## **BECKHOFF** New Automation Technology

# TwinSAFE Tutorial 11 | EN Download Safe Address

## Safe addressing of AMP and AMI



## Table of contents

1	Introd	roduction						
	1.1	Issue st	atuses	5				
	1.2	Requirements						
	1.3	Starting point						
	1.4	Demo system						
		1.4.1	Hardware	6				
		1.4.2	Desired functionality	6				
2	Demo	emonstration						
3	Alternative address configuration 11							

### BECKHOFF

## 1 Introduction

TwinSAFE includes several innovations that bring more functionality and performance to your safety controller. A major innovation is that the functionality of the safety controller is integrated in each TwinSAFE component. This means that you can, for example, use a TwinSAFE input component both as an input component and the safety control integrated on it to use application-specific pre-processing.

This is tutorial 11 of a tutorial series.

The aim of this tutorial series is to familiarize you with the TwinSAFE innovations using individual examples.

This tutorial is about the configuration of an address on an AMP8xxx. The procedure is identical for AMP and AMI.

#### 1.1 Issue statuses

Version	Comment
1.0.0	First released version
0.0.1	First draft

#### 1.2 Requirements

Meet the following requirements for this tutorial:

- TwinCAT 3 version ≥ 3.1.4024.11
- TwinCAT Safety Editor TE9000 ≥ 1.3.0

#### **1.3 Starting point**

At the starting point of the tutorial

• a TwinCAT 3 project with I/O configuration exists.

### 1.4 Demo system

#### 1.4.1 Hardware

The demo system of this tutorial consists of the following hardware:

- CX for EtherCAT communication and the standard PLC controller
- EL6910 as master TwinSAFE Logic
- EL1918 with safe inputs for reading light barrier signals
- Light barrier
- AX8000-x2xx
- AMP8040-0030-0104

#### 1.4.2 Desired functionality

This tutorial describes the implementation of the following functionality:

Configuration of an address of the AMP8040-0030-0104

## 2 Demonstration

Proceed as follows to set a safe address:

Devices
<ul> <li>Device 1 (EtherCAT)</li> </ul>
🚔 💂 Image
🚔 📮 Image-Info
SyncUnits
Inputs
Outputs
👂 🛄 InfoData
Term 1 (EK1200)
Term 2 (EL1918)
Term 3 (EL6910)
Term 4 (EK1122)
👂 🛄 InfoData
Term 5 (AX8620-0000-0103)
Drive 7 (AMP8040-0030-0104)
Mappings

#### 1. Open safe motion component

eneral EtherCA	T DC	Process Data Plc	EtherCAT P Slo	ts Startup CoE - Online	AoE - Online Diag Histo
Update L	ist	Auto Update	🛛 Single Update 🗌	Show Offline Data	
Advanced					
Add to Start	up	Online Data	Module OD (A	weE Port): 0	
Index	Name		Flags	Value	Unit
+ F709:0	FSOE S	Std UINT32 Outputs	RO	> 15 <	
+ F70A:0	FSOE S	otd INT32 Outputs	RO	> 15 <	
+ F70B:0	FSOE S	Std UINT8 Outputs	RO	> 62 <	
+ F70C:0	FSOE S	Safe UINT8 Outputs	RO	> 62 <	
F788	Standar	rd Inputs	RO P	00 00 00 00 00 00 00 00	00 00 0
E F980:0	Safe Ac	Idress	RO	>4 <	
F980:01	FSoE A	ddress	RO	0x0001 (1)	
F980:02	Serial N	lumber	RO P	0x00000000 (0)	
F980:03	Project	CRC	RO P	0x38C6 (14534)	
F980:04	Default	Project CRC	RO	0x38C6 (14534)	

2. Open tab "CoE-Online"

At index F980:01 you see the current FSoE address.



3. Click on "Download Safe Address" in the menu bar

Steps	Choose Safety Device
Choose Safety Device	Please choose a safety device from the I/O-Tree:
Set Safe Address	<ul> <li>Safe Address Example</li> <li>Device 1 (EtherCAT) [EtherCAT Master]</li> </ul>
Download Safe Address	<ul> <li>Term 1 (EK1200) [EK1200-5000 EtherCAT Power supply</li> <li>Term 4 (EK1122) [EK1122 2 port EtherCAT junction]</li> <li>Drive 7 (AMP8040-0030-0104) [AMP8040-00</li> </ul>
	(

- 4. Select safe motion component in "Choose Safety Device" window
- 5. Confirm selection with "Next"

Download Safe Addresses on De	evices without Dip-Switch	×
Steps	Set Safe Address	
Choose Safety Device	Safe Address:	
Set Safe Address	Drive 7 (AMP8040-0030-0104) - 139 +	
Download Safe Address		
	Back Next Cancel	aff

The "Set Safe Address" window opens.

- 6. Enter desired address
- 7. Confirm entry with "Next"

Download Safe Addresses on Dev	vices without Dip-Switch		
Steps	Downlo	ad Safe Address	
Choose Safety Device	Usernamer	Administrator	
Set Safe Address	Osemaine.		_
Download Safe Address	Password:	•••••	
	Verified FSoE-Address	Physical Device	Serial Num
	Please verify the safety de	vice data:	
	✓ 139 L	Drive 7 (AMP8040-0030-0104)	0

8. Enter the user name and password in the "Download Safe Address" window

Default user name: Administrator

Default password: TwinSAFE

9. Select safe motion component you want to download

10. Close window with "Finish"

eneral EtherCAT	DC Process Data Plc	EtherCAT P Slot	s Startup CoE - Online	AoE - Online Diag Histo
Update Li	st Auto Update	🗹 Single Update 🗌	Show Offline Data	
Add to Start	Jp Online Data	Module OD (A	oE Port): 0	
Index	Name	Flags	Value	Unit
+ F709:0	FSOE Std UINT32 Outputs	RO	> 15 <	
+ F70A:0	FSOE Std INT32 Outputs	RO	> 15 <	
+ F70B:0	FSOE Std UINT8 Outputs	RO	> 62 <	
+ F70C:0	FSOE Safe UINT8 Outputs	RO	> 62 <	
F788	Standard Inputs	RO P	00 00 00 00 00 00 00 00	00 00 00 0
E- F980:0	Safe Address	RO	>4 <	
F980:01	FSoE Address	RO	0x0001 (1)	
F980:02	Serial Number	RO P	0x00000000 (0)	
F980:03	Project CRC	RO P	0x38C6 (14534)	
F980:04	Default Project CRC	RO	0x38C6 (14534)	

11. Click on "Update List"

ieneral	EtherCA1	DC	Process Data	Plc	EtherCAT P	Slots	Startup	CoE - Online	AoE - Online	Diag Histor
	Update Lis	st	Auto Upd	ate 🗸	Single Update	Sh	ow Offline	Data		
	Advanced									
	Add to Startu	ıp	Online Data		Module O	D (AoE	Port):	0		
Inde	x	Name			Flags		Value		U	Init
÷F	709:0	FSOE S	itd UINT32 Outpu	its	RO		> 15 <			
+ - F	70A:0	FSOE S	itd INT32 Outputs		RO		> 15 <			
+ F	70B:0	FSOE S	itd UINT8 Outputs	s	RO		> 62 <			
+ - F	70C:0	FSOE S	afe UINT8 Output	its	RO		> 62 <			
F	788	Standar	d Inputs		RO P		00 00 00	00 00 00 00 00	00 00 0	
E-F	980:0	Safe Ac	Idress		RO		>4<			
	F980:01	FSoE Address		RO		0x008B (139)				
-	F980:02	Serial N	umber		RO P		0x000000	(0) 000		
100	F980:03	Project	CRC		RO P		0x38C6 (	14534)		
1	F980:04	Default	Project CRC		RO		0x38C6 (	14534)		

You will now see at index F980:01 that the new FSoE address has been successfully set.

## **BECKHOFF**

## 3 Alternative address configuration

- Without using TwinCAT 3
- Using the TwinSAFE Loader
  - TwinSAFE-Loader.exe
  - new additional call parameter "--writesafeaddress139".

More Information: www.beckhoff.com/twinsafe/

Beckhoff Automation GmbH & Co. KG Hülshorstweg 20 33415 Verl Germany Phone: +49 5246 9630 info@beckhoff.com www.beckhoff.com

