

User Manual



Control Unit Module

Sigma MOD DRV

Product code: PW-027-A



Reliable and Innovative **Gas Detection & Safety Systems**

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Remarks and reservations

-  Connection and operation of the device is allowed only after reading and understanding the contents of this document. Keep User's Manual with the device for future use.
-  The manufacturer bears no responsibility for errors, damages and failures caused by improper selection of devices and cables, improper installation or failure to understand the contents of this document.
-  Unauthorised repairs and modifications of the device are not allowed. The manufacturer bears no responsibility for the results of such interventions.
-  Excessive mechanical, electrical or environmental exposure may result in damage to the device.
-  Use of damaged or incomplete devices is not allowed.
-  The design of the Gas Safety System for a protected facility may involve other requirements throughout all stages of the product life.

How to use this manual?

-  The following symbols of optical indicators status are used throughout the document:






Symbol	Interpretation
	Optical indicator on
	Optical indicator flashing
	Optical indicator off
	Optical indicator status not determined (depends on other factors)

Table 1: Optical indicators status notation

-  Important parts of the text are marked as follows:



Pay special attention to information given in these fields.


-  User's Manual consists of main text and appendices. Appendices are independent documents and can exist without User's Manual. Appendices have their own page numbering independent of User's Manual page numbering. These documents can also have their own tables of contents. All documents included in the User's Manual are marked in the bottom right corner with their name (symbol) and revision (issue number).

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1 Preliminary information

The Sigma MOD DRV module is the basic module applied in the control units of the Sigma Gas system. Its main function is to integrate individual devices into an efficient and reliable Gas Safety System. This module is responsible for managing communications between the system components and reading signals from detectors and other co-operating devices. It also provides a service interface to support the configuration (including the detectors calibration) of the system devices without interrupting its operation. Indicators with which the module is equipped are intended to provide information on the current state of the system operation.

Basic functionality

- ✓ Providing real-time system features – ensuring the receipt of data from all the system devices within a strictly limited time.
- ✓ Synchronizing the measurements performed by the detectors to obtain from them the data measured at one point in time.
- ✓ Enabling the detectors calibration and conducting a number of other service operations during the system operation.
- ✓ Ability to easily configure devices from one place via the service interface.
- ✓ Visualization of the system's operation status.
- ✓ Logical separation of the system devices from others operating in the system.

2 Description of the construction

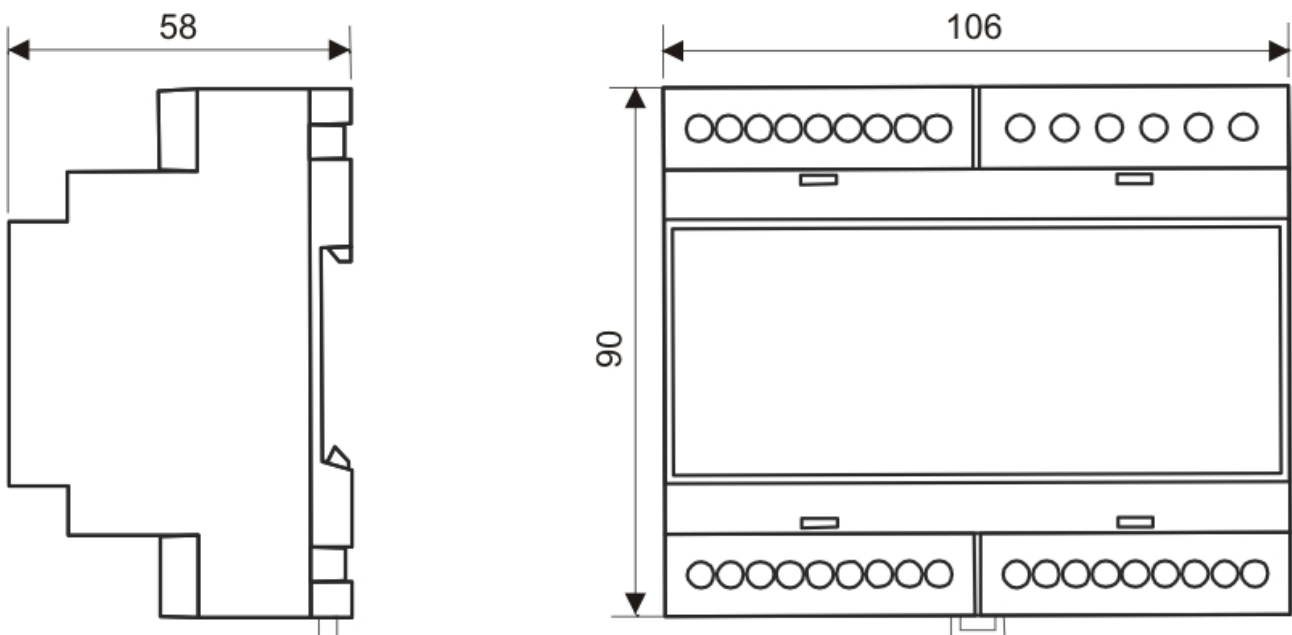


Figure 1: Dimension of the device

3 Input-output interfaces

3.1 Electric interface

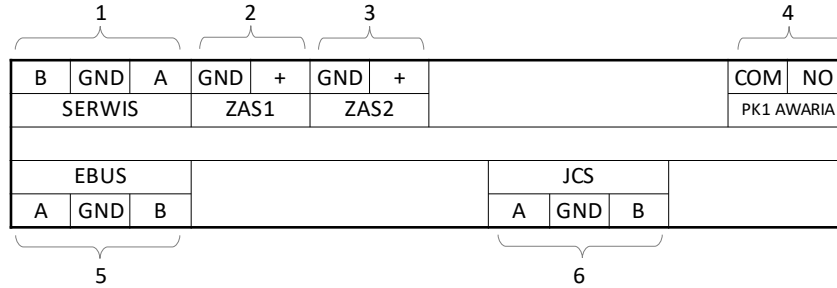


Figure 2: Electric connections

No.	Name	Terminal	Description
1	SERVICE		Service port
		A	Signal line A
		B	Signal line B
		GND	Negative supply pole. Both terminals „GND” are internally connected
2	PWR1		Supply port 1
		GND	Negative supply pole (connected with GND of PWR1 port)
		+	Positive supply pole (with serial diode)
3	PWR2		Supply port 2
		GND	Negative supply pole (connected with GND of PWR1 port)
		+	Positive supply pole (with serial diode)
4	R1 FAILURE		Failure relay output (negated)
		COM	Common terminal of relay
		NO	Normally open contact of relay
5	EBUS		External communication port
		A	Signal line A
		B	Signal line B
		GND	Negative supply pole. Both terminals „GND” are internally connected
6	JCS		Internal communication bus port
		A	Signal line A
		B	Signal line B
		GND	Negative supply pole. Both terminals „GND” are internally connected

Table 2: Electric interface description


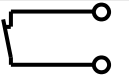
Relay output	Function		
R1 FAILURE	FAILURE	Sigma MOD DRV is in failure status or isn't powered	Sigma MOD DRV isn't in failure status

Table 3: Operation of relays output

4 User's interface

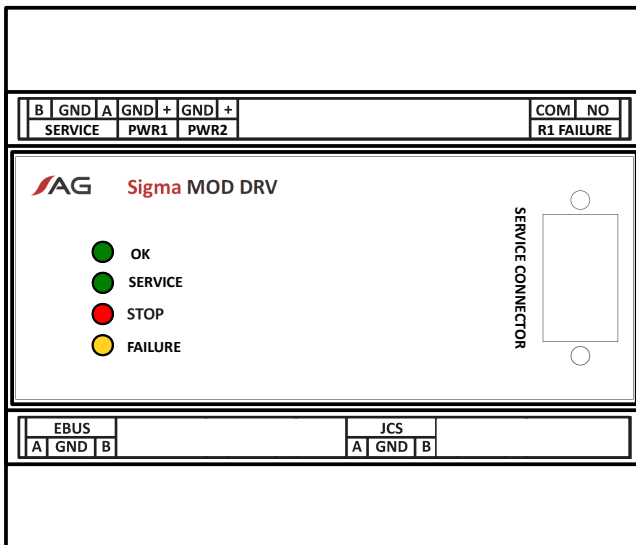






Figure 3: User's interface

The user interface consists of four lights with which the device signals the current operating mode:

-  OK – current operation of the device
-  SERVICE – the device operates in the service mode
-  STOP – the device has been stopped
-  FAILURE – signalling the device failure



Only equipment specifically designed for this purpose by the manufacturer of the Sigma MOD DRV device can be connected to the service socket.

5 System architectures

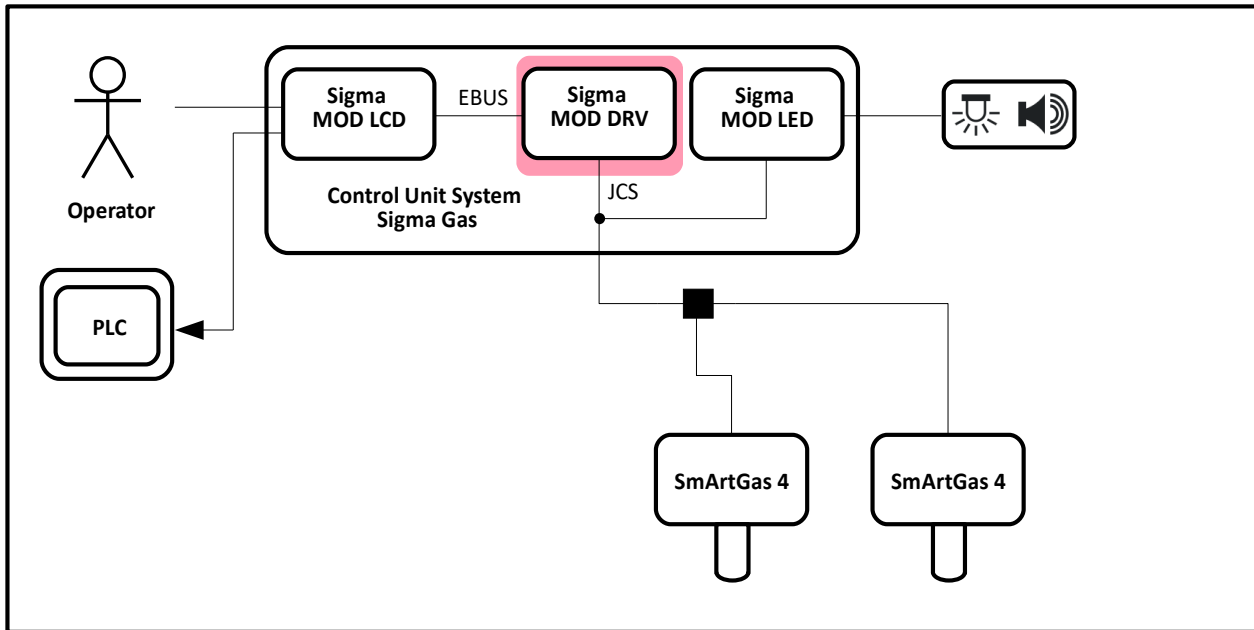


Figure 4: Control unit module – example of system architectures

6 Life cycle

6.1 Transport

The device should be transported in the same way as new devices of this type. If the original box or another protection (e. g. corks) is not available, it is necessary to secure the device against shocks, vibrations and moisture on one's own, using other equivalent methods.

6.2 Installation

Mount in the control cabinet on the DIN 35 rail or place in the junction box in a place accessible to authorized operators, however, if possible, in such a way as to make it difficult for unauthorized persons to access it. It is recommended to use such mounting height which allows easy access to the unit.

If multi-wired strands (commonly referred to as "cables") are used for connecting, the ends of these strands shall be terminated with terminal sleeves.

If there is a need to connect two strands in one terminal of the device, only the connection in one common terminal sleeve is allowed.



It is unacceptable to combine in one connector two wires which are not pinched in one cable lug.

6.3 Start-up

The device is ready to operate after the power supply is provided and the co-operating devices are connected to it.

6.4 Device / system configuration

The device doesn't require configuration.

6.5 Diagnostics

The device doesn't require diagnostics.

6.6 Periodical operations

The device doesn't require periodical operations.

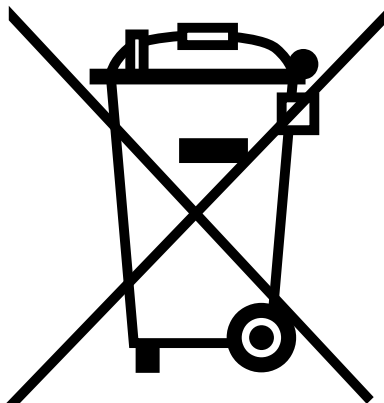
6.6.1 Replacement of consumables

The device doesn't require the replacement of consumables.

6.6.2 Maintenance

Except cleaning the external part of the enclosure, the device does not require any maintenance. The external part of the enclosure should be cleaned by means of a soft cloth moistened with water and a bit of a mild detergent.

6.7 Utilization



This symbol on a product or on its packaging indicates that the product must not be disposed of with other household waste. Instead, it is the user's responsibility to ensure disposal of waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The proper recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. Information about relevant designated collection points can be obtained from the Local Authority, waste disposal companies and in the place of purchase. The equipment can also be returned to the manufacturer.

7 Technical specification

Power supply	
<ul style="list-style-type: none"> • V_{CC} • Power consumption 	10 – 30 V $\overline{\text{AC}}$ 2 W
Environment	In-operation
<ul style="list-style-type: none"> • Ambient temperatures • Humidity 	-10 – 50°C 10 – 90% long term, non-condensing
IP	IP20
Digital communication parameters	
<ul style="list-style-type: none"> • JCS port <ul style="list-style-type: none"> • Electric standard • Communication protocol • EBUS port <ul style="list-style-type: none"> • Electric standard • Communication protocol 	RS-485 Sigma Bus RS-485 Sigma Bus
Protection class	III
Dimensions	
<ul style="list-style-type: none"> • Height • Width • Depth 	See figure 1
Acceptable cables	1 – 2 mm ²
Enclosure material	Self-extinguishing PPO
Weight	0.3 kg
Mounting	DIN-35 / TS35 rail

Table 4: Technical specification

8 List of accessories

Product code	Description
PW-049-CB6	CB6 Service Cable

Table 5: List of accessories

9 Product marking

Product code	Device
PW-027-A	Sigma MOD DRV Control Unit Module

Table 6: Method of product's marking

10 Appendices



[1] DEZG015-ENG – EU Declaration of Conformity – Sigma MOD DRV

EU Declaration of Conformity

Atest-Gaz A. M. Pachole sp. j. declares with full responsibility, that the product:

(Product description) Control Unit Module	(Trade name) Sigma MOD DRV	(Type identifier or Product code) PW-027
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complies with the following Directives and Standards:

-  in relation to Directive 2014/30/EU – on the harmonisation of the laws of the Member States relating to electromagnetic compatibility:
 - EN 50270:2015
-  in relation to directive 2011/65/EU – on the restriction of the use of certain hazardous substances in electrical and electronic equipment
 - EN 50581:2012

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Purpose and scope of use: product is intended for use in gas detection systems for residential, commercial and industrial environment.

This EU Declaration of Conformity becomes not valid in case of product change or rebuild without manufacturer's permission.

Gliwice, 29.05.2019


(Name and Signature)
Managing Director
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