

Kuhnke FIO Safety

Control Technology

Kuhnke FIO, Modular I/O System CODESYS Safety PLC and Safety I/Os

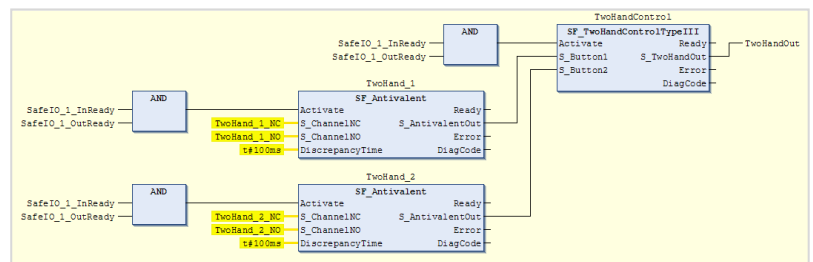
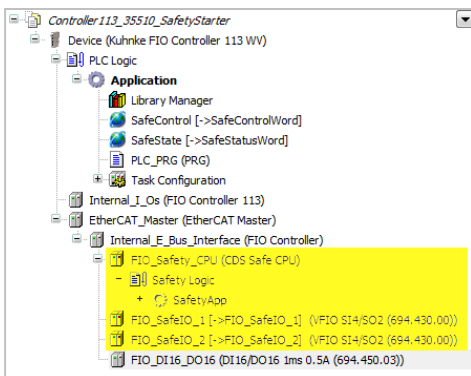
- Modular safety control system
- CODESYS Integrated Safety FUP Editor
- PLCopen Safety Modules
- Cross-communication between PLC and safety PLC
- Online monitoring of secure and insecure data
- Fail Safe over EtherCAT® (FSoE)
- SIL 3 according to IEC 61508
- PL e according to DIN EN ISO 13849



Programming:

- From CODESYS V3.5 with Safety Extension
- PLCopen Safety Modules
- Integrated Safety FUP Editor
- Integrated safety application in the project tree

Safety over
EtherCAT®

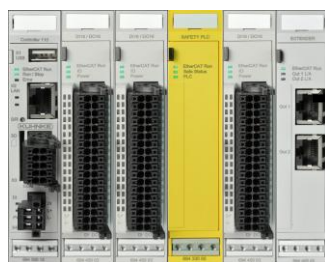


CODESYS V3 Device Tree Integrated with Safety

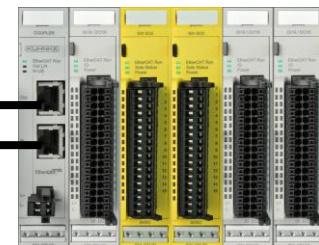
CODESYS V3 Safety FUP-Editor

Exemplary system structure:

- Standard CODESYS V3 SPS
- Kuhnke FIO Buskoppler
- Kuhnke FIO Safety PLC
- Kuhnke FIO Safety I/O
- Can be expanded as required by FIO modules



Kuhnke FIO control system with safety PLC



Kuhnke FIO Assembly with Safety I/O

EtherCAT®

Kuhnke FIO Safety

Control Technology

Technical data

Safety control	Kuhnke FIO Safety PLC EXT
Order number	694 332 00
Runtime system	CODESYS RT Safety
Programming tool	CODESYS from version 3.5 SP5 with integrated safety function modules
E-Bus Power Consumption	max. 240 mA
Safety standards	DIN EN 61508 SIL 3, DIN EN ISO 13849-1 PL e, Kat. 4
Supply voltage	Via e-bus connectors from the bus coupler or FIO controller
Signal Indicator	Status LEDs: EtherCAT®, Safety, Power

Safe input/output terminal	Kuhnke FIO Safety SDI8 / SDO2	Kuhnke FIO Safety SDI16 / SDO4	Kuhnke FIO Safety SDI16
Order number	694 430 10	694 430 20	694 431 00
Safety standard	IEC 61508 SIL3, EN 62061 SIL3 and EN ISO 13849-1 Cat. 4/PL e		
Security Protocol	FSoE (Fail Safe over EtherCAT)		
Number of inputs	8 x single-channel 4 x two-channel, (EN 61131-2, Type3)	16 x single-channel 8 x two-channel, (EN 61131-2, Type3)	16 x single-channel 8 x two- channel, (EN 61131-2, Type3)
Number of outputs	2 x Halbleiter, 0.5 A, 24 VDC (EN 61131-2)	4 x Halbleiter, 0.5 A, 24 VDC (EN 61131-2)	-
Number of test pulse outputs	4	8	8
E-Bus Power Consumption	max. 210 mA	max. 210 mA	max. 210 mA
Connection terminals	18-pin spring-loaded	36-pin spring-loaded connector	
Reliable response time	< 5 ms (read input, write to e-bus)		
Error Response Time	≤ watchdog time (parameterizable)		
Advanced diagnostics	About CoE		
Signal Indicator	LEDs per I/O: locally assigned to the terminal point, status LEDs: EtherCAT, Safety,		

General data

Fieldbus connection	EtherCAT 100 Mbit/s LVDS: E-Bus
Signal Indicator	LEDs per I/O: locally assigned to the terminal point, status LEDs: EtherCAT, Safety, Power
Supply voltage	24 V DC (-15% / +20%)
Mounting / Installation	35 mm DIN-Backs / horizontal
Environmental conditions	0 °C ...+55 °C, IP20
Conditions of use	In the control cabinet at least IP54
Housing (W x H x D)	Aluminium support, outer plastic 25 x 120 x 90 mm
Approvals	CE, cULus, TÜV Rheinland

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