

Safety solutions dynamic & innovative

SAFETY@ITS BEST!

ABOUT US

BBH Products is a leader in the field of safe drive monitoring and deterministic, high-speed safety processes. For more than 20 years, we have been on the cutting edge to introduce new comprehensive safety functions for safe drive monitoring and short, guaranteed response times also for IO signal processing. With solutions for both:

safe stand-alone = Safety separated and
fieldbus-based safety technology = Safety integrated,
we are the right partner for all functional safety tasks!

- **Safety integrated:**
SCU, SSCU series , SMF / FSoE Master & Slaves
- **Safety separated:**
SMX series / central & decentral solutions
- **Easy & powerful programming: SafePLC²**

SERVICES



Application planning
Standard / customized solutions
For your application



Initial / Start-up
Configuration, parameterization & function test
Commissioning support



Product & system support
Per phone, e-mail & contact form
Support for all technical questions



Product training
Online or in-house

ADVANCED SAFETY CONTROLS

FSoE devices



SAFE SIGNAL PROCESSING &
FAST MOTION MONITORING

SSCU/1 Series
Safe kinematic solutions

Features

MORE SAFETY

SSCU/1-series

Additional safety controls for the EtherCAT environment

FSoE Master / Slave

Safety controller with scanner master functions, activation of monitoring areas, special AGV functions and optional available with encoder interface (SSCU/1/AX).

Sicherheitssteuerung mit Scanner-Masterfunktionen, Freischaltung von Überwachungsbereichen, speziellen FTS Funktionen und optional erhältlich mit Encoder-Schnittstellen (SSCU/1/AX).



- 1 EtherCAT interface for FSoE slaves (e.g. Scanner)
 - 2 Serial scanner interface (max. 6 Hokuyo scanner)
 - 16 Safe digital inputs
 - 8+4 Digital outputs, pn- or pp-switching outputs
 - 2 Pulse outputs
 - 2 Relay outputs
 - 4 Encoder interfaces
 - 1 Multifunction button
 - 1 7-Segment display
- **Encoder types:**
INC/HTL, TTL/HTL, Resolver, SSI/BISS, Sin/Cos, Analog Encoder



SSCU/1

SSCU/1/AX

SSCU IO/1

SSCU AX/1

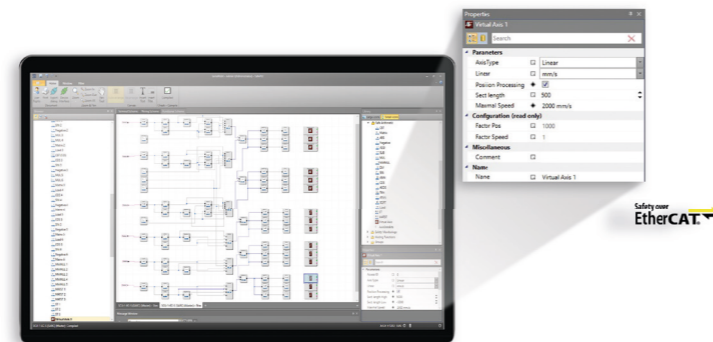
FSoE Master

Central expansion modules

SARC - SAFE ARITHMETIC CALCULATIONS

Features in SafePLC²

- **NEW!** Software-Modul "SARC", for floating-point calculations
- Integrated in SCU series (FSoE Master controls)
- **High precision** with float calculation
- Available in two expansion stages **SARC BASIC** and **SARC ADVANCED**
- **SafePLC²** - a programming software, From simple safe IO logic to complex safe calculations
- **Certified up to** IEC 61508 SIL3 and EN ISO 13489-1:2015 PL e



New Library and functions in engineering software SafePLC²

SARC includes a wide-ranging library for safe calculations in float data format. These range from simple operations through trigonometric and root functions to matrix calculations. A large selection of safety-related tasks can be implemented.

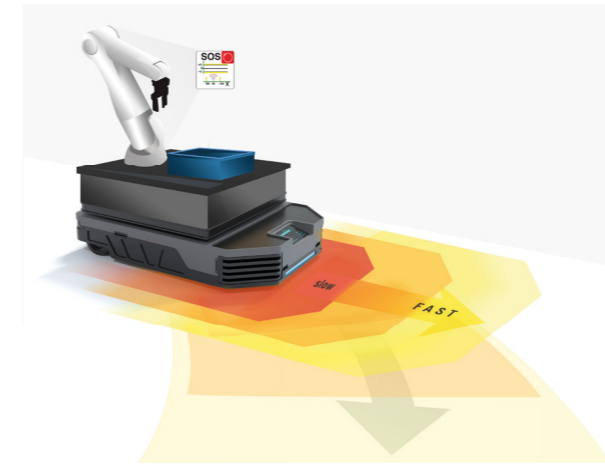
Safety solutions for robots, cobots & AGV's

Flexible management and dynamic activation of safe area monitoring and safe workspace

Safety with a difference!

To ensure safe and easy movement of automated guided vehicles (AGV's), their direction and speed has to be tracked and safely processed. The FSoE master safety controls SSCU/1/x are ideal for this application. The safe components are space efficient and easily integrated in AGV's. A comprehensive range of ready-certified safety functions means that AGV applications can be created in no time at all. All this is done in the usual simple and clear way with SafePLC2. It supports the user from start to finish. Through graphical parameterization, diagnostics up to the validation of simple to highly complex AGV's with the use of the software module Safe Arithmetic Calculations (short "SARC") easy to realize.

- Safe Arithmetic functions integrated in FSoE Master devices
- Safety-related tasks: such as scanner field switching for AGV's related to kinematics and position of the steering axes



- **Safe AGV** Safe speed detection & monitoring
- **Safe AGV** Safe direction detection
- **Cobot** in standstill mode (SOS)



- **Cobot active** spatial monitoring (SWM), AGV in stop mode (SOS)
- **Warning & stop field management**
Intelligent field activation by speed and direction information. Additional IO's for speed and safety control. All other safety limit switches and sensors (e.g. manual mode, install mode, on truck sensor) can be evaluated safely and linked to their respective conditions (e.g. SLS, SCA, SSX,...).

Cobot solution: SWM - Safe Workspace Monitoring & Force control

Safe Cartesian TCP joint speed / position detection & monitoring = safe workspace monitoring

- Safe Cartesian TCP Joint position / speed detection & monitoring
- Safe dynamic workspace monitoring
- Safe Cartesian speed range
- Safe acceleration detection
- Safe force detection & monitoring



- **Force Limit**
Dynamic axis load detection
TCP / Joint force monitoring
- **Person tracking**
SCA - Safe cam, safe laser scanner
STO - safe torque off at contact (robot)
Safe position range (robot)
SLT - Safe Limited Torque (robot)
- **Robot setup**
Safe limited speed (TCP, Joints)
Safe standstill monitoring (robot)

