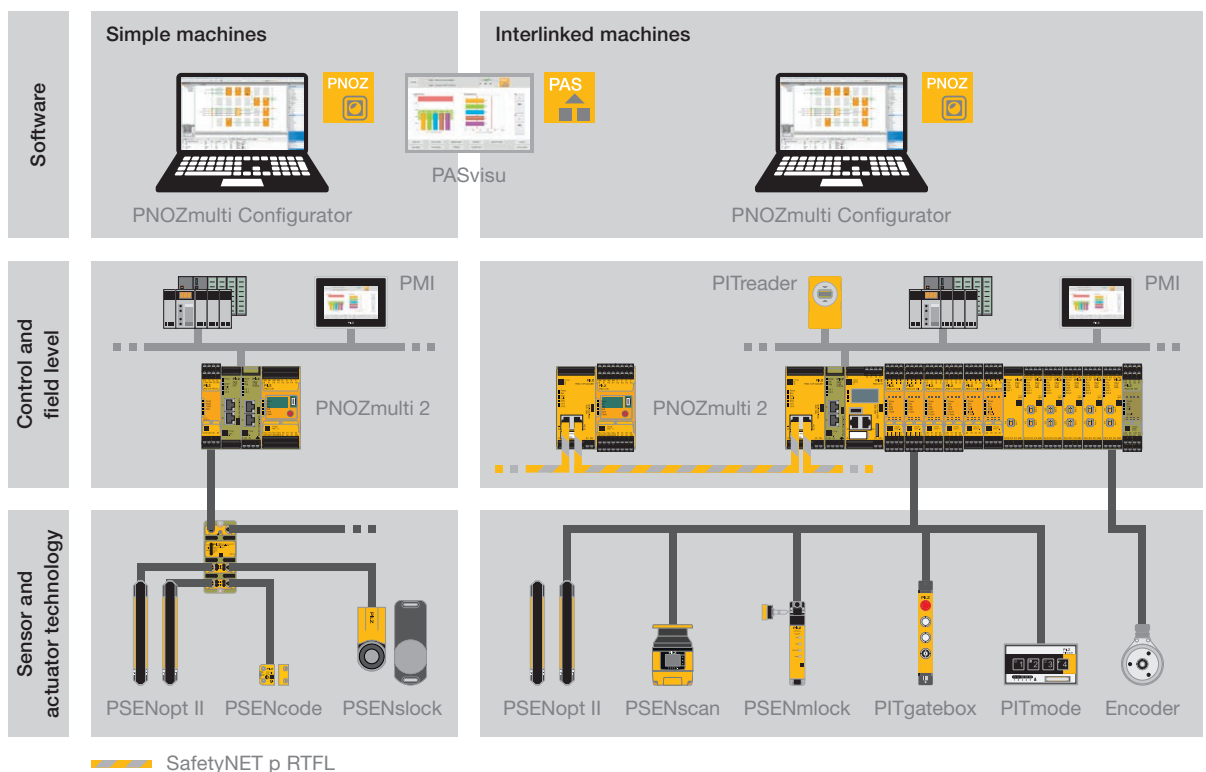PNOZ

▶ Configurable safe small controllers PNOZmulti 2

Count on the bestseller and the worldwide safety standard for all machine types. The small controllers PNOZmulti have proven themselves in hundreds and thousands of applications when it comes to safeguarding plant and machinery. We continue to write our success story! The second generation of the small safety controllers offers you a modular structure for the hardware, tested software blocks and a high level of connectivity. User-friendly, web-based visualisation and simple diagnostics options reduce downtimes. Complete solutions with actuator technology, sensor technology and operator terminals together with the small controllers PNOZmulti 2 guarantee safe interaction between human and machine and economical safety solutions from a single source.

|	Simple machines	Interlinked machines
Software	PNOZmulti Configurator / PASvisu	PNOZmulti Configurator
Control and field level	PMI / PNOZmulti 2	PITreader / PNOZmulti 2 / PMI
Sensor and actuator technology	PSENopt II PSENcode PSENslock	PSENopt II PSENscan PSENmlock PITgatebox PITmode Encoder

▬▬ SafetyNET p RTFL

Global safety standards – easy, fast, safe

The configurable safe small controllers PNOZmulti are suitable for both simple machines and large automation projects. A wide range of expansion modules, including for special applications, offer you the greatest flexibility in your application. You can use PNOZmulti as the standard for the monitoring of your safety functions independently of the higher-level operation control. The wide range of fieldbus and communications options results in high connectivity. Adaptation to the changing requirements of your application can be implemented quickly, easily and safely thanks to the graphics-based software tool PNOZmulti Configurator. A coordinated complete solution for your automation tasks is available in combination with

▶ Safe sensor technology PSEN
▶ Operator terminals PIT
▶ Decentralised periphery PDP67
▶ Diagnostics and visualisation panels PMIvisu
▶ Web-based visualisation systems PASvisu
▶ Drive solution PMC

– many functions, one solution!
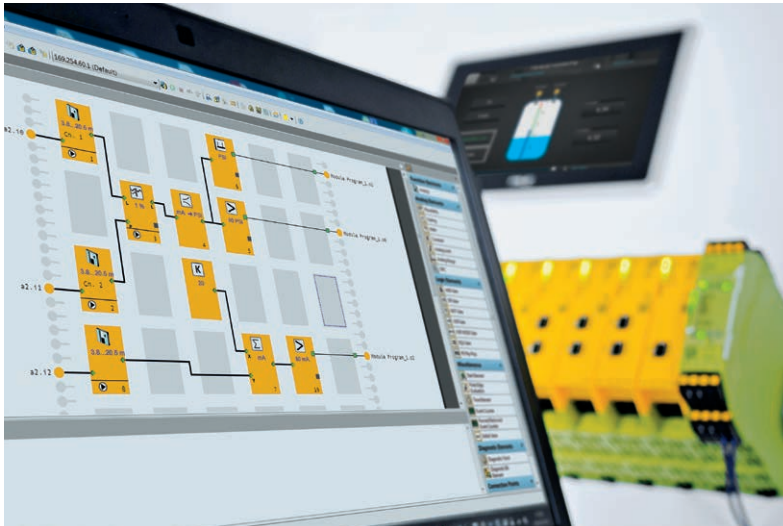
PNOZmulti has an intuitively operated software tool that enables graphic configuration of complex processes without programming knowledge.

All for one and one for all

The software tool PNOZmulti Configurator will impress you with its simple operation: install, open, work intuitively. Furthermore, you have several options for carrying out your diagnostics – for high plant availability and minimal downtimes. The range of fieldbuses and communication possibilities are a major benefit of PNOZmulti. It allows the system to be used independently of the higher-level operation control system. A wide selection of expansion modules ensures maximum flexibility and safety for your application. Input and output modules, motion monitoring modules and link modules are available.

Potential for rationalisation: Safety components cover automation tasks

PNOZmulti is powerful enough to assume complete machine control on smaller machines. You can count on products of an extremely high quality. Moreover, as there is no need for an additional control system, PNOZmulti can make savings in a range of areas, from hardware costs and space in the control cabinet to procurement and stock holding costs.

Your benefits at a glance
- Cost-effective and long-lasting: worldwide safety standard for many automation environments and communication systems
- Just one system from planning to maintenance
- Flexible: configuration using certified software blocks, simple adjustment and adaptation
- Customised costs: exact adaptation to your application using expansion modules
- Minimal machine downtimes and high plant availability through simple, user-friendly diagnostics
- Maximum safety – depending on the wiring, safety categories up to PL e and SIL CL 3
- Simple wiring means short commissioning times
- Potential for rationalisation because safety components cover automation tasks
- Suitable for international use due to worldwide certification
- User-friendly thanks to technical support

Configurable safe small controllers

Keep up-to-date on configurable safe small controllers PNOZmulti:

Webcode:
web150495

Online information at www.pilz.com

# ▶ Configuration software PNOZmulti Configurator

PNOZ

PNOZmulti small controllers make design, configuration, documentation and commissioning simple. Easy diagnostic solutions reduce downtimes on your plant or machinery. Our user-friendly software tools are available to do this. With the PNOZmulti Configurator, you can create your safety circuit on the PC. The software has a broad function and command range so that even large-scale projects can be easily implemented. For user-friendly diagnostics, you can use the tools of the diagnostic solution PVIS. You can keep a close eye on your automation system using the web-based visualisation software PASvisu.
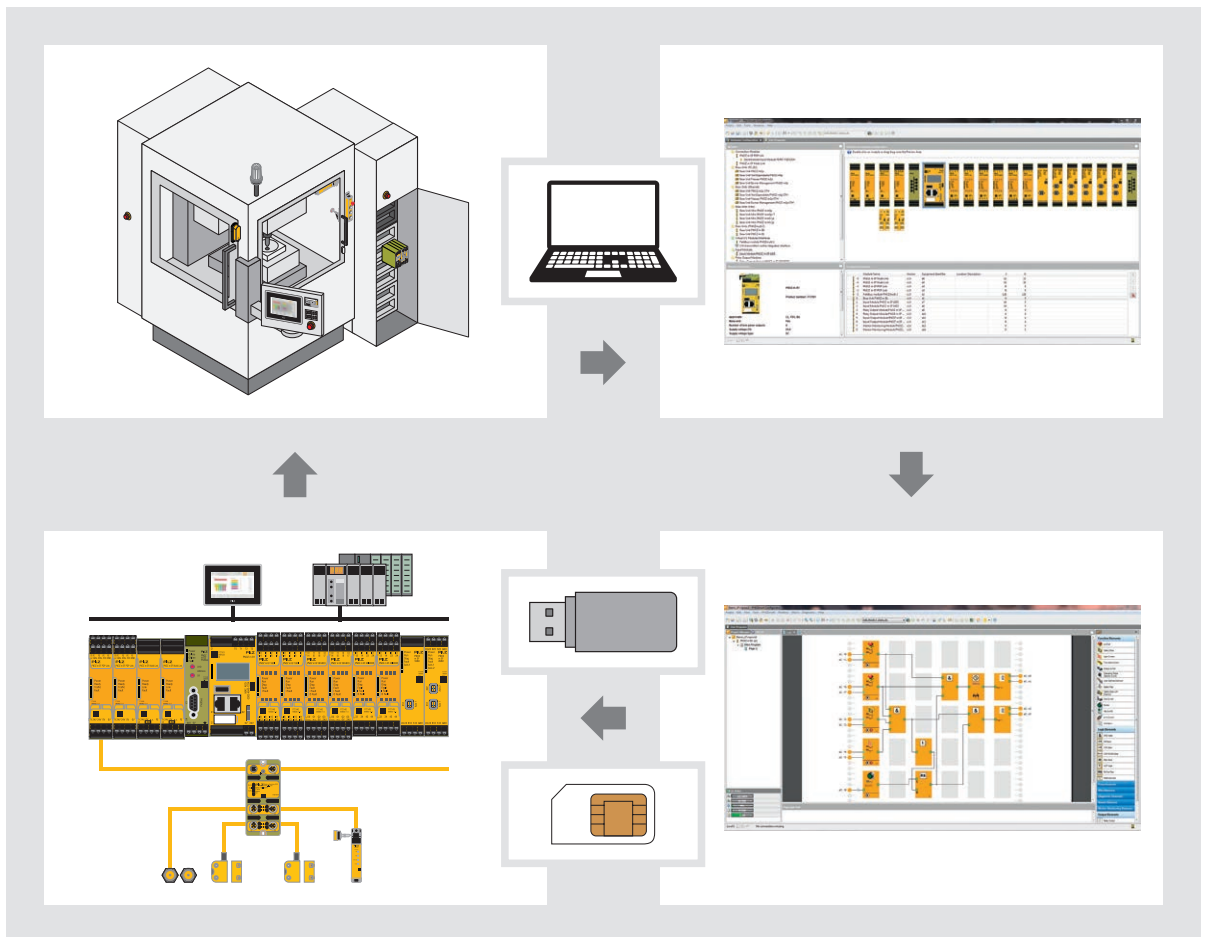
From your application to the solution with PNOZmulti. Configure the hardware and the safety circuit using the convenient software tool PNOZmulti Configurator. This shortens your time-to-market and allows you to harness great cost-saving potential in all engineering phases – from planning all the way to maintenance!

– all-in-one
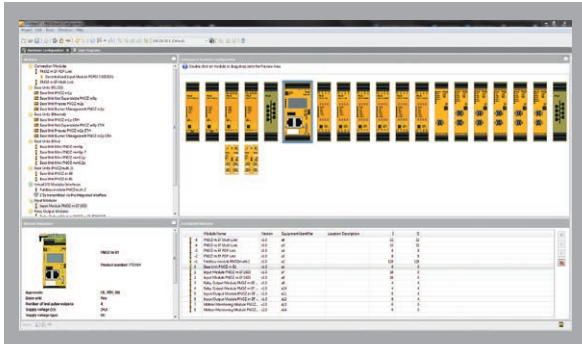
Simple hardware configuration by means of drag&drop.

### Versatile – without programming knowledge

First select the necessary hardware by drag&drop. The hardware consists of a base unit and, if necessary, expansion modules. The number of available inputs and outputs is displayed in table form. The software tool provides support, for example, by listing the expansion modules available for the selected base unit. The tool can also help if the permitted number of expansion modules has been exceeded or if the modules have been positioned incorrectly.
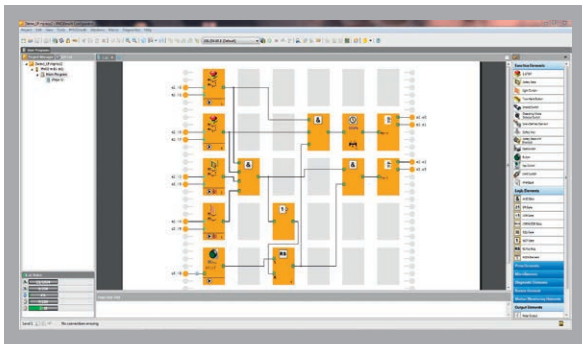
Simple application creation, linking using the mouse.

Mouse used for wiring

All elements of a safety circuit are available to you on the Windows® standard graphics-based user interface as function blocks for input elements such as emergency stop, safety gates, light curtains, analogue measurement values. Relays, semiconductors or safety valves can be selected as output elements. Special applications such as burners, motion monitoring, presses, authorisation, operating mode selection and more can also be conveniently drawn to the user interface, configured for the specific application and linked using logic elements. Comprehensive diagnostic options increase the plant availability and reduce downtimes.
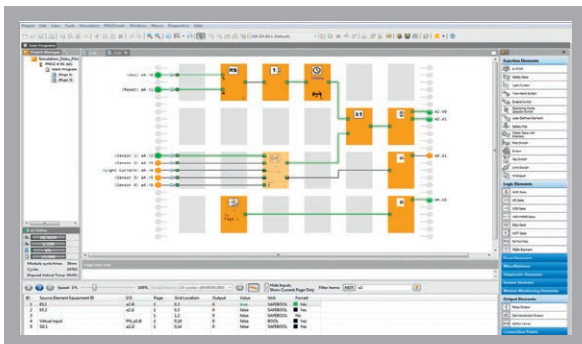
The state of the inputs and outputs of the configured elements and the connections between the elements are displayed.

Error-free through offline simulation

From version 10.9 onwards you can already test your configured user program without the need for hardware by using the Simulation function before commissioning. Simulation opens up considerable savings potential in project planning through the verification of complex logic at the click of a mouse. Simulation helps to reduce risks for human and machine and to lower installation costs.

Configurable safe small controllers

Video tutorials – we provide a video tutorial on our website for every new release.

Online information at www.pilz.com/ pnozmulti-tools

▶ Optimum visualisation and simple diagnostics

Configurable safe small controllers

PNOZ

PAS

PVIS

The configurable safe small controllers PNOZmulti provide you with many options for performing diagnostics: for high plant availability and minimal downtimes. In the software tool PNOZmulti Configurator the diagnostic solution PVIS is only a click away. Or you can rely on our operator terminals PMIvisu with the preinstalled visualisation software PASvisu. You can send status messages to the connected PLC controller via the interfaces Ethernet TCP/IP or Modbus TCP or using the fieldbus module. PNOZmulti units can be connected to all common communication networks.

Software

PNOZ

PVIS

PNOZmulti Configurator

SafetyNET p ®
Be safe about
your automation

PROFI ®
NET

PROFI ®
BUS

Modbus

EtherCAT ®

EtherNet/IP ™

ETHERNET
POWERLINK

CANopen ®

CC-Link

Control and field level

PITreader   PMI

PNOZmulti 2

Sensor and actuator technology

PDP67

PSENopt II   PSENcode   PSENslock

Small controllers PNOZmulti 2 – complete solutions in combination with the web-based visualisation software PASvisu, the operator terminals PMI, the access permission PITreader, the safe sensor technology PSEN and the decentralised periphery PDP67!
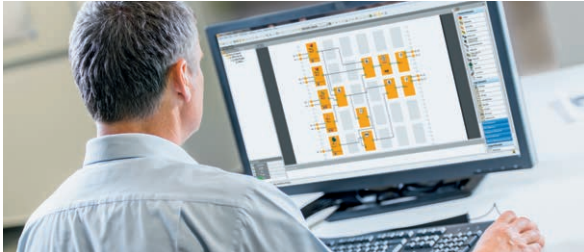
Reducing downtimes using the diagnostic solution PVIS

Reliable and easy diagnostics are a prerequisite for enabling plant and machinery to manufacture efficiently, cost effectively and without interruption. With PVIS Pilz has developed a universal diagnostic solution for the entire range, from small machines to large plants. PVIS helps to visualise diagnostic information for PVIS-enabled controllers, such as small controllers PNOZmulti or drive technology PMC. Together with the PMI operator terminals, this provides you with a complete, fully integrated diagnostic solution. With the PVIS OPC and OPC UA tools, PVIS is available on the basis of standard software interfaces so that it can be integrated in almost any environment. The OPC UA standard is used for Smart Factory plants within the framework of Industrie 4.0. If a fault occurs, features such as plain text messages with precise information on the location, clearly defined responsibilities and integrated first fault display all ensure that production is quickly restarted. The PNOZmulti Configurator contains the PNOZmulti project, texts for diagnostics, proposed solutions and much more. The benefits are obvious: simpler project development, greater flexibility and reduction of downtimes.

Your benefits at a glance
- ‣ Saves time when trouble-shooting and rectifying faults – the machine can be restarted quickly
- ‣ Using the plain text messages, machine operators immediately know which fault has occurred
- ‣ Active support for the operator in rectifying the fault with step-by-step instructions
- ‣ PVIS names the person responsible for rectifying the fault – e.g. a maintenance engineer
- ‣ Less time between machine standstill and starting up again

Keep up-to-date on the software tool "Diagnostic solution PVIS":

Webcode: web150398

Online information at www.pilz.com

Operator terminals PMIvisu with visualisation software PASvisu.

Connection of the configurable safe small controllers PNOZmulti to the visualisation software PASvisu

Use perfectly matched software and the appropriate operator terminals to visualise your plant that uses the small controllers PNOZmulti.

Your benefits at a glance
- ‣ Simple, intuitive handling and maximum suitability for use
- ‣ Use of current web technologies: HTML5, CSS3 and JavaScript
- ‣ Few downtimes thanks to remote access with genuine Client/Server functionality

Further information on PASvisu and PMIvisu can be found on pages 176 and 182.

Configurable safe small controllers

▶ Configurable safe small controllers PNOZmulti 2

PNOZ

You can use the configurable safe small controllers PNOZmulti 2 for safety-related shutdown of plant and machinery safely and in compliance with the standards up to PL e of EN ISO 13849-1 and SIL CL 3 of EN/IEC 62061, irrespective of the machine type, plant type, country or industry. PNOZmulti 2 ensures a controlled and therefore safe stopping of a movement and is used for position monitoring or for interrupting a movement when the user intervenes.

Independent and can be standardised
Your create your safety architecture for the plant-dependent safety functions and independently of the higher-level plant control. Once user programs have been created, they can be flexibly adapted and reused again and again. This provides benefits in terms of time and cost savings that lower your engineering costs from project planning to maintenance.

Modular and flexible
PNOZmulti 2 is a modular system and is comprised of a base unit plus expansion modules. The modular structure is as flexible as your application. Safe analogue input modules, dual-pole output modules, motion monitoring modules and many more offer extensive possibilities for implementing state-of-the-art safety applications.

| PNOZ m B1 | PNOZ m B1 Burner | PNOZ m B0 |

Base units PNOZmulti 2 – the basis for your application
The base units are only 45 mm wide and have an illuminated display.

▶ PNOZ m B1 – for large-scale projects. No inputs or outputs on the base unit, number of I/Os can be controlled via expansion modules. With 2 integrated ETH interfaces and Modbus/TCP on board
▶ PNOZ m B1 Burner – specifically for applications in industrial burner management
▶ PNOZ m B0 – the universal option. With on-board inputs and outputs

Base units
PNOZmulti 2:
technical features
from page 86

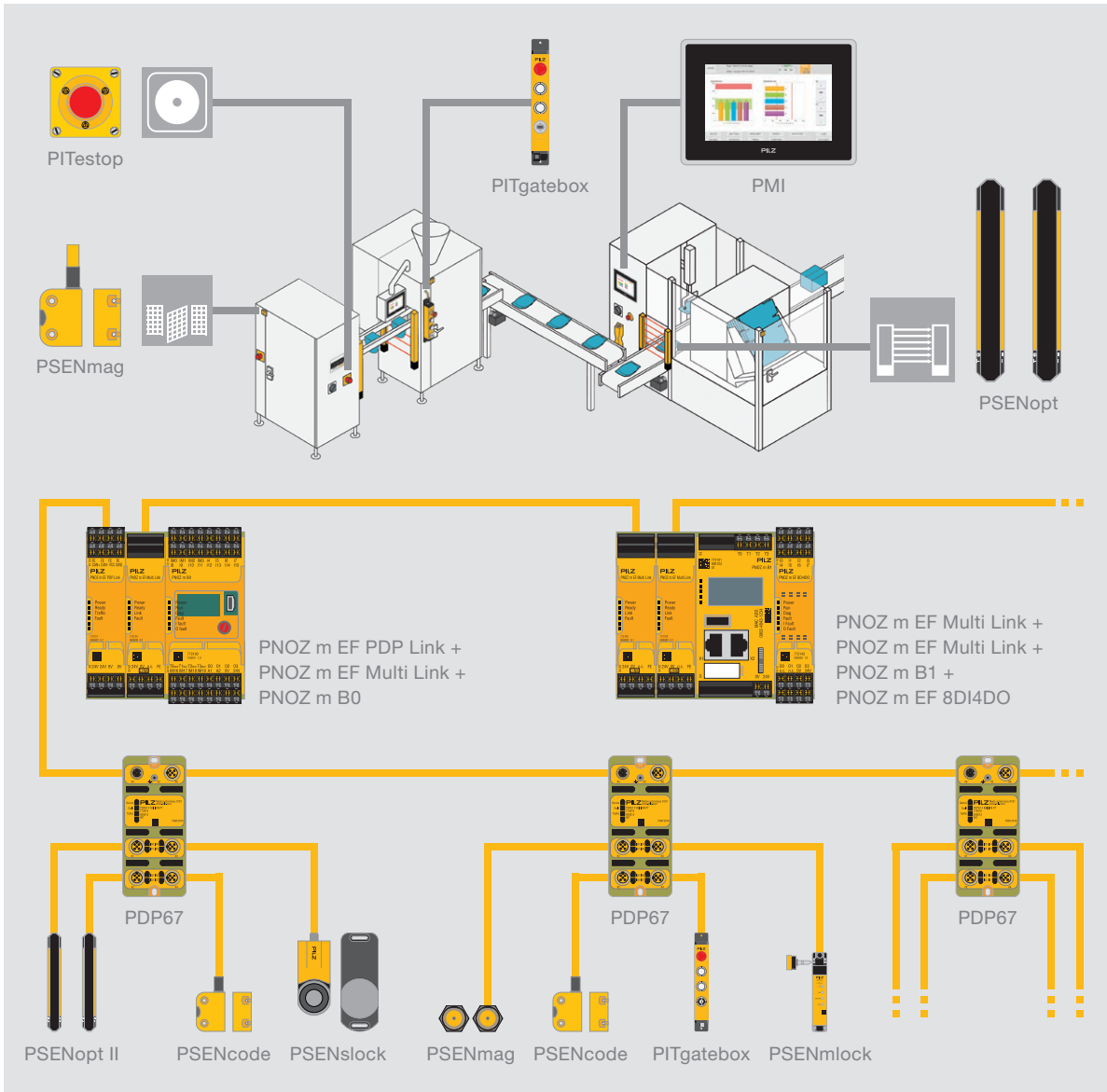Online information
at www.pilz.com

Your benefits at a glance
▶ Certified hardware and software for reliable operation
▶ Easy to configure thanks to user-friendly software tools
▶ Short time-to-market as the inputs and outputs are freely configurable
▶ The appropriate modules for every requirement – flexible, simple, economical to expand
▶ Comprehensive diagnostic options mean short downtimes
▶ Fast commissioning thanks to simple wiring with plug-in terminals
▶ Maximum safety – up to PL e and SIL CL 3, depending on the application

– the success story continues!

PITestop

PSENmag

PITgatebox

PMI

PSENopt

PNOZ m EF PDP Link +
PNOZ m EF Multi Link +
PNOZ m B0

PNOZ m EF Multi Link +
PNOZ m EF Multi Link +
PNOZ m B1 +
PNOZ m EF 8DI4DO

PDP67

PDP67

PDP67

PSENopt II   PSENcode   PSENslock   PSENmag   PSENcode   PITgatebox   PSENmlock

The decentralised modules PDP67 can be connected to the PNOZmulti 2 via a link module – for cost-effective, simple, decentralised expansion. Multi-link modules are also available for networking several base units.

Decentrally in the field

The PDP link module serves as the interface for the decentralised modules PDP67 (to protection type IP67) to the base unit. The signals from the connected sensors are directly forwarded to the PDP link module from the field for further processing. With up to 16 PDP67 modules on one base unit, the number of sensors that can be connected increases by 64. This is what an economical solution looks like!
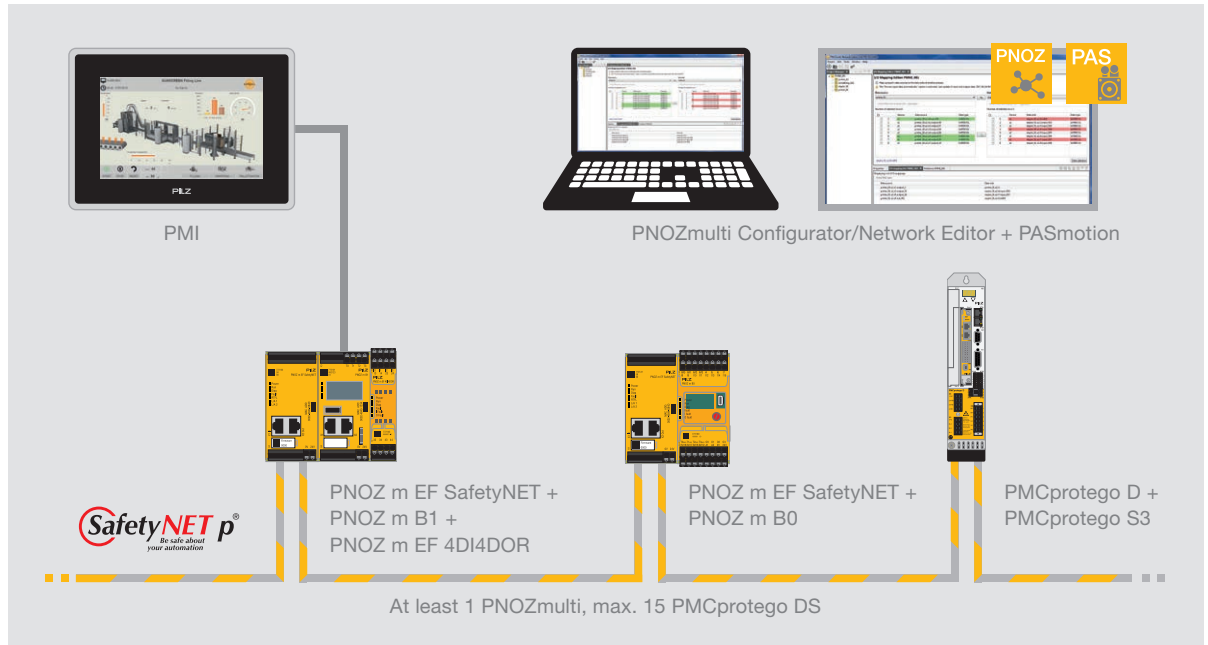
Complex tasks – a team effort

The multi-link module enables simple, safe data exchange between several base units. Thanks to the modular structure of the PNOZmulti 2, different topologies can be implemented on one base unit with up to four link modules. As a result, users can connect several PNOZmulti units to implement safety functions for complex plant and machinery.

Keep up-to-date on configurable safe small controllers PNOZmulti 2:

Webcode:
web150500

Online information at www.pilz.com

▶ # Safe communication via SafetyNET p RTFL

PMI   PNOZmulti Configurator/Network Editor + PASmotion

PNOZ m EF SafetyNET +
PNOZ m B1 +
PNOZ m EF 4DI4DOR

PNOZ m EF SafetyNET +
PNOZ m B0

PMCprotego D +
PMCprotego S3

At least 1 PNOZmulti, max. 15 PMCprotego DS

Safe communication via the real-time Ethernet SafetyNET p RTFL with PNOZmulti 2 and safe motion solution PMCprotego DS. This is also possible as a purely PNOZmulti 2 network with up to 16 subscribers.

For complex plant and machinery

You can now link up to 16 base units via the safe real-time Ethernet SafetyNET p RTFL. Use the expansion module PNOZ m EF SafetyNET to achieve this. 32-bit data is exchanged via RTFL for short scan times in practice. A clearly structured data interface where the inputs are configured with 128 bit and the outputs with 32 bit characterises the data link. PNOZmulti Network Editor is used for configuration of a SafetyNET p network and for project linking. It is called up directly from the PNOZmulti Configurator and can interlink variables of the input or output image of PNOZmulti projects. After upload into the PNOZmulti systems, the SafetyNET p network is ready to use.

Safe drive solutions in the system

You can build the system out of only PNOZmulti 2 base units (PNOZ m B0 or B1) or integrate the safe motion solution PMCprotego DS in the SafetyNET p network. PMCprotego DS is composed of the servo amplifier PMCprotego D and the safety card PMCprotego S3. The end result is a safe drive solution in conjunction with PNOZmulti 2. This monitors the drive solution and ensures the movement is stopped in a controlled and therefore safe manner.

Your benefits at a glance

▶ Safe communication via the real-time Ethernet SafetyNET p
▶ Fast RTFL communication with short scan times
▶ Up to 16 PNOZmulti systems in linear topology with easy networking with the PNOZmulti Network Editor
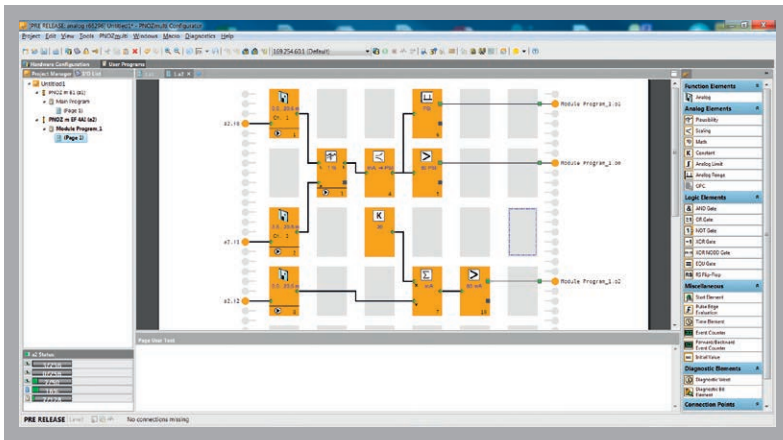▶ Combination of PNOZmulti 2 and safe motion solution PMCprotego DS for a safe drive solution

Webcode:
web150393

Online information at www.pilz.com

Monitoring analogue input signals safely

The analogue input module PNOZ m EF 4AI provides four independent safe analogue current inputs. The inputs are suitable for connecting transducers or encoders with standardised current signals. Any measured variables such as pressure, temperature, fill level, distance etc. can be safely recorded. Elements/blocks are available in the software tool PNOZmulti Configurator with which you can parametrise limit values and range monitoring with a few clicks of the mouse. In addition, you can already scale the analogue measurement values in numerical quantities with any unit during the configuration. Arithmetic functions such as averaging, differential pressure calculation and similar facilitate its use for special applications. In combination with the visualisation software PASvisu, analogue values can be displayed and evaluated. The analogue input module is suitable for many varied possible applications, in particular for the industries of process engineering and cable car and chair lift design.

Your benefits at a glance
- Safe and precise monitoring of process values: up to PL e, SIL CL 3
- Fast, simple project planning: new software blocks for input, feasibility, scaling and arithmetic functions
- Limit value and range monitoring can be parametrised
- Fast reaction times: module program technology mIQ with decentralised processing in the module
- User-friendly diagnostics: up to 6 analogue values can be transferred to the fieldbus for each module
- Play it safe and use PNOZmulti 2 – the worldwide safety standard for all machine types

Configurable safe small controllers PNOZmulti 2: simple configuration of analogue functions in the software tool PNOZmulti Configurator in a separate module program. Benefit: fast project planning thanks to new software blocks for input, feasibility, scaling and arithmetic functions with fine adjustment of the values. Quick and easy commissioning is possible thanks to the dynamic program display.

mIQ

FS-AI

PNOZ m ES Profinet + PNOZ m B1 + PNOZ m EF 4AI
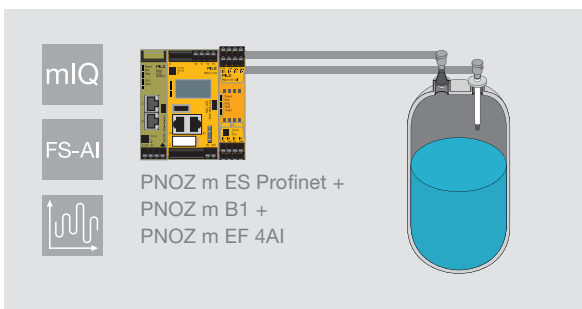
Fill level measurement application

This example application shows the safe sensing of the fill level using a chemical tank as an example. Monitoring is performed with PNOZmulti 2 base unit PNOZ m B1 and analogue module PNOZ m EF 4AI. Two non-safety-related sensors are connected to the analogue module. The limit value and hysteresis are monitored. The two sensors are compared.

Configurable safe small controllers

▶ For safe monitoring of your drives

Safe motion monitoring modules

The safe motion monitoring modules PNOZ m EF 1MM/2MM for the configurable safe small controllers PNOZmulti 2 ensure safe monitoring of your drives. Together with a base unit PNOZ m B0 or PNOZ m B1 the expansion modules monitor one or two axes. You can easily configure the safe motion monitoring modules for PNOZmulti 2 using the software tool PNOZmulti Configurator. In the tool you can then also configure a separate module program (mIQ), which is then run directly on the motion monitoring module. This brings significant benefits to you as the user: it's possible to have fine granular configuration of several monitoring areas, such as velocity or rotational speed, which are then executed locally on the expansion module. That means greater flexibility for you as the user. User-friendly diagnostic options and a wide range of fieldbus and communications options are also available to you.

Flexible and robust

All common incremental encoders can be connected using drive-specific connection cables via the **industry-compatible Mini I/O interface**, characterised by particularly high durability.

Safe motion functions in accordance with EN/IEC 61800-5-2 and safe monitoring functions

EN/IEC 61800-5-2 describes so-called "safe motion functions" that are intended to reduce risks during ongoing operation. A safe monitoring function can be considered a supplementary safety function: the monitoring function is based on the normative motion function. Exceeding of parametrised limit values is signalled and PNOZmulti 2 triggers a safe reaction in the event of a fault and if detection zones/protected areas are violated.

More information on EN/IEC 61800-5-2:

Webcode: web200448

Online information at www.pilz.com
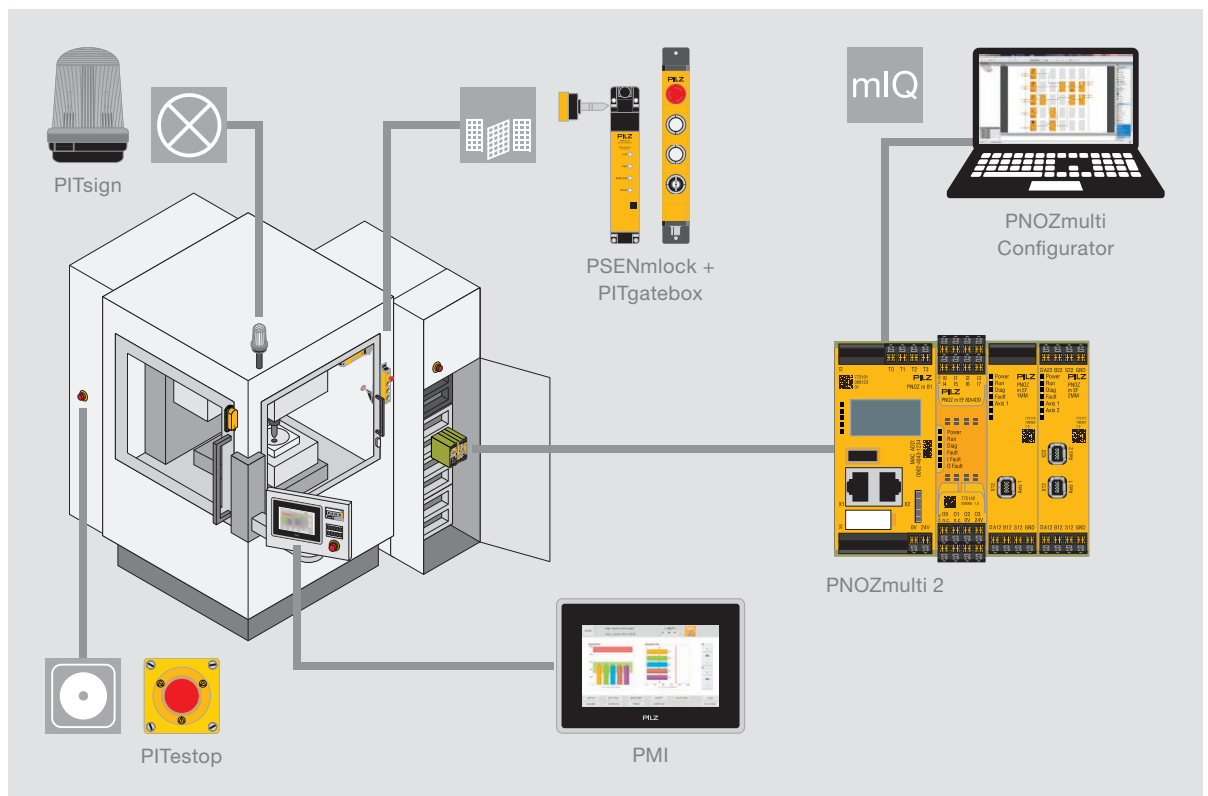
Accessories:

Webcode: web87010

Online information at www.pilz.com

Safe small controllers PNOZmulti 2 with module program (mIQ) for configuration of several monitoring areas, such as velocity or rotational speed, which are then executed locally on the expansion module.

Available monitoring functions
on the small controllers PNOZmulti 2

▸ Safe stop 1: SS1
▸ Safe stop 2: SS2
▸ Safe speed monitor: SSM
▸ Safe speed range: SSR-M
▸ Safe direction: SDI-M
▸ Safe operating stop: SOS-M
▸ Safely limited acceleration: SLA-M
▸ Safe acceleration range: SAR-M
▸ Analogue voltage (track S)

Your benefits at a glance

▸ Maximum flexibility due to the new module
  program technology (mIQ): can be configured with
  the usual simplicity in the PNOZmulti Configurator
▸ Fast reaction times: lightens the load on the
  base unit
▸ Simple configuration of the motion monitoring
  safety functions via software blocks in the
  PNOZmulti Configurator
▸ Productive plant and machinery: with PNOZmulti 2
  you have reduced costs with maximum safety
▸ Connection to all common incremental encoders
  via industry-compatible interface Mini I/O

SS1

SS2

SSM

SSR-M

SDI-M

Rotary encoder PSENenco for
safe motion monitoring!

The safe incremental encoders PSENenco send position
changes of a machine or machine parts, e.g. in machine
tools or presses, to the evaluation device such as
the small controller PNOZmulti 2. You can output and
evaluate HTL or SIN/COS signals to optimise the design
of your application. The high resolution enables fast
reaction times and precise measurements. Together with
PNOZ m EF 1MM/2MM, PSENenco offers safety functions
for speed, direction, acceleration and standstill with
different safety levels in the respective function. The quick
and easy wiring is supported by M23 cables from Pilz.

Your benefits at a glance

▸ Enables speed and position-based safety functions
▸ High flexibility through scalable evaluation system
▸ High resolution enables fast reaction times and
  precise measurements
▸ Holistic safety solution for motion and position
  monitoring from a single source
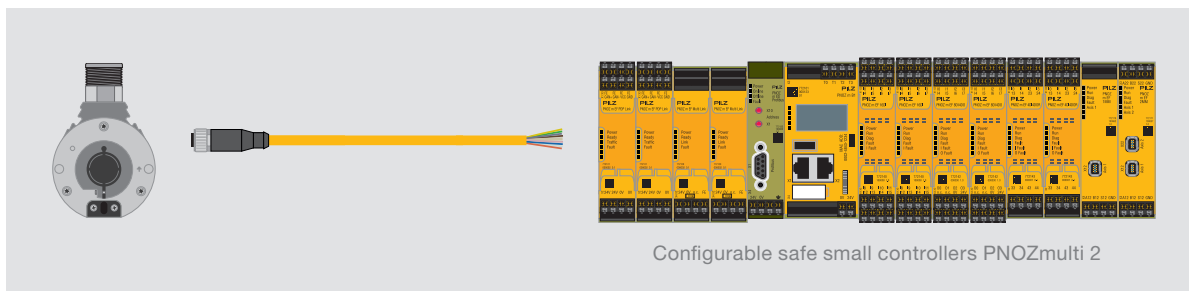▸ Simple, fast implementation

SOS-M

SLA-M

SAR-M

Configurable safe small controllers PNOZmulti 2

Together with PNOZ m EF 1MM/2MM, PSENenco offers safety functions for speed,
direction, acceleration and standstill with different safety levels in the respective function.

Webcode:
web150385

Online information
at www.pilz.com

▶ For safe press applications

mIQ

Dual-pole semiconductor output module PNOZ m EF 8DI2DOT

The dual-pole semiconductor output module PNOZ m EF 8DI2DOT is available to you for the safe monitoring of mechanical presses. Two safety outputs are used to control the press safety valves or other actuators that require dual-pole switching. You can configure the eight inputs with an individual filter time to enable correct operation with a variety of input signals. Press blocks in the software tool PNOZmulti Configurator, e.g. for operating modes or monitoring functions, make it easy and economical to use. A special advantage is the option of configuring a separate module program (mIQ), which is then run locally on the module with very short cycle times of approx. 3 ms. Output control is also extremely fast, so you benefit from very short reaction times of < 8 ms.

Press elements/blocks in the software tool PNOZmulti Configurator:

▸ Operating modes such as setup, single-stroke, automatic
▸ Monitoring a mechanical rotary cam arrangement
▸ Run monitoring to monitor the mechanical transmission
  for shear pin breakage
▸ Monitoring of electrosensitive protective equipment in detection
  and/or cycle mode
▸ Control and monitoring of the press safety valve
▸ Cycle initiation via a two-hand control device

Your benefits at a glance

▸ Maximum safety: simple configuration of press functions using certified software blocks with module program technology (mIQ) for each module
▸ Rapid reaction times (< 8 ms) and short cycle times of approx. 3 ms: press application is processed directly in the module
▸ Fine module-specific adjustment
▸ Particularly well suited for retrofit thanks to narrow width
▸ Depending on the application up to PL e, SIL CL 3
▸ Play it safe and use PNOZmulti 2 – the worldwide safety standard for all machine types

Technical details from page 90:

Webcode:
web150500

Online information at www.pilz.com
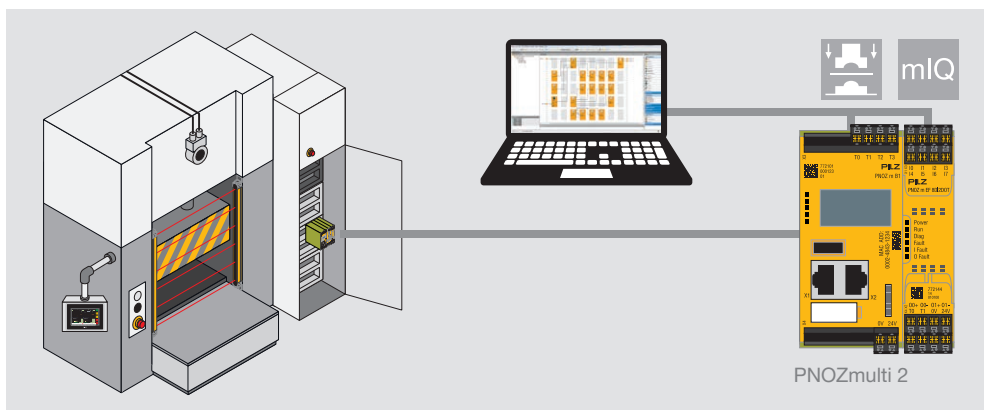
PNOZmulti 2

Configurable safe small controllers PNOZmulti 2: Base unit PNOZ m B1 with the dual-pole semiconductor output module PNOZ m EF 8DI2DOT for configuring safe press functions. The module program technology mIQ enables particularly fast reaction times (< 8 ms) and short cycle times of approx. 3 ms.

▶ For applications in industrial burner management

Base unit PNOZ m B1 Burner in combination with software element "burner"

As a manufacturer of burner and heat-related plant and machinery, you must observe a number of legal and normative requirements. The safety requirements in particular are extremely stringent.

New to the range of safe small controllers PNOZmulti 2 is a base unit for the safe control and monitoring of furnaces. The base unit is configured in the software tool PNOZmulti Configurator with the burner element (function block) that reproduces the expanded functionality of a flexibly configurable electronic automatic burner control. You can thus easily configure a number of burner applications. These include various burner types, such as master burners or slave burners, direct or indirect ignition, low or high-temperature operation and much more.

Tested and certified

Our solution has been tested and certified according to the corresponding standards, including EN 298, EN 50156 and NFPA 85/86. Testing according to international standards is in preparation.

Your benefits at a glance
- ▶ Flexible and safe design of your furnace
- ▶ Saves lots of time during design and engineering as you can easily and quickly implement even complex safety applications with just one small controller
- ▶ Connection options with numerous automation environments and communication systems
- ▶ Maximum safety thanks to tested and certified hardware and software elements
- ▶ Tested and certified in accordance with EN 298, EN 50156, NFPA 85/86

Configurable safe small controllers

PNOZmulti 2

Webcode:
web150382

Online information at www.pilz.com

Configurable safe small controllers PNOZmulti 2 for monitoring and controlling your furnace.
All plant-dependent safety functions such as emergency stop, limit value monitoring and many others can also be monitored and controlled.

▶ Access permission and operating mode selection

Access permissions with PITreader

The software tool PNOZmulti Configurator offers you an input element with which you can easily configure access permissions for plant and machinery. In combination with the base unit PNOZ m B1 and up to four reading units PITreader with RFID technology, you can implement authentications and authorisations for plant and machinery. Users can authenticate themselves on the PNOZmulti by inserting a transponder key into the read area of the PITreader; they will then be authorised to carry out certain operations. The permission on the transponder key must meet the condition for the required permission as configured. The options range from a simple enable and authentication of specific machine component functions to a complex hierarchical permission matrix. PITreader can be used flexibly as a stand-alone device or in conjunction with a controller from Pilz, in particular the base unit PNOZ m B1. PITreader and PNOZmulti 2 thus combine safety and security functions.

Your benefits at a glance
- ▶ PITreader: Control of access permissions with excellent manipulation protection
- ▶ Every user is given the machine enables that match their abilities
- ▶ Functionally safe operating mode selection up to PL d/ SIL CL 2, using the operating mode selection and access permission system PITmode in combination with PITreader

– made easy!

Functionally safe operating mode selection PNOZmulti 2 and PITreader

In addition to the access permissions, you can configure the functionally safe operating mode selection on plant and machinery with new operating mode selector elements (function blocks) in the software tool PNOZmulti Configurator. In combination with the operating mode selection and access permission system PITmode, especially the PITreader, you have two convenient solutions for the operating mode selection. The permission for selection is configured in combination with PITreader and the corresponding RFID keys. In PNOZmulti 2 the selected operating mode can be read out.
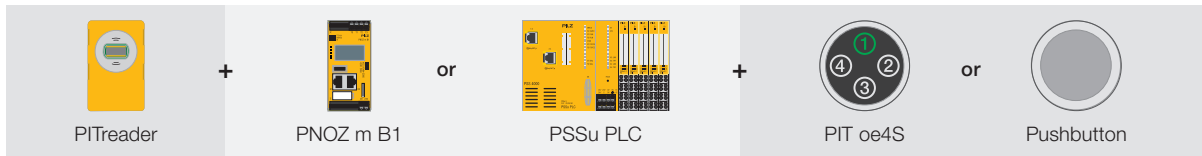
PITreader

PIT oe4S

PMI v704e

Configurable safe small controllers

PITreader with Pilz FS controller and LED pushbutton (PITmode flex)

| PITreader | + | PNOZ m B1 | or | PSSu PLC | + | PIT oe4S | or | Pushbutton |

Operating mode selection via button:
On the one hand, the operating mode can be selected via the Pilz PIT oe4S or also via conventional buttons.

PITreader with Pilz FS controller and Pilz HMI (PITmode flex visu)

| PITreader | + | PNOZ m B1 | or | PSSu PLC | + | PMIvisu |
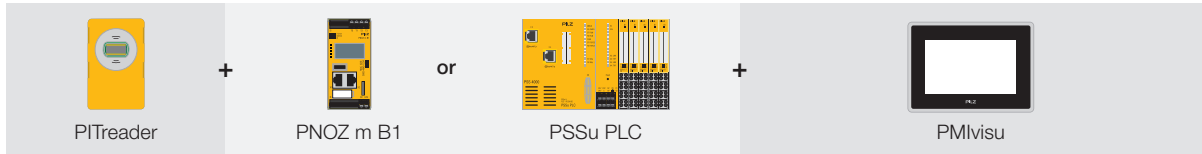
Operating mode selection via touch panel:
As an alternative, safe selection of the operating mode is possible via a key field on an HMI.
The operator and visualisation terminal PMIvisu thus enables safe selection of the operating mode.
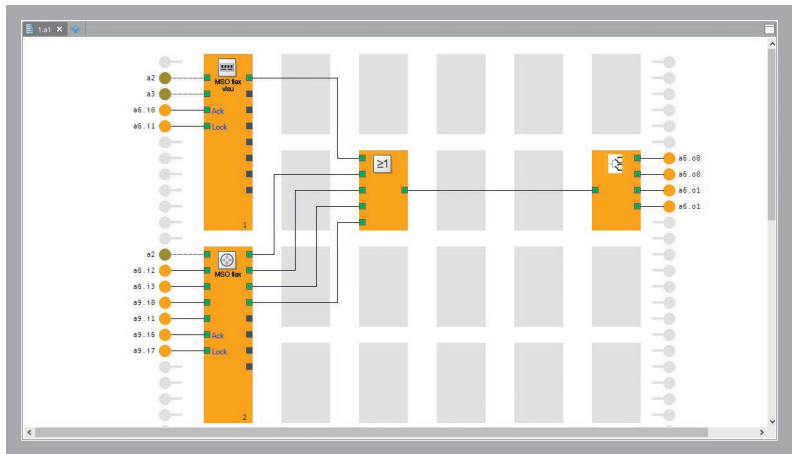
Monitor functionally safe operating mode selection in conjunction with small controllers PNOZmulti 2 and PITreader from the operating mode selection and access permission system PITmode! Two elements/function blocks are available in the PNOZmulti Configurator!

# ▶ The perfect combination – automation solutions

Safe sensors, operator and monitoring devices from Pilz guarantee the efficient, compliant use of plant and machinery in combination with the small controllers PNOZmulti 2. Our turnkey systems and universally compatible solutions offer a high savings potential. Our solutions can be used in almost all industries and applications.

Safe protection zone monitoring with radar technology

The world's first complete solution for protection zone monitoring based on radar technology consists of the safe LBK System radar system from Inxpect S.p.A. and the configurable safe small controller PNOZmulti 2. This complete solution enables complex applications and rugged environments to be monitored safely, even outdoors. The robust radar technology ensures high availability even where there are external influences such as dust, dirt, rain, light, sparks or steam.

Your benefits at a glance
- ▶ Series connection of up to 6 sensors
- ▶ Two protection zone configurations (narrow and wide) – depending on the size of the area to be monitored
- ▶ A Configurator is used to select the sensors and set up the protection zone
- ▶ Warning zone to signalise approaching objects
- ▶ Integral muting for the whole system or for individual sensors
- ▶ Restart interlock to prevent the machine restarting when there are people in the danger zone
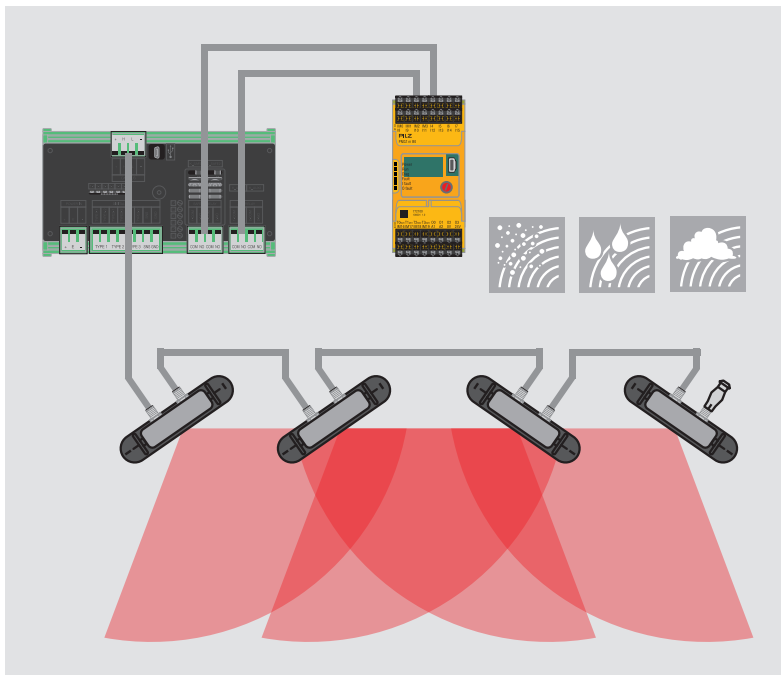
Monitoring of danger zones with the LBK System from Inxpect and the configurable safe small controller PNOZmulti 2.

Additional information on the LBK System:
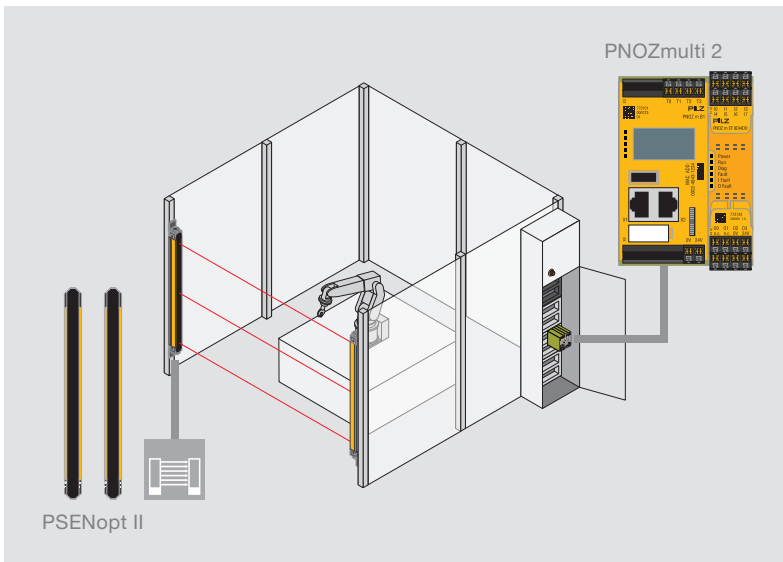
Webcode: web199925

Online information at www.pilz.com

from Pilz

Safe complete solution with safety light curtains PSENopt II

The safety light curtains PSENopt II are used for safe intervention in the production process and, depending on the requirement, provide finger, hand and body protection. The first type 3 safety light curtains are specifically designed for applications up to PL d of EN/IEC 61496-1. Type 4 light curtains are also available for applications up to PL e of EN/IEC 61496-1/-2. The safety light curtains are available in the lengths of 150 mm to 1 800 mm. Combining with configurable safe small controllers PNOZmulti 2 gives you a safe, complete, one-stop solution. The compatible accessories range from fitting aids to mirror columns.

Your benefits at a glance
▸ Body protection versions for applications up to PL e
▸ Highly robust for protection against shock, collision and vibration
▸ User-friendly diagnostics via LEDs to reduce downtimes
▸ Flexible use with enhanced safety – thanks to freedom from dead zones
▸ Coding for greater flexibility when installing the light curtains
▸ Economical, complete, one-stop solution with control technology from Pilz

PNOZmulti 2

PSENopt II

The perfect team: light curtain PSENopt II and configurable safe small controller PNOZmulti 2.
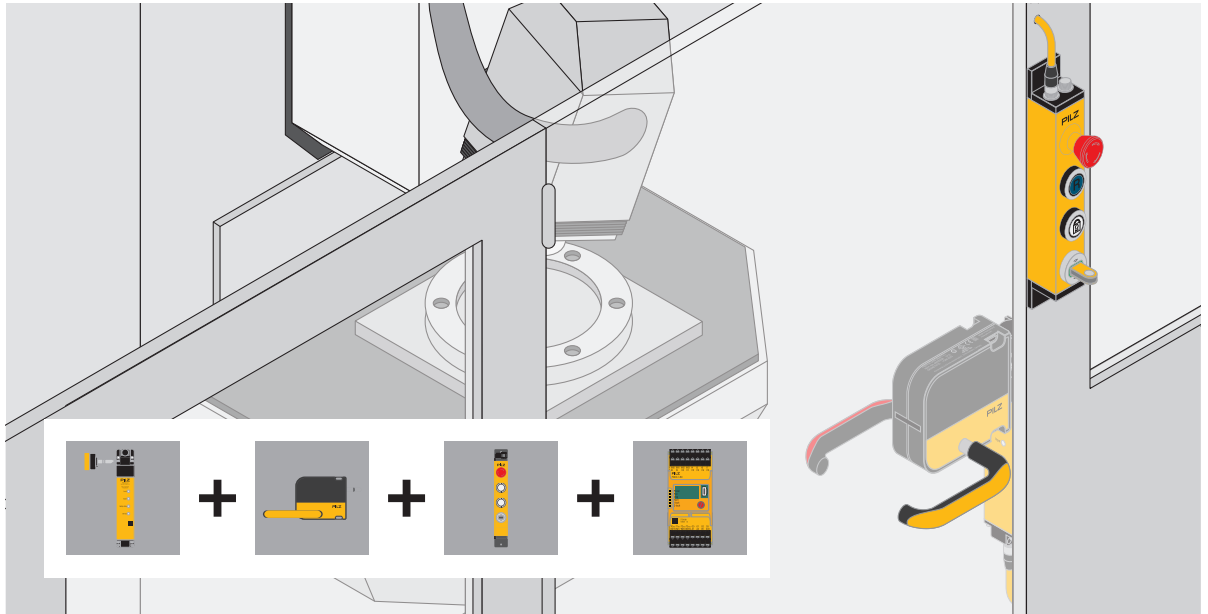
Additional information on the safety light curtains PSENopt II:

Webcode: web150418

Online information at www.pilz.com

▶ The perfect combination – automation solutions

Modular safety gate system

The modular safety gate system offers you an individual safety gate solution that is ideally tailored to your application. That means you can combine individual components flexibly to suit your own particular requirements.
Put together your system for safety gate monitoring – optionally with access permission management.
The following components are available for selection:

▶ Safety gate sensor PSENmlock for safe interlocking and safe guard locking up to PL e. Different versions are available as a base unit, for series connection and with and without power reset

▶ PSENmlock handle module for accessible safety gates with integrated escape release and simple, flexible installation inside and outside of the danger zone

▶ Escape releases and suitable handles for the safety gate system PSENmlock

▶ Pushbutton unit PITgatebox for simple operation of the safety gate system, optionally with integrated access permission system PITreader

▶ Safety Device Diagnostics (SDD) for comprehensive diagnostic and status information as well as for the safe series connection of safety sensors and targeted individual control of the guard locking of individual switches in the series

Combining with the configurable safe small controller PNOZmulti 2 gives you a cost-effective, complete, one-stop solution.

from Pilz

Modular safety gate system – components

Sensor	**PSENmlock (safety guard locking device)** ▸ PSENmlock base version (with/without auto. reset) ▸ PSENmlock series connection (with/without auto. reset)		
Handle	**Handle module** Integrated escape release, for swing/sliding gates	**Handles** For swing gates	For sliding gates
Escape release		**Escape releases** Classic escape release	Remote escape release
Pushbutton unit	**PITgatebox** [1]		
Pushbutton unit with access permission system	**PITgatebox with PITreader**		
Evaluation device	Configurable safe small controllers PNOZmulti 2		
Diagnostics and targeted control	**Safety Device Diagnostics**		

[1] Figure shows only one selection. Additional versions are available

Additional information on the modular safety gate system:

Webcode:
web194460

Online information at www.pilz.com

Firewall SecurityBridge – protect your controller

With the firewall SecurityBridge you protect the configurable safe small controllers PNOZmulti 2 against manipulation through unauthorised access. It is connected upstream of the base unit and functions as a VPN server. This banishes the spectre of espionage and manipulation, and guarantees the safety of your employees and the availability of your machinery! Further information from page 112.

Webcode:
web188268

Online information at www.pilz.com

▶ Configurable safe small controllers PNOZmulti 2

Configurable safe small controllers PNOZmulti 2 – base units

Common features
- ▶ Modular and expandable
- ▶ Application range: for monitoring E-STOP buttons, two-hand buttons, safety gate limit switches, light beam devices, scanners, enable switches, safety gate switches PSEN, operating mode selector switches, pressure-sensitive mats, safe motion monitoring and many other applications
- ▶ Safety-related characteristic data: depending on the application, up to Performance Level PL e/Cat. 4 of EN ISO 13849-1 and Safety Integrity Level (SIL) CL 3 of EN/IEC 62061
- ▶ Can be configured using the software tool PNOZmulti Configurator
- ▶ Exchangeable program memory
- ▶ Illuminated display for status and device information
- ▶ If the diagnostic solution PVIS is activated, it is possible to display customised texts
- ▶ Visualisation software PASvisu, with direct connection to PNOZmulti
- ▶ Supply voltage: 24 VDC
- ▶ LED status indicators
- ▶ Plug-in connection terminals: either spring-loaded terminals or screw terminals available as obligatory accessories

PNOZ m B1

PNOZ m B1 Burner

PNOZ m B0

Type	Features
PNOZ m B1	▶ Automation project is transferred to the base unit using a USB stick (512 MB, included) or via the integrated ETH interface: - multiple projects can be stored - only one can be executed - managed via the project manager ▶ Larger programs in the PNOZmulti Configurator only with PNOZ m B1: - up to 1 024 connection lines possible - macro programming not yet available - module programs (mIQ) supported ▶ Date and time for PNOZ m B1 can be set in the PNOZmulti Configurator ▶ USB stick as storage medium
PNOZ m B1 Burner	Base unit – specifically for burner management: ▶ Control and monitoring of furnaces, e.g. monitoring of safety sequences, combustion air pressure, ignition, flame, external compound controller and leak-tightness control ▶ Control of safety valves, ignition valves, exhaust valves, ignition, external compound controller and combustion air blowers
PNOZ m B0	▶ Automation project is transferred to the base unit using a chip card (not included, available as an accessory) or via the integrated USB interface ▶ 20 safe inputs, up to 8 of which can be configured as auxiliary outputs ▶ 4 safe semiconductor outputs, depending on the application up to PL e, SIL CL 3 ▶ Chip card as storage medium

technical details

	Certification	Order number		
		Without terminals	Plug-in spring-loaded terminals	Plug-in screw terminals
▸ 4 test pulse outputs for detecting shorts across contacts between the inputs, otherwise no inputs and outputs on the base unit ▸ Right side: max. 12 safe expansion modules, 1 output module for standard applications ▸ Left side: up to 4 safe link modules, max. 1 fieldbus module ▸ Modbus TCP on board ▸ Display with backlighting for diagnostics, for activating the project, Ethernet settings, for setting the date and time of the system, for stopping and starting the device ▸ Multifunction switch for menu control ▸ 2 Ethernet interfaces with switch: transmission rate 10 MBit/s, 100 MBit/s; connector type RJ45 ▸ Dimensions (H x W x D) in mm: 100 x 45 x 120.2	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 101 RJ45 cable ▸ 1.5 m ____ 314 094	751 016	750 016
▸ Monitoring of the following oil and gas burner types: Master burner with direct ignition, master burner with indirect ignition and joint flame monitoring ▸ Up to 12 burner function blocks can be configured per base unit ▸ Safety-related characteristic data: depending on the application, up to Performance Level PL e/ Cat. 4 of EN ISO 13849-1 and Safety Integrity Level (SIL) CL 3 of IEC 61508 ▸ Other features: as for PNOZ m B1	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 102	751 016	750 016
▸ 4 test pulse outputs, up to 4 of which can be configured as standard outputs ▸ Right side: max. 6 safe expansion modules ▸ Left side: max. 4 safe link modules, max. 1 fieldbus module and max. 1 communication module ▸ Display with backlighting to indicate the status of the supply voltage and the inputs and outputs ▸ Rotary knob for menu control ▸ Dimensions (H x W x D) in mm: 101.4/98 [1)] x 45 x 120	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 100 Mini USB cable ▸ 3 m ____ 312 992 ▸ 5 m ____ 312 993 ▸ Chip card 8 kByte 1 piece ____ 779 201 ▸ Chip card 32 kByte 1 piece ____ 779 211	751 008 (1 set)	750 008 (1 set)

[1)] Height incl. plug-in spring-loaded terminals/screw terminals

Keep up-to-date on PNOZmulti 2 base units:
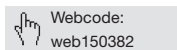
Webcode: web150382

Online information at www.pilz.com

▶ Configurable safe small controllers PNOZmulti 2

Configurable safe small controllers PNOZmulti 2 – expansion modules, connectible on the right

PNOZ m EF 16DI

PNOZ m EF 4AI

PNOZ m EF 8DI4DO

PNOZ m EF 4DI4DOR

Type	Application area
PNOZ m EF 16DI	Safe input module
PNOZ m EF 4AI	Safe analogue input module
PNOZ m EF 8DI4DO	Safe input/semiconductor output module
PNOZ m EF 4DI4DOR	Safe input/relay output module

Common features

▶ For each expansion module PNOZ m EF 4AI, PNOZ m EF 8DI2DOT, PNOZ m EF 1MM/2MM a separate module program (mIQ) with 256 connection lines can be configured. The user program consists of a main program and one or more module programs. The module program is set up like the main program. Configuration is performed directly in the module program. Processing is decentralised and occurs in the module.
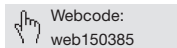
technical details

Features	Certification	Order number		
		Without terminals	Plug-in spring-loaded terminals	Plug-in screw terminals
▶ 16 safe inputs ▶ Monitoring of shorts across contacts by means of test pulse outputs at the inputs ▶ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 140	751 004 (1 set)	750 004 (1 set)
▶ 4 independent safe analogue current inputs, each input can be configured separately ▶ Current range: 4 … 20 mA, measuring range: 0 … 25 mA ▶ Resolution: 15 bit + sign bit; sampling rate: 10 kHz ▶ Workspace monitoring in accordance with Namur NE 43 (range limits are freely configurable) ▶ Limit value/range monitoring (limit values freely configurable) ▶ Safety-related characteristic data: depending on the application, up to PL e in accordance with EN ISO 13849-1 and up to SIL CL 3 in accordance with EN/IEC 62061 ▶ Exact analogue values can be passed on via fieldbus to a higher level controller for diagnostic purposes. Visualisation via the web-based software PASvisu. ▶ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 160	751 004 (1 set)	750 004 (1 set)
▶ 8 safe inputs ▶ 4 safe semiconductor outputs, depending on the application up to PL e, SIL CL 3 ▶ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 142	751 004 (1 set)	750 004 (1 set)
▶ 4 safe inputs ▶ 4 safe relay outputs, depending on the application up to PL e and SIL CL 3 ▶ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 143	751 004 (1 set)	750 004 (1 set)

In order to use the full scope of the PNOZmulti Configurator, you will need a valid licence in addition to the software package. Purchasing a licence converts the demo software with restricted functionality to a full version. Information on the available licences can be found at www.pilz.com, webcode: web151344

Demo software can be downloaded from the Internet (for registered users), information at www.pilz.com/pnozmulti-tools, webcode: web150399

Keep up-to-date on PNOZmulti 2 I/O modules:

Webcode: web150385

Online information at www.pilz.com

▶ Configurable safe small controllers PNOZmulti 2

Configurable safe small controllers PNOZmulti 2 – expansion modules, connectible on the right

PNOZ m EF 8DI2DOT   PNOZ m EF 1MM

PNOZ m EF 2MM   PNOZ m ES 14DO

Type	Application area
PNOZ m EF 8DI2DOT	Dual-pole semiconductor output module
PNOZ m EF 1MM	Safe motion monitoring module for monitoring one axis
PNOZ m EF 2MM	Safe motion monitoring module for monitoring two axes
PNOZ m ES 14DO	Output module for standard applications

Common features

▶ For each expansion module PNOZ m EF 4AI, PNOZ m EF 8DI2DOT, PNOZ m EF 1MM/2MM a separate module program (mIQ) with 256 connection lines can be configured. The user program consists of a main program and one or more module programs. The module program is set up like the main program. Configuration is performed directly in the module program. Processing is decentralised and occurs in the module.

Configurable safe small controllers

technical details

Features	Certification	Order number		
		Without terminals	Plug-in spring-loaded terminals	Plug-in screw terminals
▸ 2 dual-pole safety outputs using semiconductor technology: Depending on the application, up to PL e in accordance with EN ISO 13849-1 and up to SIL CL 3 in accordance with EN/IEC 62061. The outputs are suitable for controlling a press safety valve in accordance with EN ISO 16092-2. Open circuit detection can be configured ▸ 8 digital inputs: the inputs can be used to evaluate a run monitor for press applications. Configurable pulse suppression at the inputs. ▸ 2 test pulse outputs for detection of shorts across contacts ▸ Press elements in the PNOZmulti Configurator: operating modes such as setup, single-stroke and automatic; monitoring a mechanical rotary cam arrangement; run monitoring to monitor the mechanical transmission for shear pin breakage; monitoring of electrosensitive protective equipment in detection and/or cycle mode; control and monitoring of the press safety valve plus cycle initiation via a two-hand control device ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 144	751 004 (1 set)	750 004 (1 set)
▸ Safe monitoring functions in accordance with EN 61800-5-2 (electrical power drive systems with adjustable speed) - Stop 1 (SS1) and stop 2 (SS2) - Safe speed monitoring (SSM) - Safe speed range monitoring (SSR-M) - Safe direction monitoring (SDI-M) - Safe operating stop monitoring (SOS-M) - Safely limited acceleration (SLA-M) - Safe acceleration range (SAR-M) - Analogue voltage (track S) ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 111	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 170	783 542 (1 set)	793 542 (1 set)
	CE, cULus Listed, EAC (Eurasian), TÜV, KOSHA	772 171	783 544 (1 set)	793 544 (1 set)
▸ Expansion module with 14 semiconductor outputs for non-safety-related applications ▸ Max. 1 output module can be connected on the right side of the base unit PNOZ m B1 ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120	CE	772 181	751 004 (1 set)	750 004 (1 set)

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Demo software can be downloaded from the Internet (for registered users), information at www.pilz.com/pnozmulti-tools, webcode: web150399

Configurable safe small controllers

Keep up-to-date on PNOZmulti 2 I/O modules:

Webcode: web150385

Online information at www.pilz.com

▶ Configurable safe small controllers PNOZmulti 2

Configurable safe small controllers PNOZmulti 2 – expansion modules, connectible on the left

PNOZ m EF PDP Link

PNOZ m EF Multi Link

PNOZ m EF SafetyNET

Type	Application area
PNOZ m EF PDP Link	Safe link module for connecting a base unit to up to 4 decentralised modules PDP67
PNOZ m EF Multi Link	Safe link module for connecting two base units. As many base units as needed can be connected via link modules
PNOZ m EF SafetyNET	Expansion module for safe data exchange between SafetyNET p subscribers via SafetyNET p RTFL
PDP67 F 8DI ION **PDP67 F 8DI ION HP**	Decentralised input modules

Common features
▶ Can be configured with the software tool PNOZmulti Configurator
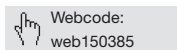▶ Status indicators via LEDs

technical details

Features	Certification	Order number		
		Without terminals	Plug-in spring-loaded terminals	Plug-in screw terminals

▶ Maximum number of devices which can be connected:
  - 4 PDP link modules on the left side of the base unit
  - 4 decentralised modules PDP67 F 8DI ION (VA) or
    PDP67 F 8DI ION HP (VA) to 1 PDP link module
    (maximum configuration: 16 PDP67 modules)
  - 4 sensors to 1 decentralised PDP67 module
    (maximum configuration: 64 sensors)
▶ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120
	CE, cULus Listed,
	EAC (Eurasian),
	TÜV, KOSHA
		772 121	783 540
			(1 set)
				793 540
				(1 set)

▶ On the left side, max. 4 multi-link modules
  can be connected to the base unit
▶ Point-to-point connection via 4-core shielded,
  twisted-pair cable
▶ Transfer of 32 bit input data and 32 bit output data (virtual I/Os)
▶ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120
	CE, cULus Listed,
	EAC (Eurasian),
	TÜV, KOSHA
		772 120	783 538
			(1 set)
				793 538
				(1 set)

▶ Safe communication via the real-time Ethernet
  SafetyNET p RTFL
▶ In the PNOZmulti Configurator up to 128 virtual inputs
  and 32 virtual outputs can be defined for safe communication
  via SafetyNET p
▶ Every PNOZmulti 2 SafetyNET p subscriber (base unit
  PNOZmulti 2) is assigned a module PNOZ m EF SafetyNET
▶ Up to 16 SafetyNET p subscribers can be connected
  in a linear structure
▶ Maximum of 1 fieldbus module can in addition be connected
▶ Dimensions in mm (H x W x D): 96 x 45 x 110.7
	CE, cULus Listed,
	EAC (Eurasian),
	TÜV
		772 122	751 017
			(1 set)
				750 017
				(1 set)

For information please refer to pages 100–101	-	-	-	-

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Demo software can be downloaded from the Internet (for registered users), information at www.pilz.com/pnozmulti-tools, webcode: web150399

Keep up-to-date on PNOZmulti 2 I/O modules:

Webcode:
web150385

Online information at www.pilz.com

▶ Configurable safe small controllers PNOZmulti 2

Configurable safe small controllers PNOZmulti 2 – communication/fieldbus modules, connectible on the left

PNOZ m ES PROFINET

PNOZ m ES PROFIBUS

PNOZ m ES EtherCAT

PNOZ m ES EtherNet/IP

PNOZ m ES POWERLINK

PNOZ m ES CANopen

PNOZ m ES CC-Link

PNOZ m ES ETH

RS232

PNOZ m ES RS232

Type	Application area
PNOZ m ES PROFINET	Fieldbus module PROFINET (I/O device)
PNOZ m ES PROFIBUS	Fieldbus module PROFIBUS-DP (slave, DPV0)
PNOZ m ES EtherCAT	Fieldbus module EtherCAT (slave, CANopen over EtherCAT)
PNOZ m ES EtherNet/IP	Fieldbus module EtherNet/IP (adapter)
PNOZ m ES POWERLINK	Fieldbus module Ethernet POWERLINK V2 (slave)
PNOZ m ES CANopen	Fieldbus module CANopen (slave, CiA 301 V 4.2.0)
PNOZ m ES CC-Link	Fieldbus module CC-Link
PNOZ m ES ETH	Communication module with Ethernet/Modbus TCP interface
PNOZ m ES RS232	Communication module with serial interface

Common features
- ▶ Can be configured with the software tool PNOZmulti Configurator
- ▶ Status indicators via LEDs

technical details

Features	Certification	Order number		
		Without terminals	Plug-in spring-loaded terminals	Plug-in screw terminals
▸ Transmission rate 100 MBit/s (100BaseTX), full-duplex and half-duplex ▸ Two RJ45 ports ▸ PROFINET I/O Device (V2.2) functions in accordance with conformance class C ▸ Supported functions: RT, IRT, MRP, LLDP ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 110.4	CE, cULus Listed, EAC (Eurasian)	772 138	783 542 (1 set)	793 542 (1 set)
▸ Station addresses from 0 … 99, selected via rotary switch ▸ Transmission rate: max. 12 MBit/s ▸ Connection to fieldbus via female 9-pin D-Sub connector ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 115	CE, cULus Listed, EAC (Eurasian)	772 132	783 542 (1 set)	793 542 (1 set)
▸ Transmission rate: 100 MBit/s ▸ Max. 148 bytes TxPDO and 20 bytes RxPDO ▸ Connection to fieldbus via RJ45 connector ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 115	CE, cULus Listed, EAC (Eurasian)	772 136	783 542 (1 set)	793 542 (1 set)
▸ Transmission rate: 10 MBit/s, 100 MBit/s ▸ IP address is set at DIP switch on the front of the unit ▸ 2-port switch ▸ Connection to fieldbus via RJ45 connector ▸ Integrated web server ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 110.4	CE, cULus Listed, EAC (Eurasian)	772 137	783 542 (1 set)	793 542 (1 set)
▸ Station addresses from 1 … 239, selected via rotary switch ▸ Transmission rate: 100 MBit/s ▸ Connection to fieldbus via RJ45 connector ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 110.4	CE, cULus Listed, EAC (Eurasian)	772 119	783 542 (1 set)	793 542 (1 set)
▸ Station addresses from 0 … 99, selected via rotary switch ▸ Transmission rate: max. 1 MBit/s ▸ Transmission rate selected via rotary switch ▸ Connection to fieldbus via male 9-pin D-Sub connector ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 115	CE, cULus Listed, EAC (Eurasian)	772 134	783 542 (1 set)	793 542 (1 set)
▸ Station addresses from 1 … 63, selected via rotary switch ▸ Station type: remote device ▸ Occupied stations: 3 ▸ Transmission rate: max. 10 MBit/s ▸ Connection to fieldbus: via 5-pin Combicon plug-in connector ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 110.4	CE, EAC (Eurasian)	772 135	783 542 (1 set)	793 542 (1 set)
▸ With 2 Ethernet interfaces ▸ Transmission rate 10 MBit/s or 100 MBit/s ▸ Connection to fieldbus via RJ45 connector ▸ Can only be used with base unit PNOZ m B0 ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 111	CE, cULus Listed, EAC (Eurasian)	772 130	-	-
▸ 1 serial interface RS232 ▸ Can only be used with base unit PNOZ m B0 ▸ Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120	CE, cULus Listed, EAC (Eurasian)	772 131	783 538 (1 set)	793 538 (1 set)

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Demo software can be downloaded from the Internet (for registered users), information at www.pilz.com/pnozmulti-tools, webcode: web150399

Keep up-to-date on PNOZmulti 2 communication modules:

Webcode: web150393

Online information at www.pilz.com

▶ Software tools for small controllers

Software tool – PNOZmulti Configurator

Type	Features
PNOZ	

PNOZmulti Configurator	▶ Graphical tool for configuring and programming the configurable small controllers PNOZmulti
	▶ Project development, configuration generation, documentation and commissioning
	▶ Data transmission varies depending on the used base unit: via USB interface, ETH interface, chip card or USB stick
	▶ User interface in German, English, French, Italian, Spanish, Japanese and Chinese (selectable)
	▶ System requirements (version 10.0.0 or higher):
	  - Operating system: Windows 7; 8; 8.1; 10 … (32 Bit, 64 Bit)
	  - Standard PC with min. 1 GHz processor
	  - RAM: min. 1 024 MB
	  - Hard drive: 20 GB; min. 15 GB free memory space
	  - Graphics card: Supports Super VGA graphics
	  - Browser: Internet Explorer version 9 or higher
	▶ To be able to fully utilise the PNOZmulti Configurator, you will need a valid licence in addition to the software package because without a licence the PNOZmulti Configurator will only run in the demo version; various licences are available
	▶ Each licence type is available as a full version or service version
	  - Full version: the full version provides the whole functional range of a licence
	  - Service version: the service version of a licence is intended for service and maintenance; it provides only limited editing options

Software tool – Diagnostic solution PVIS

Type	Features
PVIS	
PVIS	Diagnostic configurations can be created for all PVIS-capable controllers. This is done using the respective system software of the controller, e.g. using the PNOZmulti Configurator. The diagnostic configuration contains event notifications which can be displayed e.g. if errors occur in or at the controller, if the operating status of the control system changes or in the case of defined conditions.
PVIS OPC Server UA/OPC Server	The OPC Server "PVIS OPC Server UA" from Pilz is used for displaying the event notifications in visualisation software. The OPC Server is installed on a PC or a PMI operator terminal.
PVIS OPC Configurator	The PVIS OPC Configurator is used to create an OPC project which contains the diagnostic configurations and the OPC data for the individual controller. The OPC Server connects to the controllers, reads in the data and makes it available in the namespace. In the namespace, not only the event notifications can be viewed but also status information and the process data of the controllers.
ActiveX Control UA/ActiveX Control	In order to retrieve the event notifications of a controller from the OPC Server and to display them in visualisation software, ActiveX control can use "PVIS ActiveX Control UA".

Licence type	Order number		
	Type	Full version	Service version
▸ **Basic Licence:** Single user licence, issued to one owner (company name and location/project must be stated) ▸ **User Licence:** Discounted licence for an additional workstation, issued to the owner of a basic licence ▸ **Multi User Licence:** Multi-user licence, graduated according to the number of workstations (up to 25, 50, 100 and over 100) ▸ **Project Licence:** Licence to use the software within a contractually limited framework ▸ **Basic/User/Multi User/Project Upgrade Licence:** Discounted licence to allow existing licence owners to upgrade to a newer version of the software ▸ **Time Limited Licence:** Basic licence limited to 2, 3 or 4 months	Software can be downloaded from the Internet ▸ Basic Licence ▸ User Licence ▸ Multi User Licence ▸ Project Licence ▸ Time Limited Licence, 2 months ▸ Time Limited Licence, 3 months ▸ Time Limited Licence, 4 months **Upgrade** ▸ Basic Upgrade Licence ▸ User Upgrade Licence ▸ Multi User Upgrade Licence ▸ Project Upgrade Licence	 773 010B 773 010K 773 010M 773 010G 773 010S 773 010R 773 010Q 773 010U 773 010V 773 010N 773 010W	 773 011B 773 011K 773 011M 773 011G - - - 773 011U 773 011V 773 011N 773 011W

Keep up-to-date on the software tool PNOZmulti Configurator:

Webcode: web150399

Licences:

Webcode: web151344

Online information at www.pilz.com

Licence type	Order number		
	Type	Runtime licence	Project licence
▸ **Runtime licence:** OPC/OPC UA server application which is licensed for a target computer and can be used without time restriction ▸ **Project licence:** Licence to use the software within a contractually limited framework	PVIS OPC Server for PMI, point-to-point	261 905	261 905G
	PVIS OPC Server for PMI, 8 devices	261 906	261 906G
	PVIS OPC Server for PC, point-to-point	261 907	261 907G
	PVIS OPC Server for PC, unlimited	261 908	261 908G

Keep up-to-date on the software tool "Diagnostic solution PVIS":

Webcode: web150398

Online information at www.pilz.com

▶ Accessories – configurable safe small controllers

Configurable safe small controllers

Accessories – configurable safe small controllers PNOZmulti 2

PNOZmulti Toolkit

Chipcard

SafetyNET p Cable

PSEN ma adapter

Type	Application range/features	Order number
PNOZmulti Toolkit	The tool kit includes: chip card with 32k and seal PNOZmulti m1p VP: 10 pcs., chip card reader PNOZmulti, programming cable PNOZmulti, system manual PNOZmulti	779 000
USB memory 512 MB	For base unit PNOZ m B1, for follow-up orders only	779 213
Chipcard	Chip card for the base units PNOZ m B0, PNOZmulti Mini, PNOZmulti (obligatory accessories)	▶ 8 kByte, 1 pieces ⎯⎯ 779 201 ▶ 8 kByte, 10 pieces ⎯⎯ 779 200 ▶ 32 kByte, 1 pieces ⎯⎯ 779 211 ▶ 32 kByte, 10 pieces ⎯⎯ 779 212
Chipcard Holder	Chip card holder	779 240
Chipcard Reader	Chip card reader, PNOZmulti Configurator version 9.6.0 or higher	779 230
PNOZmulti Seal	Adhesive label for chip card, 12 pieces	779 250
SafetyNET p Cable	Connection cable for all link modules of the small controllers PNOZmulti, available by the metre 1 … 500 m, signal yellow RAL1003, 4-core, without connector	380 000
	Connector X1/X2-RJ45 male connector (straight)	▶ 0.5 m ⎯⎯⎯ 380 001 ▶ 1 m ⎯⎯⎯ 380 003 ▶ 2 m ⎯⎯⎯ 380 005 ▶ 5 m ⎯⎯⎯ 380 007 ▶ 10 m ⎯⎯⎯ 380 009
SafetyNET p Connector RJ45s	Plug-in connector	380 400
RJ45 Connector	Pin connector	380 401
PSSu A RJ45-CAB 1.5M	Patch cable with RJ45 connector, light grey	▶ 1.5 m ⎯⎯⎯ 314 094
PSSu A USB-CAB03	Mini USB cable for the base units PNOZ m B0 and PNOZmulti Mini	▶ 3 m ⎯⎯⎯ 312 992 ▶ 5 m ⎯⎯⎯ 312 993
PSEN ma adapter	Adapter for connection to PSENmag safety switches	380 300
PSEN cs adapter	Adapter for connection to PSENcode safety switches	380 301

PNOZmulti 2

Accessories – configurable safe small controllers PNOZmulti 2

PNOZ msi1Ap

MM A MINI-IO-CAB

Type	Application range/features	Order number
PNOZ msi1Ap Adapter Si/Ha 25/25	▸ Connection cable for the safe speed and standstill monitors PNOZ ms1p/PNOZ ms2p/PNOZ ms3p, used to connect incremental encoders ▸ Connection cable for all common makes of drive ▸ Connection to drive and incremental encoder via 25-pin or 15-pin D-Sub male and female connector, or wired with stranded cable ▸ For more information, please refer to the operating instructions	▸ 2.5 m ———— 773840 ▸ 5 m ———— 773844
PNOZ msi1Bp Adapter Si/Ha 25/25		▸ 2.5 m ———— 773841 ▸ 5 m ———— 773839
PNOZ msi3Ap Adapter Si/Ha 15/15		▸ 2.5 m ———— 773842
PNOZ msi3Bp Adapter Si/Ha 15/15		▸ 2.5 m ———— 773843
PNOZ msi5p Adapter Bos/Rex 15/15		▸ 2.5 m ———— 773857 ▸ 1.5 m ———— 773858
PNOZ msi6p Adapter Elau 9/9		▸ 7.5 m ———— 773859 ▸ 2.5 m ———— 773860 ▸ 1.5 m ———— 773861
PNOZ msi7p Adapter SEW 15/15		▸ 2.5 m ———— 773864 ▸ 1.5 m ———— 773865
PNOZ msi8p Adapter Lenze 9/9		▸ 2.5 m ———— 773862 ▸ 1.5 m ———— 773863
PNOZ msi9p adapter cable		▸ 5.0 m ———— 773856 ▸ 2.5 m ———— 773854 ▸ 1.5 m ———— 773855
PNOZ msi19p ADAPTER ELAU PACDrive3		▸ 2.5 m ———— 773847 ▸ 1.5 m ———— 773846
PNOZ msi b1 Box 9p	▸ Adapter box for PNOZ msxp speed monitoring modules PNOZmulti ▸ x-pin D-Sub male connector/female connector, 2 x female, 1 x male	▸ 9-pin ———— 773882
PNOZ msi b1 Box 15p		▸ 15-pin ———— 773880
PNOZ msi b1 Box 25p		▸ 25-pin ———— 773883
PNOZ msi S09	▸ Connector sets/adapters for connecting frequency converters to speed monitors PNOZ msxp, PNOZ s30, PNOZ m EF 1MM/2MM, adapter box PNOZ msi b1 Box ▸ Plug-in connector X1/X2: x-pin D-Sub male connector/female connector	▸ 9-pin ———— 773870
PNOZ msi S15		▸ 15-pin ———— 773871
PNOZ msi S25		▸ 25-pin ———— 773872
PNOZ msi9p	▸ Connection cable for adapter box PNOZ msi b1 Box ▸ Connection via RJ45 connector, stranded wire cables with wire end ferrules	▸ 1.5 m ———— 773855
PNOZ msi10p		▸ 2.5 m ———— 773854
PNOZ msi11p		▸ 5 m ———— 773856
PNOZ msi b0 cable 15/RJ45	▸ For adapter box PNOZ msi b1 Box ▸ x-pin D-Sub male connector/ 8-pin RJ45 connector	▸ 15-pin, 0.3 m ———— 773881
PNOZ msi b0 cable 25/RJ45		▸ 25-pin, 2.5 m ———— 773884
MM A MINI-IO-CAB	▸ Adapter cable for PNOZmulti 2, PNOZ m EF 1MM and PNOZ m EF 2MM ▸ Shielded ▸ Preassembled 8-pin Mini IO male connector at one end	▸ 1.5 m ———— 772200 ▸ 2.5 m ———— 772201 ▸ 5.0 m ———— 772202

Webcode:
web87010

Online information
at www.pilz.com