



Product information

## Safe AGV/AMR Monitor

### Design Package for Automated Guided Vehicles with Safety Functions

Further Info

Functional Safety for AGV & AMR

[Visit Page](#)

### Overview

Flexible Automated Guided Vehicle, carts, autonomous mobile robots have a rapidly growing market in the field of intra-logistics. There are special requirements for functional safety regarding IEC61508, ISO13849 or ISO 3691-4: e.g. safe stop during charging, emergency stop, safe brake, safe speed, safe load handling, personnel detection, interfaces to higher-level safety controllers, safe data processing, safe I/O, etc.

### Technical Description

- Safety related core architecture as 1oo2 system for redundant microcontroller STM32F74x
- Modular hardware and software design according to IEC61508 SIL3, ISO 13849 Cat3 PL-d, HFT=1
- SW Libraries for synchronization, mutual monitoring, MCU self-test, safe task handling
- Safety I/O handling for GPIO: F-DI/F-DO/SBC/OSSD
- SW standard C99 MISRA-C 2012
- Optional speed monitoring with Encoder Master and feedback handler
- Optional Asynchronous Interfaces (UART) to handle Black Channel communication from safe Industrial Ethernet protocol FailSafe over EtherCAT or PROFISAFE

The Design Package **significantly reduces** the **development time** for Safety related AGV/AMR systems. It is available as:

**Hardware / Software Design Package with circuit diagrams and software libraries in source code for full customer specific design.**

#### Non-safe AGV/AMR Controller

AGV/AMR Application Software

#### Safety AGV/AMR Application

##### AGV/AMR Monitor Design Package

Host Interface

##### AGV/AMR Safety Execution Environment

Safety System Software

Safe Digital I/O

Safe Encoder Input

Customer Specific AGV/AMR Safety Application Software

Digital Sensor & Actors

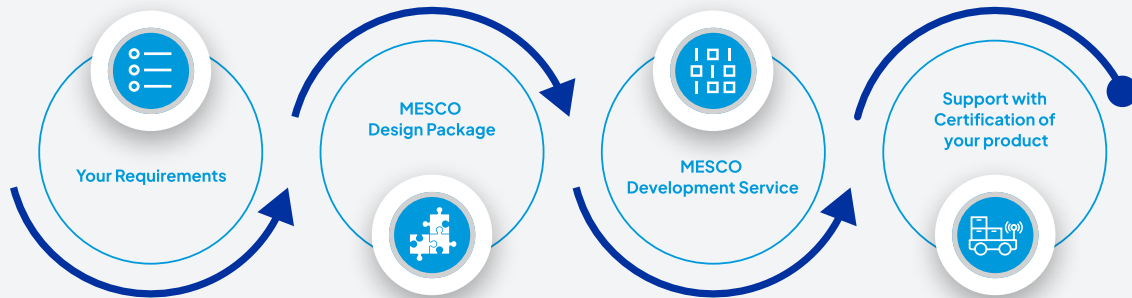
Digital Sensor & Actors

Encoder

Brake



## Experts for your safety project



### Delivery Content Safe AGV/AMR Monitor

- Modular Safety System Software with Task handler, Cross Communication, MCU sync and Self-test lib, HAL
- Safe Torque Off function (STO)
- Safe Digital Input Handler (F-DI) to read safe sensor data e.g. for distance detection of persons and obstacles as scanner outputs, limit switches
- Safe Output Handler (F-DO) to switch emergency stop functions of a drive (STO)
- Safe Brake Control (SBC) handler
- MESCO Design Package Evaluation Boards: Carrier board, Safe Core B1, F-I/O C1 (DI/DO), F-I/O C2 (SBC)

### Your Benefits

- ✓ Design Package directly useable for AGV/AMR related development projects
- ✓ Saving on development by using proven hardware circuitry and software libraries
- ✓ Proof-of-Concept with MESCO Evaluation Boards
- ✓ Cost and risk reduction of the project
- ✓ Shorter time to market through effort reduction
- ✓ Easier safety assessment and product certification

### Optional MESCO Software Libraries

- Safe Encoder Master for speed monitoring
- SW Library for Advanced Safety Function according to IEC61800-5-2 e.g. SS2, SOS, SLP, SLS, SDI, SBC
- SW Lib Wrapper for FSoE EtherCAT prepared for third party EtherCAT stack
- SW Lib Wrapper for PROFISAFE prepared for third party PROFINET stack



### Fast and safe to market?

We are looking forward to your inquiry.



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