SAFEMASTER W

Radio controlled safety system - Wireless Functional Safety in group mode
SAFEMASTER W – Wireless Safety
in group mode ...

Safe wireless modules – reliably protect safety zones wirelessly

The radio controlled safety system UH 6900 in group mode offers new options and solutions in the field of functional safety. Even in areas where classic safety technology confronts its limits:

- Whether you need to wirelessly activate an emergency disconnect for a remote high bay shelving unit,
- or need to safely stop a control system to complete maintenance work on a conveyor belt or other moving equipment.

Problem solved, the radio controlled safety system UH 6900 uses the latest radio controlled technology to achieve a high degree of safety and increase production time.

Wireless, Safe, Reliable

The radio controlled safety system UH 6900 from the SAFEMASTER W series comprising a group controller and up to 255 group receivers, for safe data transmission of emergency-stop and control functions, providing a high degree flexibility when securing dangerous areas.

The group controller can be used to allow several receivers to be securely shut down via a unidirectional safety radio transmission. Furthermore the controller together with a single receiver in the group, can exchange indication, control and status information. The main application areas include, mobile systems such as completely-automated floor conveyors and automated guided vehicles.

Easy set-up procedure, configurable modules

Quick set-up is possible as the modules are pre-configured. The free SAFEMASTER W Manager software makes it easy to adapt the modules for different functions and the built in diagnostic functions aid set up.

Certified safety

The SAFEMASTER W series is approved for use in safety applications up to Cat. 4 / PL e or SIL 3. The latest radio controlled technology ensures reliable protection for people, machinery, and the environment.

... with high availability for ranges up to 800 m

SAFEMASTER W - Your advantages at a glance:

- **Unidirectional with indication signals**
  - Wireless safe signal transmission ensures a high level of availability, even in rough wide ranging and difficult to access plants

- **Safe signal transmission**
  - Safe radio transmission of emergency stop functions offers additional flexibility in protecting hazardous areas

- **Highest safety standards**
  - Suitable for use in safety applications up to Cat. 4 / PL e or SIL 3

- **High availability**
  - A stable wireless connection ensures disruption-free operation

- **Range**
  - The range in open areas is up to 800m allowing exceptional signal coverage

- **Signal strength**
  - Adjustable transmission power offers variable area coverage

- **Spectrum analysis**
  - The integrated Spectrum Analyzer provides a quick overview of all available channels

- **Group mode and start options**
  - Adjustable group mode with several start options allows customized system adaptation

- **Diagnostic options via USB**
  - Status display and data logging via the free SAFEMASTER W Manager software, extends functionality and simplifies set up

- **2-Channel safety inputs**
  - Connect up to 3 two-channel safety functions (E-stop, light curtain, safety gate, two-hand mode, etc.)

- **Control functions**
  - Up to 8 function inputs and outputs

- **Indication contact (Group controller)**
  - One indication output with 3 contact paths

- **Forcibly guided contacts (Group receiver)**
  - One safety output with 3 redundant contact paths
Basic function: safe shutdown of all group receivers ...

... shut down up to 255 group receivers with the group controller

Group mode

Operating principle

The radio controlled safety system UH 6900 in group mode, transmits safety signals from the group controller to one or more group receivers.

Up to three 2-channel safety sensors (such as emergency-stop, light curtain, safety gate, etc.) can be connected to the controller. After actuating one of these safety functions, the safety outputs of all group receivers shut down in a safe and reliable manner. This is accomplished by each receivers 3 x redundant safety contact paths.

Three hard wired safety sensors can be connected to each group receiver which can then operate its own safety contact output.

After actuating the safety function (e.g. emergency-stop) on the group controller, all group receivers switch off safely.

After actuating the safety function (e.g. emergency-stop) on the UH 6900 group controller, its own output contacts switch off safely.

3 dual channel safety inputs

3 safety inputs (*)
(local operation)

1 safety output

UH 6900 Group receiver

3 safety inputs (*)
(local operation)

1 safety output

UH 6900 Group receiver

3 safety inputs (*)
(local operation)

1 safety output

UH 6900 Group receiver

* After actuating the safety function (e.g. emergency-stop) on the UH 6900 group controller, its own output contacts switch off safely.

Safety-oriented shutdown
Function expansion: Control and report...

... bidirectional communication

Group mode with feedback

Operating principle

By pairing the group controller with a group receiver using the SAFEMASTER W Manager software, additional control, indication and status information can be exchanged between these devices.

Through the ability to transmit bidirectional signals, very remote receivers are also able to receive information, e.g. that the control command has been executed.

Each of the 8 digital inputs act on the 8 digital outputs of the coupled device, so they can be used for user-specific control functions - wirelessly without additional installation wiring costs.

The indication output with three contact paths forwards the status of the safety output of the paired group receiver to the controller.
Function expansion:
Group shutdown by every participant ...
... wireless and from any location

Group mode with reaction coupling

Operating principle
The group mode setting with reaction coupling provides a facility for the group shutdown. If the safety function of a group receiver is activated, the local safety output switches off and the output contacts of all the other group subscribers are not safety-oriented shut down.

This function expansion can be optionally activated with the SAFEMASTER W Manager software and offers some advantages, especially when processes are coordinated with each other. If, e.g., a local emergency-stop is actuated in a zone, all system parts that are participating are also shut down.

⚠️ After actuating the safety function (e.g., emergency-stop) on the UH 6900 group controller, its own output contacts switch off securely. At the same time, the group receiver transmits an indicator signal to all additional group subscribers to shut down (not safety-oriented). This option can be configured using the supplied SAFEMASTER W Manager software.
The radio-controlled safety system UH 6900 makes best use of its inherent advantages in wide-ranging and mobile systems where wiring is not possible, e.g., in logistics with automated guided vehicles (AGV).

With the group controller in the switch cabinet, all AGVs can be safety switched off during an emergency stop. This guarantees safety during service or maintenance procedures and on installation.

In addition, each AGV can be locally switched off during a dangerous situation. With “Group mode with reaction coupling,” all subscribers in the group can also be simultaneously stopped, which prevents a possible collision with the stationary AGV.

During maintenance or service work, the maintenance staff (forklift in Zone 2) can communicate through the “Group mode with feedback” function with the PLC. For example, certain zones can be blocked or released to let service work be carried out unimpeded in an active zone.

UH 6900 application ... complete protection for mobile systems and plants
Easy start up - Quick start in just 3 steps

1. Quick and easy setting of the operating mode via a rotary switch

2. Select frequency channel using SAFEMASTER W Manager

3. Set transmission power using SAFEMASTER W Manager

SAFEMASTER W Manager - comprehensive diagnostics

Quick and easy set up and diagnostics for your wireless system

DOLD offers a free software program “SAFEMASTER W Manager” which facilitates set up, diagnostics and system logging through a simple graphic user interface.

The “Group mode with feedback or reaction coupling” function expansion can be set with the SAFEMASTER W Manager software.

The software ensures fast diagnostics, additional live status displays and data logging, facilitating the best possible availability of machinery and systems.

The integrated Spectrum Analyzer provides a quick overview of all available radio channels and potential interference.

- **Display** (device labeling, set frequency range 433 MHz or 869 MHz, received transmission power)
- **Setting** (device names for the two UH 6900 modules connected wirelessly, frequency channel, transmission power)
- **Diagnostics** (current module status display, assessment of status log and additional diagnostic options)
- **Spectrum analysis** (the integrated Spectrum Analyzer provides a quick overview of all available channels)

*Option - PC not required for start-up operation
Flexible, versatile - System components

SAFEMASTER W System overview

Wireless Safety Solutions from a single source

The radio controlled safety system UH 6900, expands on the comprehensive DOLD functional safety wireless product range. In addition to the existing SAFEMASTER W safe mobile emergency stop systems and wireless enabling switches, DOLD now offers a safe wireless solution for paired and group mode operation systems. It can be integrated wirelessly into a variety of safety-related applications, even in rugged, difficult to access and wide ranging systems.

The radio controlled safety system UH 6900 can be configured to easily and efficiently handle many different wireless functional safety challenges. Especially in areas where wiring would be impractical or impossible. Evaluate the Safemaster W solutions now for yourself!

Economic efficiency

The UH 6900 wireless safety module - safe and economical to use:

- Direct, flexible and cost-effective software control
- Wireless enabling switches
- Centralized Software Control
- High system availability
- Simple retrofitting
- Fast start-up
- Reduced wiring and installation work
- Simple retrofitting
- Highly economic

Best possible safety for all industries

- Intralogistics
- Machine building industry
- Paper and printing industry
- Food industry
- Automotive industry
- Recycling industry
- Packaging machines
- Mining and steel industry
- Gantry cranes
- Transportation and conveying technology
- Wind energy systems
- Ship building and harbour systems
- Construction materials industry
- ... and anywhere else where safety is the highest priority. Also in your industry!

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>Type</th>
<th>Device type</th>
<th>Performance Level (PL) according to EN ISO 13849-1</th>
<th>Safety Integrity Level (SIL) according to IEC 61508</th>
<th>Safety Inputs</th>
<th>Outputs</th>
<th>Semiconductor Connection type</th>
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<td>Wireless Group controller</td>
<td>Cat. 4 / PL e</td>
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<td>3</td>
<td>3 NO</td>
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<td>3 NO ¹</td>
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</table>

¹) Aerial not included in scope of delivery
²) 2 Channel
³) Forcibly guided contacts
⁴) Also available as cage clamp terminals
Our experience. Your safety.

SAFEMASTER - Multifunctional safety solutions

Innovative safety concepts

As a solution provider for safe automation and electrical safety, DOLD offers a comprehensive product portfolio from a single source. Our SAFEMASTER solutions have been successfully used for many decades around the world.

From single function safety switching devices for simple safety applications through to multifunction, modular safety systems, DOLD develops tailor-made solutions for your industry and applications.

We would be happy to provide you with information about further safety solutions.

SAFEMASTER STS

The SAFEMASTER STS modular safety switch and key transfer system serves to monitor the moveable safety guards. It combines the advantages of safety switches, guard locks, key transfer and command functions in a single system. The new FRP variation stands out for its attractive design, and can be combined with our trusted stainless steel version.

SAFEMASTER S

Our solutions for secure drive monitoring utilise a combination of safe speed, standstill, or frequency monitoring, with or without external sensors, to increase productivity and safety.

SAFEMASTER PRO

The modular and configurable SAFEMASTER PRO safety system monitors all safety circuits of your machinery and installations – in a simple, flexible and safe manner. The number of inputs and outputs of the central control unit can be upgraded via extension modules at any time. Now also featuring safe speed monitoring and dynamic program realization.

SAFEMASTER W

The emergency stop system and radio controlled enabling switch in the SAFEMASTER W series can be used to wirelessly shut down hazardous movements in a fraction of a second. The Wireless Safety System thus ensures maximum freedom of movement for the operating and maintenance personnel.

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