

Features

- Condition monitoring in pocket format
- Integrated sensors for temperature, air pressure, humidity
- Detection of movement, position, vibration, shock
- Optional connection for external NTC temperature sensors
- Door monitoring of the control cabinet via distance sensor or digital input
- All-purpose input(s) for digital signals
- Measurement of voltage supply
- Configuration via website
- Transmission of status/value information via MQTT
- ModbusTCP server for data provision
- Digital outputs for alarm signalling
- SD card for long-term logging
- Very compact design for DIN-rail

Cabinet Guard

Protect and monitor the heart of your system - in real time

The Helmholz Cabinet Guard continuously monitors the conditions inside the enclosure, such as temperature, humidity, air pressure, vibration and the condition of the enclosure door (unauthorised access). By monitoring these environmental parameters, the Cabinet Guard can react to potential problems at an early stage, trigger alarms and thus prevent failures or damage. This helps to maintain system integrity and operational efficiency.

Monitoring of system components is now widely used to increase system availability and carry out maintenance work cost-effectively. The focus is usually on external actuators and sensors, while the control cabinet as the heart of the system often receives less attention. However, the inside of the enclosure is also exposed to numerous hazards and the effects of ageing. Temperature, humidity, air pressure, vibration and shocks are typical environmental factors that can affect the service life of the cabinet.

With a Cabinet Guard in the control cabinet, all this information can be monitored, analysed or alarms generated, completely independently of the PLC.

The Cabinet Guard is configured conveniently via a web interface. The measured values can be easily forwarded to other components or higher-level systems (host computer, MES, cloud) via MQTT and ModbusTCP.

At the same time, the measured values can be saved to an SD card for long-term recording, which also enables long-term evaluation of ageing phenomena. To improve the efficiency of the system, the recordings of the control cabinets of different machines can be compared and thus optimisation possibilities can be found in the design.

Thanks to its distance sensor, the Cabinet Guard can also monitor the opening of the enclosure doors. The Cabinet Guard is therefore also an important sensor when considering the security of a machine.

General

Order number	700-210-1AA01
Name	Cabinet Guard
Scope of delivery	Cabinet Guard with power supply plug
Dimensions (D x W x H)	55,6 x 25 x 109 mm
Weight	Ca. 180 g

Ethernet interface (X1)

Connection	1 x RJ45
Transmission rate	10/100 Mbps
Protocol	HTTPS web server for configuration and diagnostics; ModbusTCP; MQTT

Digital IOs (X2)

Inputs	5x Type 3 as of DIN EN 61131-2; 2 Inputs can optionally be used as outputs
Output	2x 200mA 24V DC, with electronic fuse

Analog inputs (X3)

Count	2
Type	NTC 10 kOhm, 2-wire
Measuring range	-50°C … +350°C / 0 … 450 kOhm
Resolution	+-0,1°C + Sensor Tolerance at 25°C or +-25 Ohm at 10kOhm

Environmental sensor (intern)

Temperature measurement	-20°C .. +80°C, +-2°C
Humidity	0% r.H. .. 100% r.H., Tol.: +-5% @25°C
Air pressure measurement	300 … 1100 hPa, +-1,7 hPa

Distance sensor

Type	Optical Time-of-flight (TOF), Infrared (940nm)
Distance / Resolution	Up to 100 cm / +-6% for white targets

Vibration sensor

Function	3-axis accelerometer: vibration, shock, acceleration, orientation

Resolution	+-16g, bandwidth: 1,3kHz

Voltage measurement

Resolution	18V ... 30V, accuracy: +-3%

Status indication

Function status	4 LEDs (Power, Run, Connection, Alarm)
Ethernet status	2 LEDs (Connection, Traffic)

Power supply

Voltage	DC 24 V, 18 … 30 V DC
Current consumption	max. 85 mA at 24 V DC
Current consumption with load	max. 450mA at 24 V DC
power loss	max. 2 W

Ambient conditions

Ambient temperature	-30°C ... +75°C
Transport and storage temperature	-40°C ... +85°C
Relative humidity	Up to 95 % without condensation
Protection rating	IP20
Mounting position	upright on DIN-rail
Approvals	CE
UL/CSA	UL 61010-1, UL 61010-2-201
	CAN/CSA-C22.2, No. 61010-2-201
RoHS, Reach	RoHS (2011/65/EU); DIN EN IEC 63000 2019-05
EMV	DIN EN IEC 61000-6-2 2019-11, DIN EN IEC 61000-6-4 2020-09
Vibration and Shock	DIN EN 60068-2-8:2008 “Vibration”, DIN EN 60068-27:2010 “Shock“, DIN EN 60068-2-31:2009-04 “Free fall"

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Änderungen und Irrtümer vorbehalten