HIGHVOLT Prüftechnik Dresden GmbH
Marie-Curie-Straße 10
01139 Dresden, Germany
Phone +49 351 8425 700
E-mail sales@highvolt.com
Website http://www.highvolt.com

Data Sheet 12.50/3

Safety measures

Classification

The module Safety measures is a part of the control system HiCOS. It contains all components that ensure the safety of the operators.

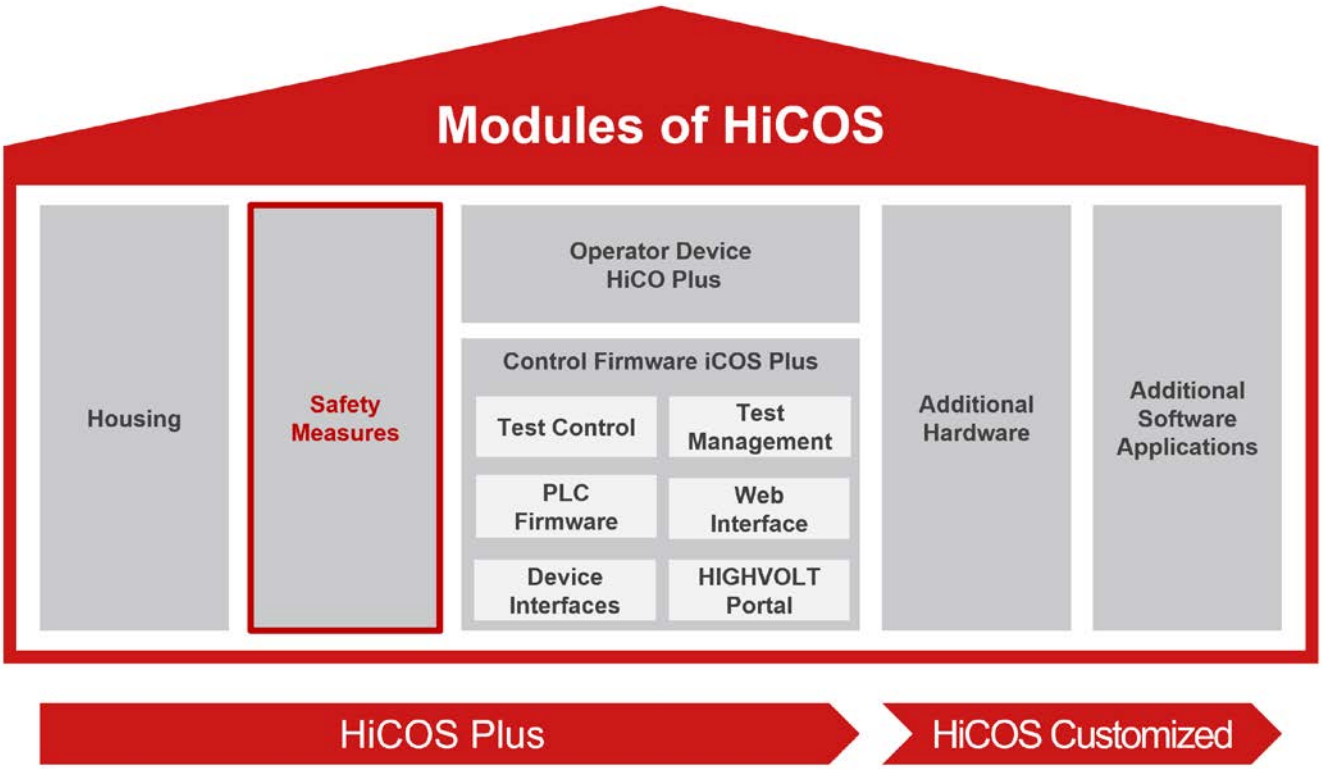

Figure 1: Overview of HiCOS modules – topic of this data sheet: Safety measures

The control system HiCOS is a collection of modules to control test systems and to record, manage, evaluate and report the measuring data. It is suitable for mobile and stationary test systems. The modular design of the control system HiCOS even allows further expansions of the functions.

Existing test systems from other manufacturers can be upgraded with HiCOS.

Description

Safety measures ensure the safety and health of the operators at work. The control of each HIGHVOLT test system includes the safety functions Emergency OFF and Safety loop that fulfill the requirements of the standard IEC 62061 (e.g. redundant safety loop). It is possible to include external emergency STOP buttons, door contacts and to interconnect several test systems. All safety measures from HIGHVOLT fulfill the latest requirements of international standards.

Table 1: Available components

Component	Description

Guard fences

Figure 2: Guard fence

- Movable barrier for the test area due to fence module with wheels
- Fulfills SIL CL 3 (according to IEC 62061)
- Several guard fences can be connected in series
- Dimensions (approx. L x W x H/mm): 2500 x 570 x 2000

Type	Green and red signal lamp	Door with two contacts
Guard fence	-	-
Guard fence with signal lamps	✓	-
Guard fence with door and signal lamps	✓	✓

Safety columns

Figure 3: Safety column

- Green and red signal lamps to indicate the operational status inside the test area
- Fulfills SIL CL 3 (according to IEC 62061)
- Dimensions (approx. L x W x H/mm): 380 x 380 x 1200

Type	Emergency STOP button	Horn	Pushbutton for horn
Safety support with emergency STOP button	✓	-	-
Safety support with horn	-	✓	✓
Safety support with emergency STOP button and horn	✓	✓	-

Safety circuit

Safety circuit consists of:

- 8 safety columns with emergency STOP button, without horn
- 1 safety column with horn and pushbutton for horn
- Cables and chains (length = 5 m) between safety columns with warning signs

Table 1 continued: Available components

Component	Description
Test field visualization PC	▪ The set is required for the visualization of the test field. ▪ The set consists of a box PC, including keyboard and mouse. ▪ An HDMI cable allows the connection to the test field visualization monitor.
Test field visualization monitor  *Figure 4: Test field visualization monitor*	▪ The monitor is prepared for wall mounting. ▪ Main parameters: Main supply 1NPE V 230 Hz 50/60 kVA 0.5 Duty cycle continuous operation Dimensions (approx.) Width (w) mm 640 Height (h) mm 530 Depth (d) mm 230 Screen diagonal inch 27 Total weight kg 5
Test field visualization firmware	▪ The firmware is installed on the test field visualization PC. ▪ It allows the visualization of the following components: – Door contacts – Emergency off buttons – Disconnectors – Earthing switches – Safety lamps
Test field configuration firmware	▪ The firmware extents the test field visualization firmware, it is installed on the test field visualization PC. ▪ It allows the flexible organization of the test field in different test areas. ▪ The effort for realization depends on the test field layout.

Table 1 continued: Available components

Component	Description
Safety extension unit	▪ The unit extends the safety system with safety-related decentral periphery and digital outputs. ▪ The unit is necessary if one of the following conditions is given: – The number of required safety related inputs exceeds the number of available safety related inputs, provided with the control of delivered test systems. – The distance between sensor and safety control exceeds 100 m. – A flexible organization of the test field in different test areas is required. ▪ Main parameters: Main supply 1NPE V 230 Hz 50/60 kVA 2.3 Duty cycle continuous operation Dimensions (approx.) Width (w) mm 380 Height (h) mm 300 Depth (d) mm 210 Total weight kg 15 Installation indoor, stationary Safety related inputs 4 (SIL CL 3) Safety digital outputs 4 (potential free) Distance sensor to m max. 100 ▪ The unit can be upgraded with max. 4 fail safe add-ons (leads to max. 20 safety related inputs / outputs). ▪ Several safety extensions units can be connected.
Fail safe output add-on	▪ The add-on extends the safety system with 4 safety related outputs. ▪ It is necessary if the safety system of existing systems from HIGHVOLT or other manufacturers shall be connected to a new safety system.
Fail safe input add-on	▪ The add-on extends the safety system with 4 safety related inputs. ▪ It is necessary if one of the following conditions is given: – The number of required safety related inputs exceeds the number of available safety related inputs, provided with the safety extension unit. – The test system is installed in a shielded room.

Table 1 continued: Available components

Component	Description
Video monitoring / IP camera unit	▪ Recommended for complex test fields in which the operator cannot see the complete test area. ▪ Live view & control via internet browser possible. ▪ Video recording is possible with optional recording unit. ▪ The IP camera unit consists of: – Camera with connection box – Ethernet fiber-optic converter ▪ Main parameters of the camera with connection box: Dimensions (approx.) Length (w) mm 800 Width (w) mm 300 Height (h) mm 300 Total weight (approx.) kg 10
Video monitoring / Recording unit 8 channels	▪ Recording of the live view stream of the connected IP camera units possible. ▪ Prepared to connect up to eight IP cameras via fiber-optic Ethernet (on request up to 32 channels available). ▪ The recording unit consists of: – Evaluation unit with PC and monitor (19" built-in unit) – Control and recording software