

AUTOMATION



• TO-PASS®: Scalable Telecontrol Solutions

• Application Examples

WAGO®
INNOVATIVE CONNECTIONS



TO-PASS®

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TO-PASS® provides you with the solution from one hand.

TO-PASS®: Scalable Telecontrol Solutions from



Mobile, fast measured value acquisition from the Internet



Visualization available everywhere via Internet (password protected), including current value representation and line recorder for history of measured values



SAP logistic connection, or similar



Error message via: SMS, e-mail, fax, phone call

www...

Open system with user-selected Internet server and „MySQL“ database



Use of GSM (GPRS, CSD, SMS) mobile radio network



TO-PASS® S Telecontrol Module

- Convenient, compact solution with integrated GSM modem and I/Os
- 4 digital inputs
- 2 analog inputs
- 4 digital outputs

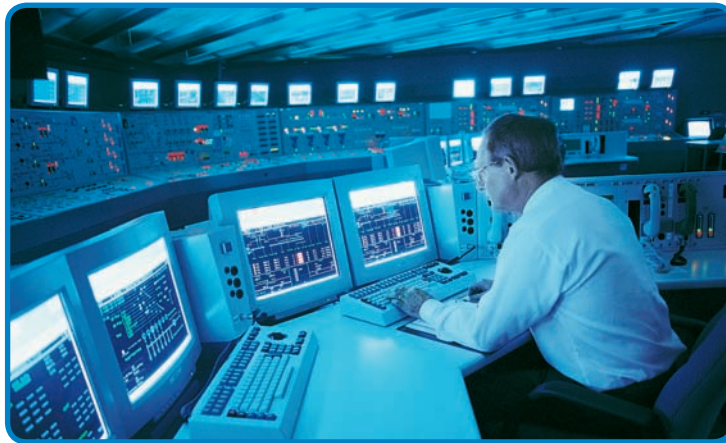
TO-PASS® M Telecontrol Module

- 8 digital inputs
- 8 analog inputs
- 4 digital outputs
- 4 analog outputs

TO-PASS® Outdoor Telecontrol Module

- IP66 housing for outdoor installation
- Battery provides protection from mains failure
- Integrated GSM antenna

Fault Detector to Intelligent Telecontrol PLC



Control station/control system



Transmission based on the international IEC 60870-5-101/104 telecontrol protocol standard



TO-PASS® Mobile Telecontrol Module

- Compact module with integrated GPS receiver, GSM modem and I/Os, for direct mounting.
- Monitoring of measured values and position
- IP66 housing for outdoor installation on vehicles.



750-872 Telecontroller

- Process data transmission in acc. to IEC608705-5-101/-104
- Telecontrol substation
- Optional programming via CoDeSys (PLC functionality)
- Easy parameterization in CoDeSys
- Comprehensive range of 750 and 753 Series I/O modules

Monitoring of pump stations using TO-PASS®

Task

The checking and maintaining of the pump stations must be carried out with much less effort. The stations should report by themselves so that only targeted check visits are necessary. A service that is considerably reduced through pre-calculated maintenance intervals should additionally make a more effective maintenance possible.

Solution

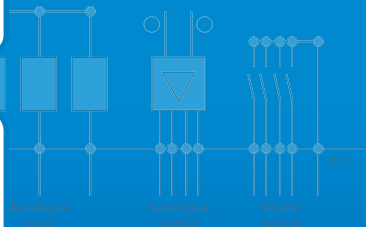
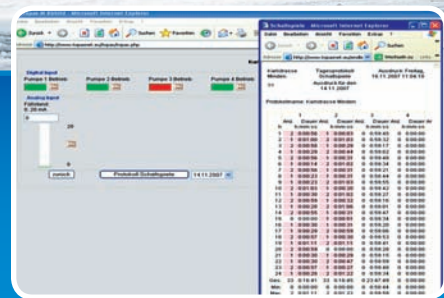
All measurement values and error messages are connected to a central server via the TO-PASS® Module and can therefore be selected as required via a computer connected to the Internet. Each station is displayed on a selection card and with a few clicks, all historic and current measurement values are made available. All pump cycles are stored and are passed on immediately per phone call, SMS, fax or e-mail in case of malfunction.

The sturdy TO-PASS® Outdoor installed in an IP66 enclosure with heater and integrated battery guarantees continued operation with power failures.

Result

The continued monitoring of the pump stations is guaranteed without using staff or by causing extra driving costs. The pumps allow themselves to be switched remote per computer or mobile telephone. The use of complicated control systems is saved additionally as these can be accessed from any PC connected to the Internet via a password.

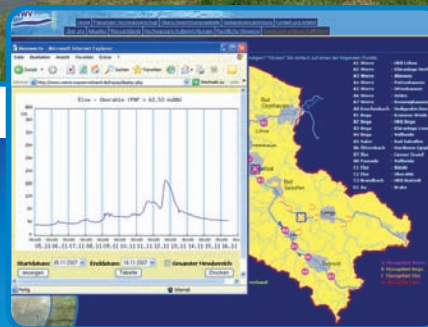
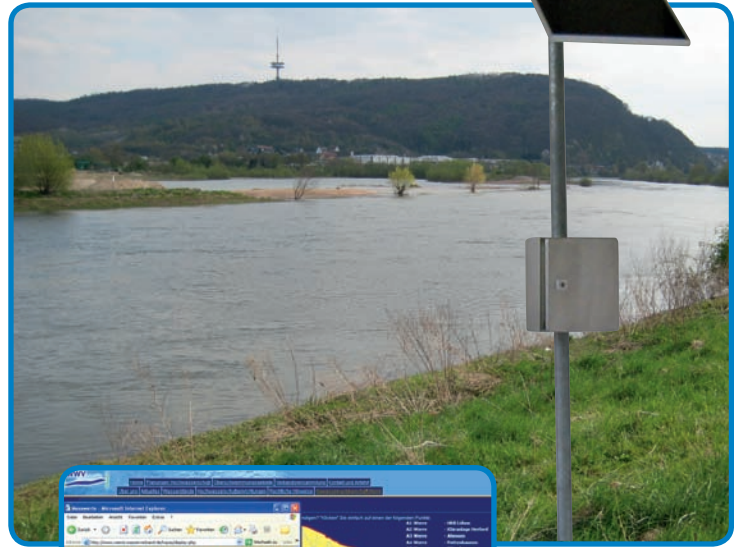
The maintenance cycles are optimized as the duty cycle and frequency are recorded and stored centrally.



Level measuring and flood control measures using TO-PASS®

Task

For controlling the filling level of waterways, channels and dams, there should be a possibility to view the water level quickly and without delay independent of the location. Water associations, municipalities, cities and local authorities, all of these require information for the water levels as soon as possible, especially during periods where there is a risk of high water. A reliable and immediate alarm system that is carried out from a stand-alone system without additional wiring is the objective. Another advantage would be that the measurement values can be read-off cost-effective and without limit.



Solution

The TO-PASS® fulfills all of these. The common dialing is not required any more due to the wireless GPRS networking with the TO-PASS®, the measurement values can be called-up at any time, always up-to date and comfortably via the internet using a password. The data is stored safe and without limits in a central server with the MySQL-Database. A stand-alone unit with battery or optionally with solar or fuel cell operation guarantees complete independency.

When a malfunction occurs, the alarm message is triggered immediately per phone call, SMS, e-mail or fax.

Result

Without having any additional control systems, the TO-PASS® convinces through its cost-effective and efficient solution as well as through measurement values that are continually updated. Security against power failure is given as well as the safe data storage of the history and the malfunction documentation. Comfortable calling up of the data that is available via Internet make the time extensive control trips to the individual level locations unnecessary. WAGO offers you the complete measurement station with all components, including the measurement technology.

Building monitoring and networking using TO-PASS®



Task

All public buildings in the municipalities must be monitored as well as controlled in a cost efficient and effective manner. It must also be possible to control systems such as the heaters. Malfunctions should be detected as fast as possible without each of the buildings having to be checked on-location. It should also be possible to automatically read off the meters for heat, electric and water in all buildings.

Solution

TO-PASS® enables the municipalities to permanently monitor all buildings as well as to switch and regulate the buildings remote. The TO-PASS®-server records all measurement values via a database, presents line diagrams and stores the values infinitely. The cyclic transmission of the value can be set according to the requirements, an immediate transmission is carried out in case of malfunction as well as an alarm message per SMS, fax and phone call.



Visualization available everywhere via Internet (password protected), including current value representation and line recorder for history of measured values



Result

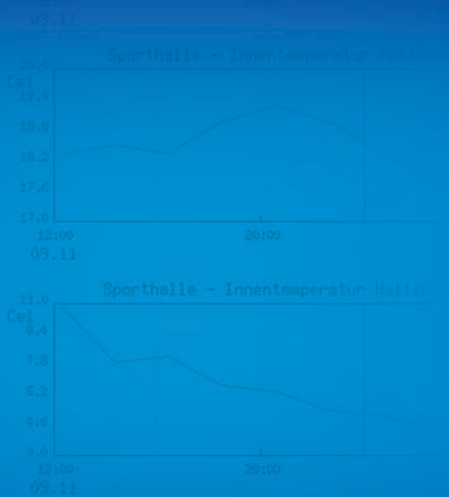
The municipalities have a permanent monitoring of their buildings, irrelevant of their quantity. Data and measurement values can be called up on the internet at any time. Using a chain of alarms that can be set, the buildings are also monitored safe on weekends. A convincing factor here is the low costs that are less than €10 per month as well as the trips that have to be made to the individual buildings.



Switch the street lighting per SMS with TO-PASS®

If you need light... ... we have the technology for it!

- Use the advantages of the industrial approved TO-PASS® modules.
- We are the market leader for GSM technologies in the field of telecontrol technologies.
- Our system enables the effective and cost efficient implementation of street lighting that can be switched per SMS.
- The TO-PASS® is mounted direct without any additional expenditure and is taken into operation via GSM.



TO-PASS® ...and you won't be alone in the dark any more.

TO-PASS® connecting to water works



Task

Water works must be up and down and controlled periodically by the operating staff. This should be carried out in much less time. The stations should report themselves individually for maintenance or in case of malfunction. The flow rate of fresh water should be monitored permanently. The maintenance should be able to be calculated up front so that these intervals become more effective.

Solution

The TO-PASS® Module records all data of the water works and transfers these wireless to a central server in internet, which can be accessed via any computer connected to internet.

You are able to switch the station remote via computer or mobile telephone. TO-PASS® passes an immediate message per SMS, phone call, fax or e-mail. All alarms and their acknowledgement are stored in the alarm management.

Result

You save staff and driving costs and the permanent monitoring of the station is still guaranteed. The service can be optimized considerably by pre-calculating the maintenance intervals using the pump cycles as a basis. The possibility of remote switching and telecontrolling on the station make additional excursions unnecessary. All events are archived on the server for the purpose of quality assurance. In standard cases, the costs for the GSM transfer are less than €15 per month.

Weir control using TO-PASS®



Task

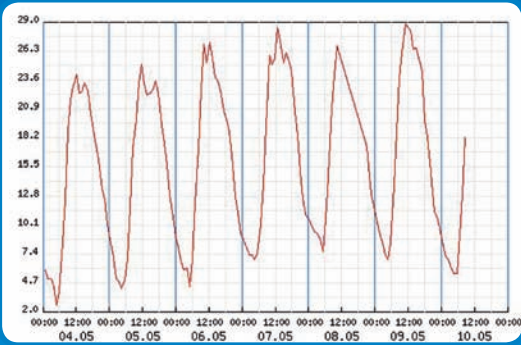
The weir of a local authority regulates the flow from a village pond to a stream that leads through the village. The weir should be monitored permanently and the level of the stream is read-out in a data storage via a main computer each week.

Solution

TO-PASS® is applied because it offers several functions in one unit:

- Error messages via SMS, fax, e-mail, and over the phone
- Data logger
- Telecontrol readings via data calls made comfortably from the office

The users were especially convinced as to how the measurement value was displayed on the screen of the main computer. This is carried out as a line chart where the values can be additionally stored as MS Excel files.



Result

TO-PASS® provides the local authorities - without additional cost expenditure - with a guarantee of a simple and periodic check of the run of the stream and enables a rash intervention when the level should rise.

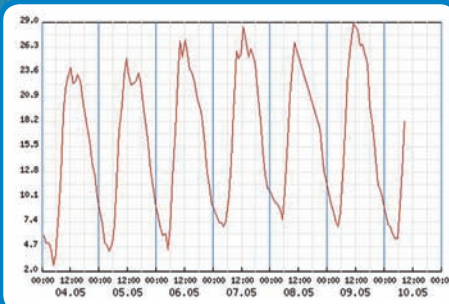
Bio-gas plant inspection using TO-PASS®



Task

For the optimal planning of the plant, it is necessary to monitor and check the stocking of the materials on a regular basis and, these should especially be automatically linked with the disposition.

Next to the standard control system, it is also important to integrate an additional cost-effective and safe system for monitoring the limit values that triggers the alarm in case of malfunction. By doing this, the plant maintenance and the respective efforts for service are reduced considerably.



Solution

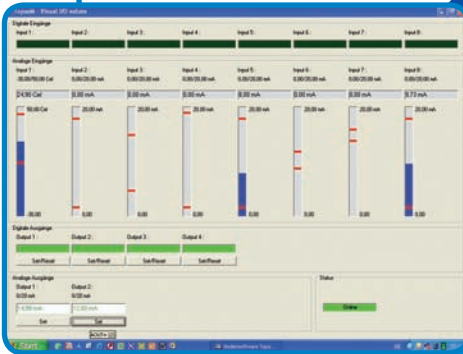
The wireless GPRS network of the TO-PASS® allows all process values to be called up and displayed cyclic in Internet. The TO-PASS® Module can be connected to a control system or the distribution without problem which enables the responsible forwarding agent to be ordered automatically when the filling level is undershot.

The visualization shows the current values, contains a history and is saved in an infinite processing database on its own server. When a malfunction occurs, the message is triggered immediately per phone call, SMS, e-mail or fax.

Result

The TO-PASS® provides the operator with an efficient monitoring of their systems and immediate alarm triggering in case of malfunction. Using the direct link with Internet, a control or production planning system, it guarantees an automated running of the disposition as well as the current plant data that is available worldwide.

Stable monitoring using TO-PASS®



Task

An agricultural business wants to have the breeding of their animals continually monitored and secured. The feeding and climate control are carried out via a separate control system. The operator wants an immediate alarm triggered in case of feeding problems, inside temperature deviations or in case of a break in.

As the stable is located outside the village, a telephone installation would be very expensive.

Solution

The TO-PASS® had been selected as it operates on the basis of the GSM network and no further installations are required due to the integrated modem. The farmer became familiar with it immediately due to its simple handling, especially when programming. The minimum basis charge of € 3.95 per month (plus occurring SMS costs, depending on the provider) in comparison to €15 saves the farmer €11.05 per month as well as the high installation costs of a telephone line. TO-PASS® has an important responsibility and reports malfunctions in the pig pen immediately per voice text and SMS using an acknowledgement function.

Further possibilities for application in agriculture

- Alarm
- Filling level check with silos or tanks
- Pressure monitoring in pipeline systems
- Cooling aggregate monitoring
- Air conditioning monitoring

Result

The animals are monitored at all times and without great effort for the farmer, cost efficient and effectively.

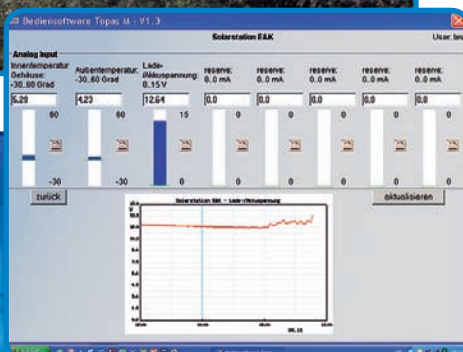
Networking of tank farms with TO-PASS®



Task

Costly and insecure telephone connections gave reason for a European wide project for the wireless networking of up to 1000 tank farms. The individual farm request had to be carried out automatically. Next to the filling level, the pressure and, if required, the temperature should also be transferred in the same way.

The customer wanted to optimize their logistics to enable the disposition to view the filling level at all times and to react automatically.



Solution

Using the wireless GPRS networking from TO-PASS®, it is possible to connect all tank farms with the disposition. Each farm transfers their values automatically via a secure Internet dial-up connection. With malfunctions, the TO-PASS® triggers the alarm immediately per telephone, SMS, e-mail or fax. All data is stored on a central server with unlimited space that is connected direct with the disposition. When the filling level falls below a certain value, the disposition makes an immediate order by the responsible forwarding agent in the respective region.



Result

The TO-PASS® Module, installed in a weatherproof IP66-TO-PASS® Outdoor enclosure supplies a wireless complete overview of the desired data. The compact design of the TO-PASS® Outdoor allows simple and fast assembly, is fitted with an internal aerial and with its integrated battery, guarantees protection from mains failure at all times.

An automatic and cost effective run of the tank farm disposition is only possible after the direct link of the TO-PASS® with the disposition.

District heating network monitoring using TO-PASS®



Task

The municipal utilities want to have their district heating network monitored as well as have the temperature network controlled continually. A message should be released immediately in case of a leak or drop in pressure in one of the pipelines.



The graphic display of the measurement point on a city map in internet allows the fault to be localized and a reaction to initialized quickly.



Solution

The TO-PASS® Module allows the continual measuring at all distribution and node points for the continual monitoring of the temperature as well as pressure within the district heating network. The measurement values are transferred to a central server that can be accessed from any computer connected to the Internet. The log-in is carried out using a password.

Result

Expensive control systems and extensive visualizations are saved due to the use of the TO-PASS® and the service becomes more efficient and cost effective due to being able to view the cause of error much quicker. The permanent monitoring of the pipelines and immediate reactions with malfunctions prevent downtimes and the loss of heat. Furthermore, illegal consumers are localized immediately.

Networking of silos using TO-PASS®



Task

The continual stocking of materials for the production has to be guaranteed using an optimal silo planning. For this purpose, it is necessary to measure the filling levels of the silos and especially the automatic linking of these to the disposition.

Solution

The wireless GPRS network of the TO-PASS® allows all current process values of the different silos to be displayed in internet as well as to be connected with a control system or with the disposition. When malfunctions occur, the TO-PASS® sends an immediate alarm per phone call, SMS, e-mail or fax. All data is saved on a central server in a close period that is optionally connected to a control system or production planning system.

Result

The TO-PASS® Outdoor, installed in a weatherproof IP66 enclosure, supplies a wireless complete overview of the desired data. The compact design of the TO-PASS® Outdoor allows simple and fast assembly, is fitted with an internal aerial and with its integrated battery, guarantees protection from mains failure at all times.

The direct link of the TO-PASS® with the internet or a control system secures an automated running of the silo disposition and guarantees that the current silo data that is always available.



Server monitoring using the TO-PASS®

Task

Company servers are the nerve centre as well as the focal and central point of the total flow of data. The complete data transfer is processed within the company and outside the company via this.

Especially in the last years the dependency has palpably increase at an enormous rate so that normal operation in the company is almost impossible when the server fails. Any-one can confirm this that has already lived through this experience, even when these are trivial things where data has not been saved from the previous day.



Solution

With its special connection, TO-PASS® provides you with an excellent solution to monitor the server day and night and, in case of malfunction, to inform you immediately or if necessary, will also carry out a server reset. You do not need any additional cable connections or networks, the TO-PASS® is all you need to inform you via the wireless GSM Mobile network. The message will be sent to you per phone call, SMS, fax or per e-mail and, when required can be sent to several receivers when required.

Result

The TO-PASS® provides a continual, reliable and cost effective monitoring of your server. Through the best possible implementation of the GSM mobile network, expensive telephone connections and costs as well as cost extensive and complicated installation of line connections is done without.

TO-PASS® Mobile – conforms to the new EC Directive for transporting goods

Since the 01.01.2006, this directive commits you to:

- create a data protocol on a regular basis with regard to the transporting temperature where at least the location, time and date are entered in suitable periods. The protocol must have been checked, signed and be able to be called up at any time.
- at least 1 year of the protocolled data must be archived and when required must be provided for viewing using sheets.
- carry out maintenance work on the chiller, document this and ensure the function of the chiller at all times.



Solutions and results

- permanent and cost effective online connection to the truck
- comfortable call-up of the data worldwide over the internet using a password
- safe and unlimited storage of measurement values via a central server
- current vehicle position recognition in internet
- immediate alarm message per phone call, SMS, e-mail or fax in case of malfunction
- the driver can be reached at all times





TO-PASS® provides you with solutions from one hand.

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