



Mobile operating terminal without tripping hazard:

Freedom **Redefined**

No one likes being kept on a short leash. That is why the cables connected between mobile operating devices and the machines they control are always longer. In the coming age of Industry 4.0 and the „Internet of Things“, this is no longer state of the art. Therefore with the HGW 1031, SIGMATEK is now introducing a wireless mobile operating panel to the market that in the second step, will be equipped with an emergency stop function. By getting rid of the cable, a notorious tripping hazard is eliminated and the user provided with a new degree of freedom.

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In industrial production, personnel Safety and accident prevention are taken very seriously. To eliminate the danger of injury, the moving parts of complex machines are made inaccessible to humans mostly using guard doors. The same applies to assembly or robot cells. They are normally surrounded by high Safety fences. And these cover increasingly larger sections of production facilities.

Mobility for Machine Operation

Not only, but that's also why parts of large machine and production cells are not completely visible from central operating terminals. For machine operators however, direct process observation with the possibility of direct

access up to emergency stopping is indispensable. Especially in setup mode, when processes and movements within the installation are optimized, they must promptly react to situations such as danger of collision for example.

Machine manufacturers and automation specialists have therefore already been offering mobile devices for some time to enable location-independent operation and monitoring of machines and systems. Such portable handheld devices allow program control directly on-site. „No one likes having their freedom of movement limited, this includes machine operators during setup of processing or robot cells“, knows Franz Aschl, Innovation Management at SIGMATEK. „Our mobile operating devices are therefore delivered with increasingly longer cables. 25 meters is thereby the norm rather than the exception.“

Dangers with a Long Range

Such long cables however, also have disadvantages. The combination of wires for power supply and data transfer, as well as shielding and robust insulation for harsh environments make them heavy. Because it is hard to always carefully wind them up, they are often left lying somewhere unchecked. They thereby present an obstacle and are a dangerous tripping hazard for personnel.

They are also exposed to the danger of damage from forklifts or pallet trucks. That makes the replacement part vendors happy, operationally however, every cable break is a mild catastrophe. If the connection with the emergency stop button in the operating panel is cut, the Safety circuit or control must bring the system to a safe still-stand. Such unplanned still-stands are the opposite of what machine operators want. →



In the second step, the wireless mobile operating device HGW 1031 will be equipped with an emergency stop function via WLAN.



The wireless WLAN handheld operating device, HGW 1031 brings a new dimension of freedom. With the elimination of the cable, SIGMATEK also eliminates a notorious tripping



As with all HMIs from SIGMATEK, the HGW 1031 is also comfortably programmed with the all-in-one software LASAL.

Forget the cable?

That increases the demand for a wireless variant of such operating devices. SIGMATEK has therefore designed two device variants; one with and one without Safety elements. To change recipes or parameter settings, as well as check production numbers, maintenance and operating modes, no Safety functions are required. „If however, a machine or system should

be controlled directly using a mobile panel, the integration of an emergency stop function is essential“, says Franz Aschl. „After all, a machine operator with the device in hand can position themselves quite far away from the next button permanently installed on the machine. The cable-bound operating devices from all well-known manufacturers – including of course, the HGT control panels from SIGMATEK – are therefore equipped with an

emergency stop button integrated directly on the unit. Currently, the Salzburg automation specialist is working on the emergency stop function via WLAN. „The transmission of safety-oriented signals via WLAN using the Black-Channel principle is in itself no problem“, say Franz Aschl. „However, for the unlimited use in the wireless network, things must be taken into consideration that play no role for wired devices“.



“ We are pleased to give users of SIGMATEK automation technology an option to raise the ergonomics of their machines and production cells to a level that fits the coming age of Industry 4.0 and the Internet of Things.

**Franz Aschl, Innovationsmanagement
Sigmatek GmbH & Co KG**

No weight gain despite battery

That starts with the weight of the HGW 1031. The wireless mobile control panel has, like the familiar cable-connected panel HGT 1035 model, a 10.4“ touch screen and an EDGE2 Technology processor. Since SIGMATEK uses the same housing,

the front is also in IP54 protection. „To ensure low-fatigue operation, such devices cannot be too heavy“, states Franz Aschl a requirement whose fulfillment presented a certain challenge. „We designed our product to that it can operate under a full load for two hours, after which the power supply must be connected or it must be turned off.“ This made it possible to design the device, at 1,200 g including the battery pack, with exactly the same weight as the cable-connected panel. Since the weight and drag of the connected cable is eliminated, the wireless variant can be operated with significantly less effort.

Hurdles on the Way to Freedom

New for the user of such WLAN operating panels, is the need to log into



During transmission of safety-relevant data via WLAN, things must be taken into consideration that play no role with a connection via cable.

the assigned machine. That is important, because this connection is not forced by a cable via hardware, rather through the application programming of the software only. Logging off before leaving the machine environment or shutting down is just as important. If the connection to the integrated emergency stop button is lost, the Safety control, as with a cable break, must assume that a safety-related problem has occurred and stop the machine.

„SIGMATEK created the necessary mechanism for this during the development of the device software. It is therefore possible to assign a specific WLAN panel to always connect with a specific robot. This also applies to the integration of system components or machine options that are not always available or turned on“, confirms Franz Aschl.

„Storage of the deactivated device so that its emergency stop button is not accidentally triggered, as required by professional organizations, cannot be solved technically but only organizationally.“

Freedom Redefined, Seamlessly Integrated

Otherwise, the approximately DIN A4 sized WLAN panel (264 x 226 x 73.3 mm) communicates in the same manner as the cable-connected mobile devices with the Safety control from the thin module series S-DIAS from SIGMATEK. As with all SIGMATEK systems, it is programmed with object-orientation in LASAL. Application programmers thereby use the HMI tool LASAL SCREEN. This contains an extensive library of display and design elements, alarm and event functions, as well as recipe management. This simplifies the creation of ergonomic and user-friendly interfaces for operating and monito-



The safe signals from the integrated emergency stop button reach the Safety control form the thin SIGMATEK S-DIAS series via „Black Channel“.

ring machines and systems. If the option to use the new safe WLAN mobile operating panel HGW 1031 is planned during the application programming, the programmed machine or system can even be operated with this or the cable-connected model without changes to the software.

„The HGW 1031 can be integrated into the completed solution for the same costs as the cable-connected HGT 1035“, explains Franz Aschl. „We are pleased to give users of SIGMATEK automation technology an option to raise the ergonomics of their machines and production cells to a level that fits the coming age of Industry 4.0 and the Internet of Things.“

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