANELOR, RECIPIENTELOR SUB PRESIUNE ŞI INSTALAŢIILOR DE RIDICAT
INSPECŢIA TERITORIALĂ ISCIR BACĂU

BC/CR4/N/20,53/2115/0/11.01.2023

AUTORIZAŢIE

(conform procesului-verbal nr. 37C - 005 din 10.01.2023)

1. Persoana juridică: **ELBIM GRUPSERV S.R.L. Onești**

str. Cauciucului, Nr. 16, scara A, ap. 1, jud. Bacău

CUI: 33692790; J4/956/2014

Tel.: 0746635737, e-mail: office@elbim.ro

Subdiviziunea care desfăşoară activitatea autorizată:

punct de lucru ELBIM GRUPSERV S.R.L. Onești, bulevardul Mărășești, nr. 3, jud. Bacău, tel. 0745048083/0746635737, office@elbim.ro

2. Domeniul de autorizare:

MONTARE, PUNERE ÎN FUNCŢIUNE, REPARARE ŞI ÎNTREŢINERE

la instalaţii de ardere şi instalaţii de automatizare pentru cazane şi

la sisteme de automatizare pentru centrale termice

3. Personal tehnic de specialitate:

- Responsabil cu supravegherea lucrărilor (RSL-IP): ing. Daniela Mocanu

4. Menţiuni:

Orice modificare care conduce la neîndeplinirea cerinţelor în baza cărora s-a acordat autorizaţia, trebuie anunţată la ISCIR de către persoana juridică autorizată, în termen de cel mult 15 zile de la data la care aceasta s-a produs.

Irinel-Petruş Iancu

Inspector Şef

Str. Erou Gheorghe Nechita nr. 2,
jud. Bacău Cod 600011, BACĂU - ROMÂNIA
Telefon: (+40334) 405. 432
Fax: (+40334) 405. 433
Web: www.iscir.ro
Email: bacau@iscir.ro

Cod fiscal: 6617014
Banca : Trezoreria Municipiului Bacău
Cont IBAN: RO56TREZ061501701X016347
(facturare a veniturilor)
Operator de date cu caracter personal nr. 17290
1/1

Certificate

TQA certifying your quality

TOTAL Q ARM ΕΠΕ Management Certification Body

58, Menandrou str. 55534 Pilea Thessaloniki, Greece
www.totalqarm.com

ESYD
945-3/11.10.2018
ISO/IEC 17021-1/2015

CERTIFICATE

No. 451.2 C

Quality Management System implemented by
Se confirmă că sistemul de management calitate implementat de

ELBIM GRUPSERV SRL

Sediu: oraș Onești str.Cauciucului nr.16/1, jud. Bacau

have been evaluated by **TOTAL Q ARM** Management Systems Certification Body
*a fost evaluat de **TOTAL Q ARM** organism de Certificare Sisteme de Management*

and it is according with standards requirements of
și este conform cu cerințele standardului

ISO 9001: 2015

The Quality Management System is applicable to the following activities: design of electric lines, overhead or underground, with nominal voltages of 0,4 kV ÷ 20 kV, transformer stations with maximum nominal voltage of maximum 20 kV, medium voltage stations, as well as the medium voltage electric power of high- voltage; execution of overhead or underground lines with rated voltages of 0,4 kV ÷ 20 kV, transformer stations with an upper rated voltage of maximum 20 kV, medium voltage stations, as well as the medium voltage part of the high voltage power stations ; design and execution of electrical installations and automation, electrical earthing and protection against electric shock, electric drives and rewinding of electric motors for 0,4 and 6 KV, design, installation, connection and service of telecommunication networks; testing of equipment and power plants.

Sistemul de management al calității este aplicabil următoarelor activități: proiectare de linii electrice, aeriene sau subterane, cu tensiuni nominale de 0,4 kV ÷ 20 kV, posturi de transformare cu tensiunea nominală superioară de cel mult 20 kV, stații de medie tensiune, precum și partea electrică de medie tensiune a stațiilor de înaltă tensiune; executare de linii electrice, aeriene sau subterane, cu tensiuni nominale de 0,4 kV ÷ 20kV, posturi de transformare cu tensiunea nominală superioară de cel mult 20 kV, stații de medie tensiune, precum și partea electrică de medie tensiune a stațiilor de înaltă tensiune; proiectare și execuție lucrări de instalații electrice și automatizari, instalații electrice de impământare și protecție impotriva trăsnetului, acționări electrice și rebobinări electromotoare pentru 0,4 și 6 KV, proiectare, instalare, conectare și service rețele de telecomunicații; incercări de echipamente si instalații electroenergetice

First Certificate date: 30.10.2017
Data emiterii certificatului initial
Current Certificate date: 29.10.2020
Data emiterii certificatului actual

The certificate is valid until 28.10.2023 under the annual visa:
Certificatul este valabil pana la 28.10.2023 cu conditia aplicarii vizei anuale la

28.10
2021

TQA

PRESIDENT of BOARD
PRESEDINTE
CONSILIU DIRECTOR

Dr. Eng.
EMILIAN COSTAS

TOTAL Q ARM reserves the right to suspend, cancel or withdraw of this Certificate for non-compliance procedure PG.TQA 81 *Requirements for organizations that need management system evaluation / certification*
TOTAL Q ARM isi rezerva dreptul de a suspenda, retrage sau anula prezentul Certificat pentru nerespectarea procedurii PG.TQA-81 Cerinte pentru Organizatiile care solicita evaluarea / certificarea sistemelor de management

TQA certifying your quality

Certificate

TQA certifying your quality

TOTAL Q ARM ΕΠΕ Management Certification Body

58, Menandrou str. 55534 Pilea Thessaloniki, Greece
www.totalqarm.com

ESYD
945-3/11.10.2018
ISO/IEC 17021-1/2015

CERTIFICATE
No. 451.2 M

Environmental Management System implemented by
Se confirmă că sistemul de management al mediului implementat de

ELBIM GRUPSERV SRL

Sediu: oraș Onești str.Cauciucului nr.16/1, jud. Bacau

have been evaluated by **TOTAL Q ARM** Management Systems Certification Body
*a fost evaluat de **TOTAL Q ARM** organism de Certificare Sisteme de Management*

and it is according with standards requirements of
și este conform cu cerințele standardului

ISO 14001: 2015

The Environmental Management System is applicable to the following activities: design of electric lines, overhead or underground, with nominal voltages of 0,4 kV ÷ 20 kV, transformer stations with maximum nominal voltage of maximum 20 kV, medium voltage stations, as well as the medium voltage electric power of high- voltage; execution of overhead or underground lines with rated voltages of 0,4 kV ÷ 20 kV, transformer stations with an upper rated voltage of maximum 20 kV, medium voltage stations, as well as the medium voltage part of the high voltage power stations ; design and execution of electrical installations and automation, electrical earthing and protection against electric shock, electric drives and rewinding of electric motors for 0,4 and 6 KV, design, installation, connection and service of telecommunication networks; testing of equipment and power plants.

Sistemul de management al mediului este aplicabil următoarelor activităţi activităţi : proiectare de linii electrice, aeriene sau subterane, cu tensiuni nominale de 0,4 kV ÷ 20 kV, posturi de transformare cu tensiunea nominală superioară de cel mult 20 kV, staţii de medie tensiune, precum şi partea electrică de medie tensiune a staţiilor de înaltă tensiune; executare de linii electrice, aeriene sau subterane, cu tensiuni nominale de 0,4 kV ÷ 20kV, posturi de transformare cu tensiunea nominală superioară de cel mult 20 kV, staţii de medie tensiune, precum şi partea electrică de medie tensiune a staţiilor de înaltă tensiune; proiectare si execuţie lucrări de instalaţii electrice şi automatizari, instalaţii electrice de impământare şi protecţie impotriva trăsnetului, acţionări electrice şi rebobinări electromotoare pentru 0,4 si 6 KV, proiectare, instalare, conectare şi service reţele de telecomunicaţii; incercări de echipamente si instalaţii electroenergetice.

First Certificate date: 30.10.2017
Data emiterii certificatului initial
Current Certificate date: 29.10.2020
Data emiterii certificatului actual

28.10
2021

The certificate is valid until 28.10.2023 under the annual visa:
Certificatul este valabil pana la 28.10.2023 cu conditia aplicarii vizei anuale la

TQA

PRESIDENT of BOARD
PRESEDINTE
CONSILIU DIRECTOR

Dr. Eng.
EMILIAN COSTAS

TOTAL Q ARM reserves the right to suspend, cancel or withdraw of this Certificate for non-compliance procedure PG.TQA 81 *Requirements for organizations that need management system evaluation / certification*
TOTAL Q ARM isi rezerva dreptul de a suspenda, retrage sau anula prezentul Certificat pentru nerespectarea procedurii PG.TQA-81 Cerinte pentru Organizatiile care solicita evaluarea / certificarea sistemelor de management

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Certificate

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TOTAL Q ARM ΕΠΕ Management Certification Body

58, Menandrou str. 55534 Pilea Thessaloniki, Greece
www.totalqarm.com

ΕΣΥΔ
MS CERTIFICATION 945

CERTIFICATE

No. 451.2 S

Health and Safety Management System implemented by
Se confirmă că sistemul de management sănătăţii şi securităţii in muncă implementat de

ELBIM GRUPSERV SRL

Sediu: oraş Oneşti str.Cauciucului nr.16/1, jud. Bacau

have been evaluated by **TOTAL Q ARM** Management Systems Certification Body
*a fost evaluat de **TOTAL Q ARM** organism de Certificare Sisteme de Management*

and it is according with standards requirements of
şi este conform cu cerinţele standardului

ISO 45001 : 2018

The Health and Safety Management System is applicable to the following activities: design of electric lines, overhead or underground, with nominal voltages of 0,4 kV ÷ 20 kV, transformer stations with maximum nominal voltage of maximum 20 kV, medium voltage stations, as well as the medium voltage electric power of high- voltage; execution of overhead or underground lines with rated voltages of 0,4 kV ÷ 20 kV, transformer stations with an upper rated voltage of maximum 20 kV, medium voltage stations, as well as the medium voltage part of the high voltage power stations ; design and execution of electrical installations and automation, electrical earthing and protection against electric shock, electric drives and rewinding of electric motors for 0,4 and 6 KV, design, installation, connection and service of telecommunication networks; testing of equipment and power plants.

Sistemul de management al sănătăţii si securităţii ocupaţionale este aplicabil următoarelor activităţi: proiectare de linii electrice, aeriene sau subterane, cu tensiuni nominale de 0,4 kV ÷ 20 kV, posturi de transformare cu tensiunea nominală superioară de cel mult 20 kV, staţii de medie tensiune, precum şi partea electrică de medie tensiune a staţiilor de înaltă tensiune; executare de linii electrice, aeriene sau subterane, cu tensiuni nominale de 0,4 kV ÷ 20k, posturi de transformare cu tensiunea nominală superioară de cel mult 20 kV, staţii de medie tensiune, precum şi partea electrică de medie tensiune a staţiilor de înaltă tensiune; proiectare şi execuţie lucrări de instalaţii electrice şi automatizari, instalaţii electrice de impământare şi protecţie impotriva trăsnetului, acţionări electrice şi rebobinări electromotoare pentru 0,4 şi 6 KV, proiectare, instalare, conectare şi service reţele de telecomunicaţii; incercări de echipamente si instalaţii electroenergetice

First Certificate date: 24.04.2019
Data emiterii certificatului initial
Current Certificate date: 14.04.2022
Data emiterii certificatului actual

The certificate is valid until 13.04.2025 under the annual visa:
Certificatul este valabil pana la 13.04.2025 cu conditia aplicarii vizei anuale la

13.04 2023

13.04 2024

PRESIDENT of BOARD
PRESEDINTE CONSILIU DIRECTOR
Dr. Eng.
EMILIAN COSTAS

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