

## FAQ – configuration profinet example for series SX502

### Safety precautions

#### Important Information

Read these operating instructions before starting the unit. They provide you with important information on the use, safety and maintenance of the units. This helps you to protect yourself and prevent damage to the unit.



Information intended to help you to avoid death, bodily harm or considerable damage to property are highlighted by the warning Triangle shown here; it is imperative that this information be properly heeded.

#### Safety



components inside the units are energized with electricity during operation. For this reason, mounting and maintenance work may only be performed by professionally-trained personnel while observing the corresponding safety regulations.

The units do not have a power switch. They are operative as soon as the operating voltage is applied.

#### Intended use

The units are intended for use in industrial environments. They may only be operated within the limit values stipulated by the technical data.

When configuring, installing, maintaining and testing the units, the safety and accident-prevention regulations relevant to use in each individual case must be complied with.

Trouble-free, safe operation of the units requires proper transport, storage, installation, mounting and careful operation and maintenance of the units.

#### Mounting and Installation

The attachment options for the units were conceived in such a way as to ensure safe, reliable mounting.



The user must ensure that the attachment hardware, the unit carrier and the anchoring at the unit carrier are sufficient to securely support the unit under the given surrounding conditions.

The units are to be mounted in such a way that they can be opened up while mounted. Sufficient space for the cables must be available in the unit near the cable infeed.

Sufficient space is to be kept clear around the units to ensure air circulation and to prevent the build-up of heat resulting from use. The relevant information must be heeded in the case of units ventilated by other means.

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When the housing fasteners are opened, the front frame of the housing hinges out upward or downward (depending on the unit version) automatically.

### Grounding

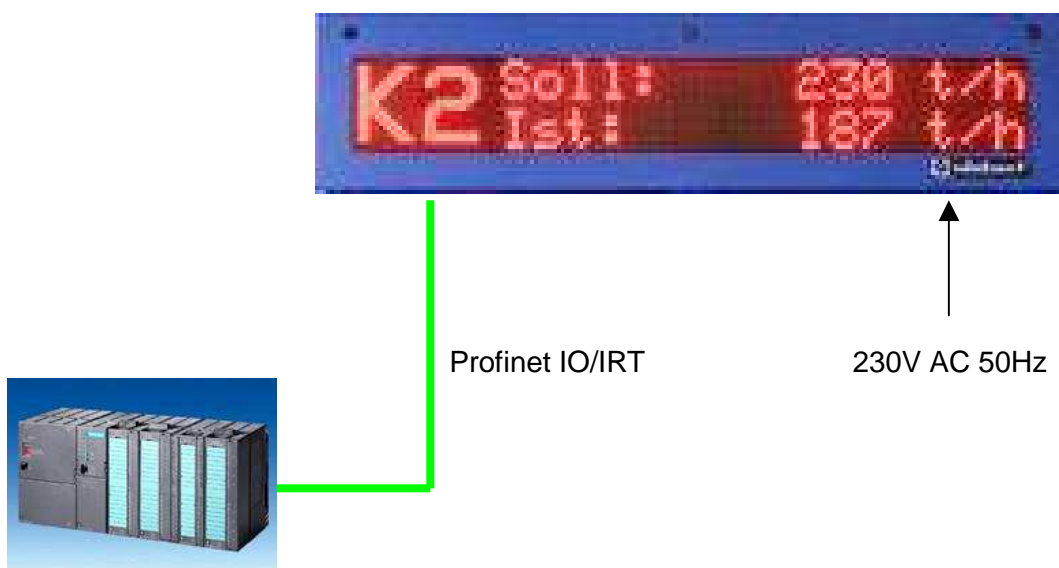
All devices are equipped with a metal housing. They comply with safety class I and require a protective earth connection. The connecting cable for the operating voltage must contain a protective earth wire of a sufficient cross section (DIN VDE0106 part 1, DIN VDE 0411 part 1).

### Other

Read first the chapter 1 of the manual.

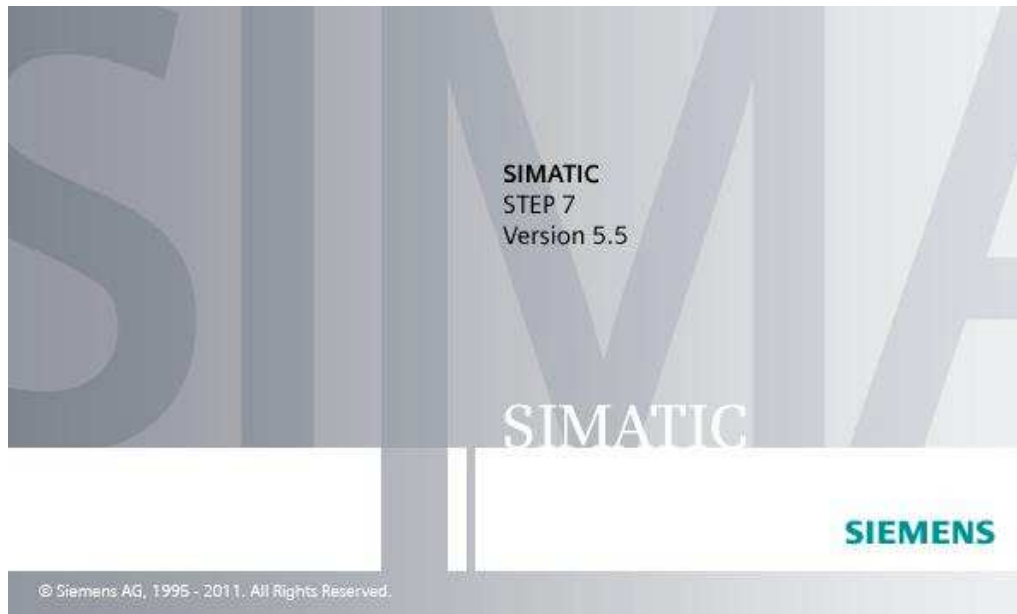
1. connect your new SX502 over profinet io on your plc and power supply

the best configuration to learn communicate SX502 over profinet io is to connect only one display on plc and no other functions will be on plc than the example file.

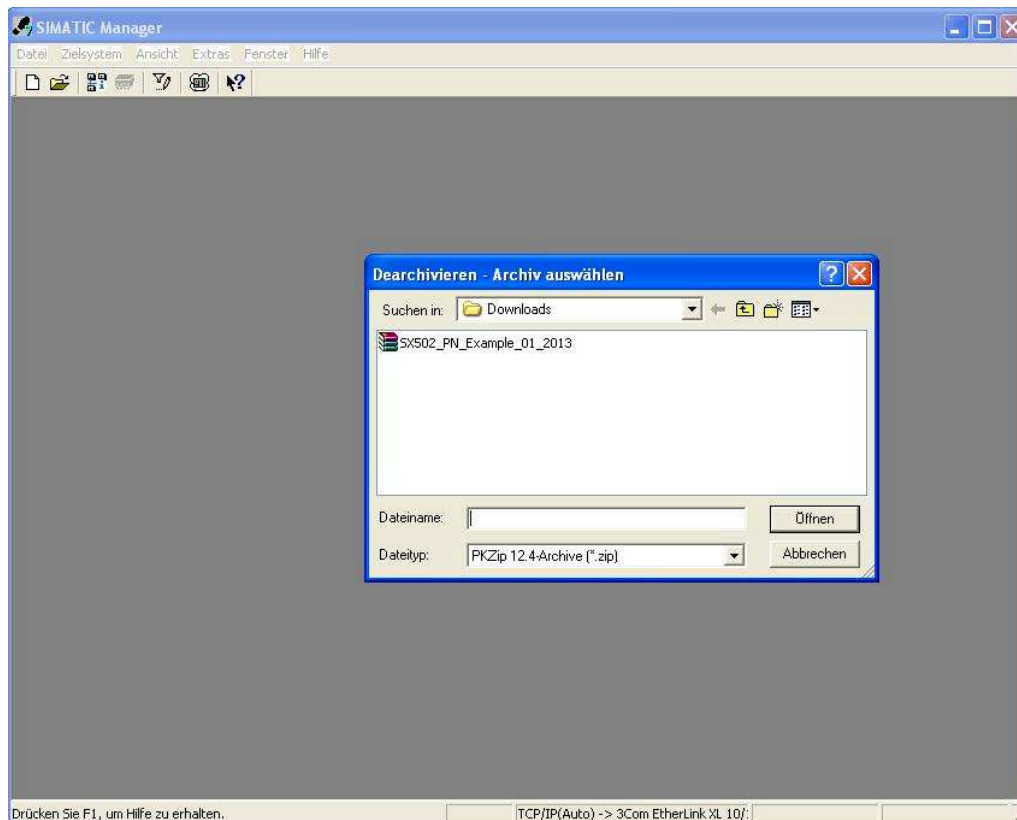


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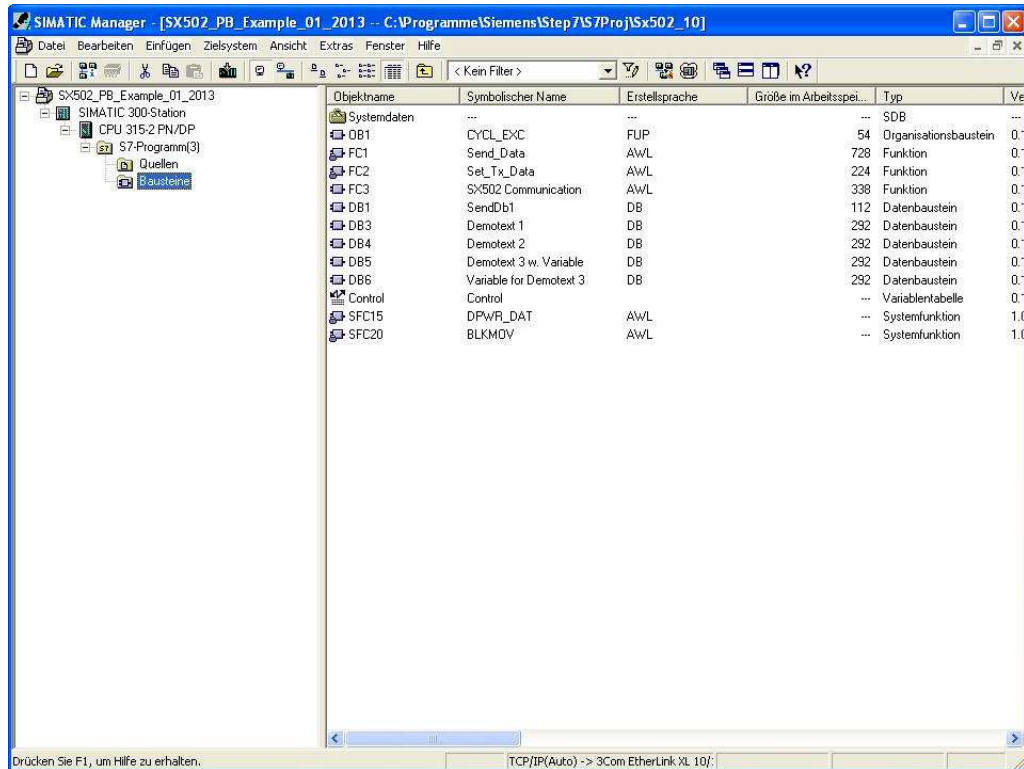
### 2. Start Siemens Simatic Manager



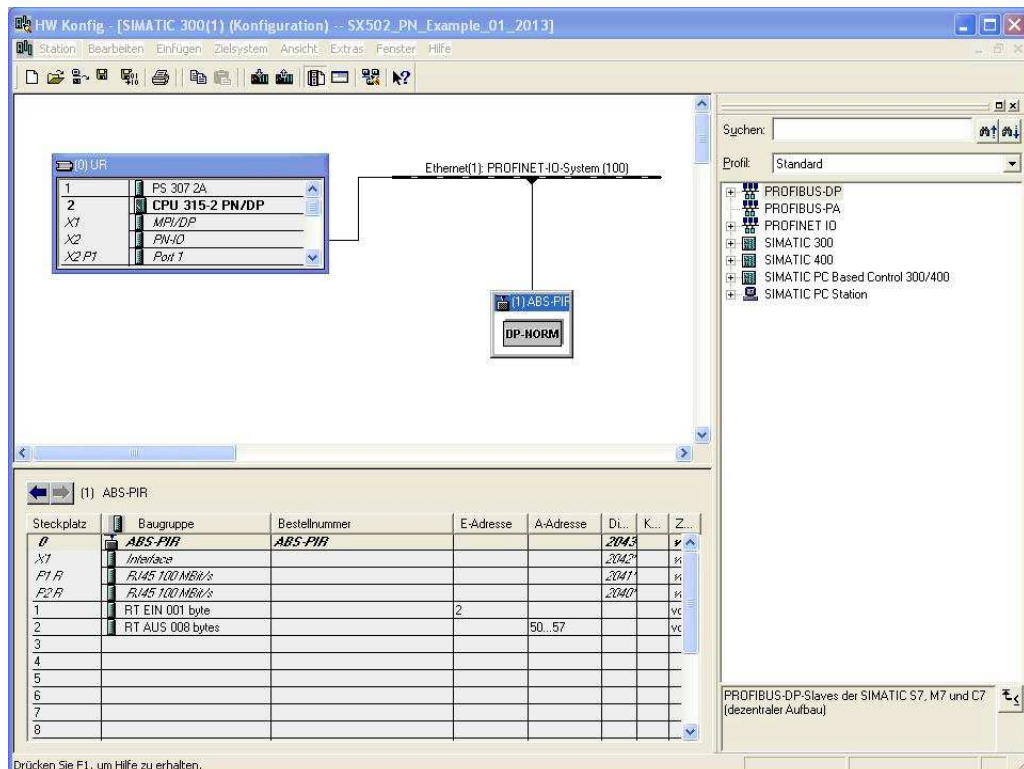
### 3. extract the example file from the file folder



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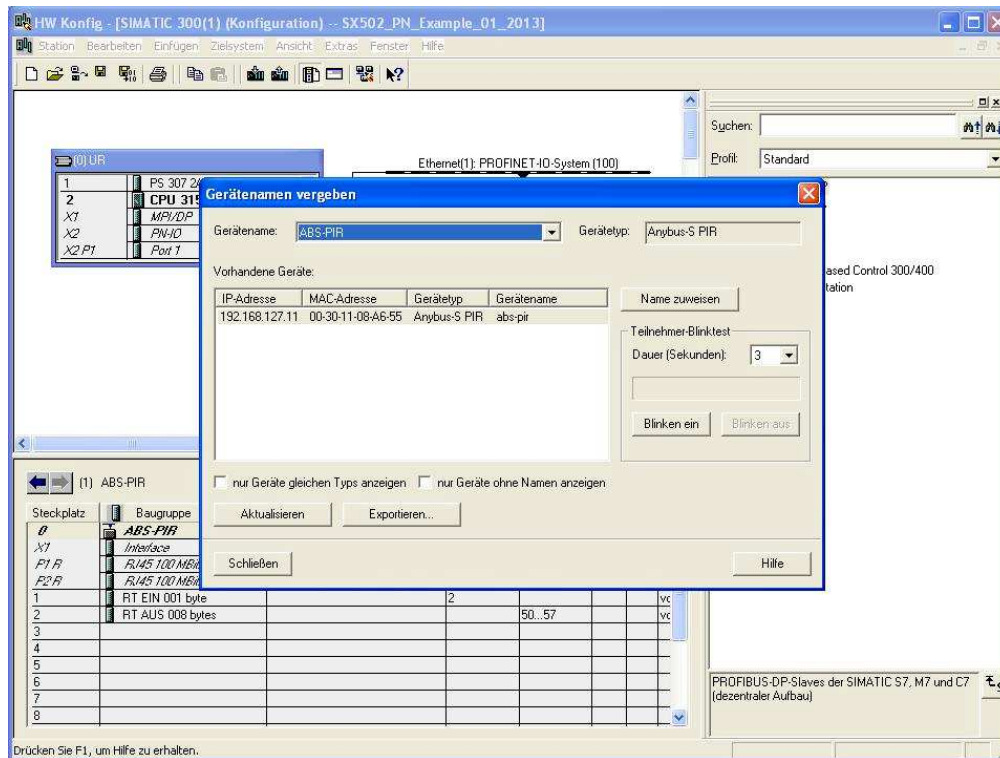


### 4. open the hardware configuration



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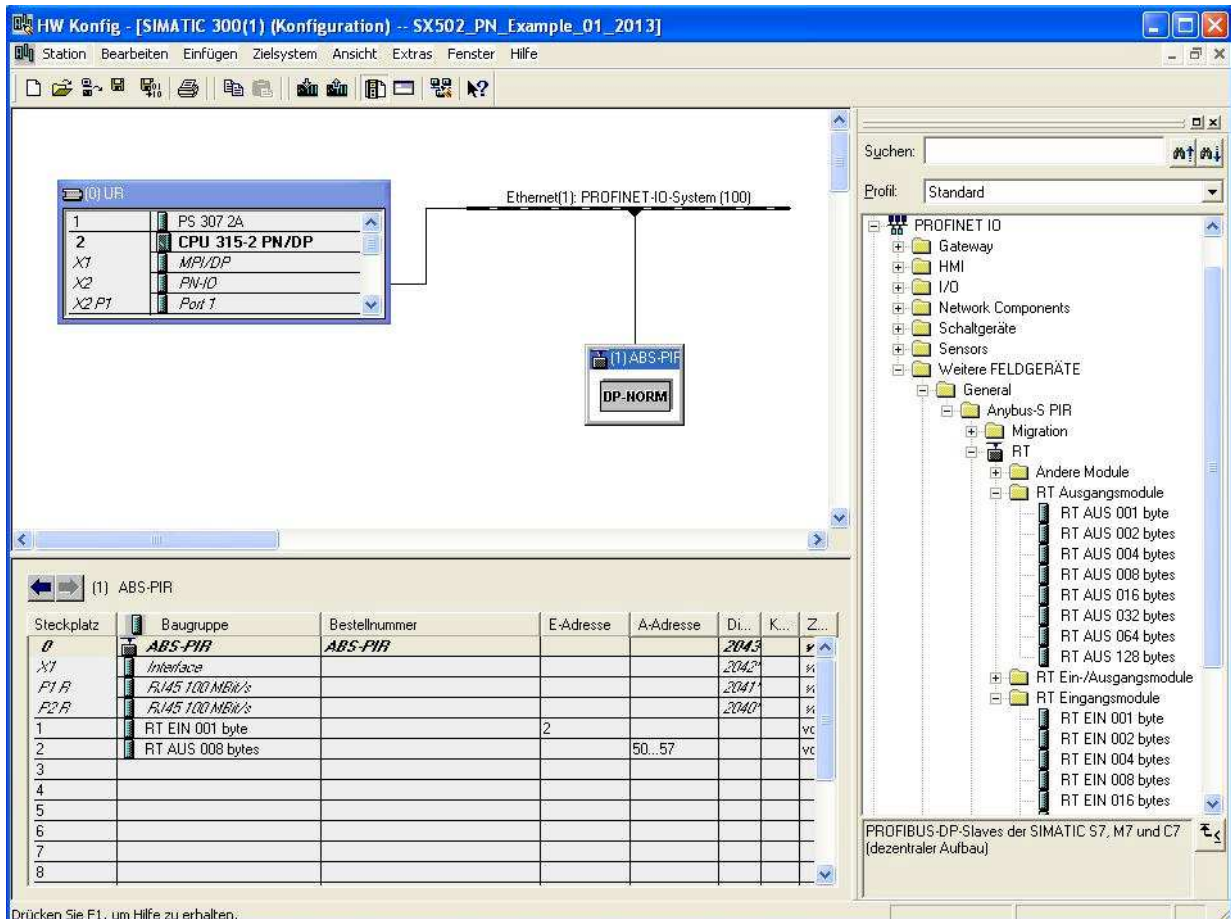
5. accolate a name to the slave and close the window



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- choose a configuration from hardware catalog and set it on the plug-in position of the profinet slave

(for example RT EIN 001 byte and RT AUS 008 bytes)



The screenshot shows the HW Config interface for a SIMATIC 300 station. The hardware rack is as follows:

Steckplatz	Baugruppe	Bestellnummer	E-Adresse	A-Adresse	Di...	K...	Z...
0	ABS-PIR	ABS-PIR			2043		
X1	Interface				2042	si	
P1 R	FM 45 100 MBit/s				2041	si	
P2 R	FM 45 100 MBit/s				2040	si	
1	RT EIN 001 byte		2			vc	
2	RT AUS 008 bytes			50..57		vc	
3							
4							
5							
6							
7							
8							

The hardware catalog on the right shows the selected configuration for the DP-NORM module:

- PROFINET IO
  - Gateway
  - HMI
  - I/O
  - Network Components
  - Schaltgeräte
  - Sensors
  - Weitere FELDKERÄTE
    - General
      - Anybus-S PIR
        - Migration
          - RT
            - Andere Module
              - RT Ausgangsmodule
                - RT AUS 001 byte
                - RT AUS 002 bytes
                - RT AUS 004 bytes
                - RT AUS 008 bytes
                - RT AUS 016 bytes
                - RT AUS 032 bytes
                - RT AUS 064 bytes
                - RT AUS 128 bytes
              - RT Ein-/Ausgangsmodule
                - RT Eingangsmodule
                  - RT EIN 001 byte
                  - RT EIN 002 bytes
                  - RT EIN 004 bytes
                  - RT EIN 008 bytes
                  - RT EIN 016 bytes

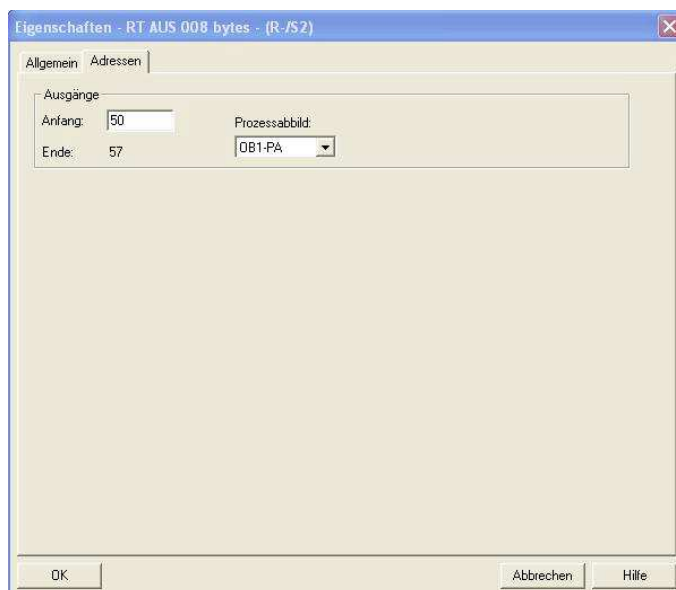
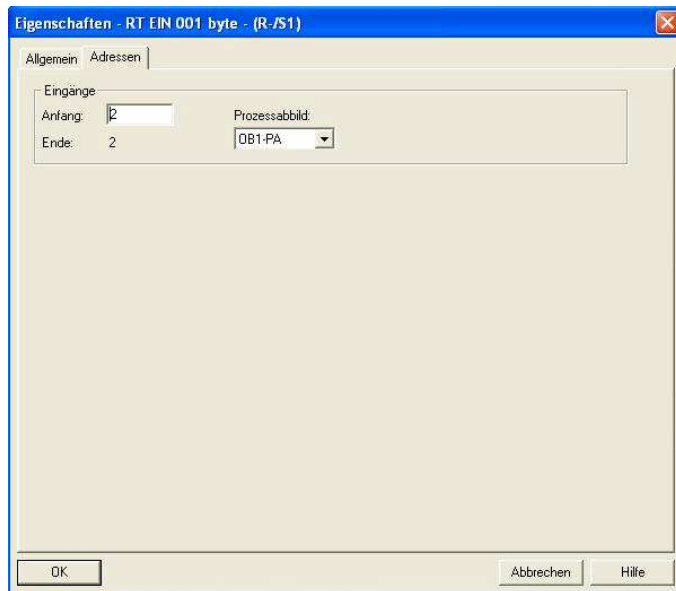
PROFIBUS-DP-Slaves der SIMATIC S7, M7 und C7 (dezentraler Aufbau)

### Attention!

**Please remember the definition of data bytes out (in this example is 8 Bytes)  
If you choose another configuration (for example 16 Bytes) you must set this value in FC3 at the hardware settings but in HEX.**

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7. change the E/A Address of the profinet slave configuration



### Attention!

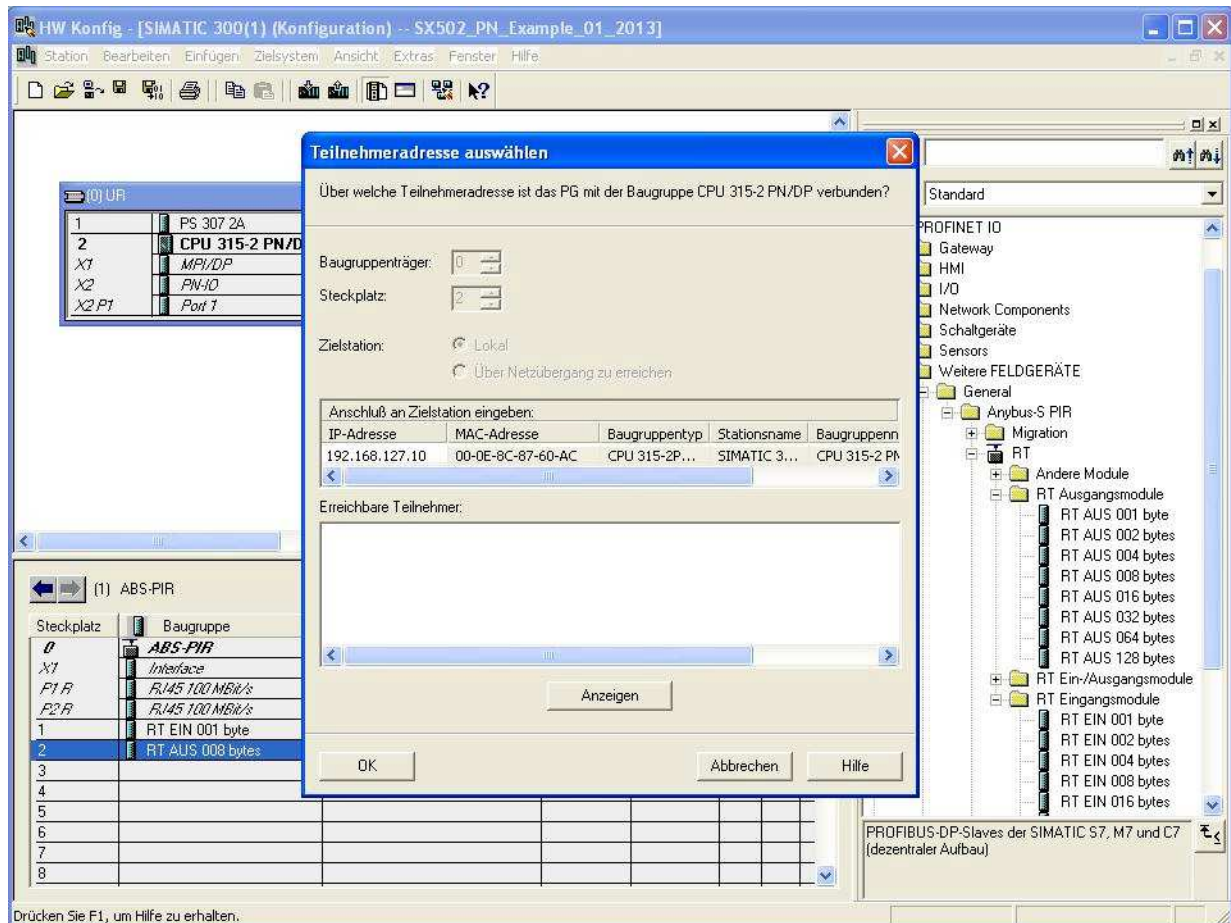
Please remember the definition of E/A addresses.

If you choose another definition (for example E-address 4 and A-address 10) you must set this value in FC3 at the hardware settings but in HEX.



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8. save and translate hardware configuration and send it to the plc.





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- open FC3 („SX502 Communication“) and scroll down until displayed „set H E R E datas of hardware configuration“

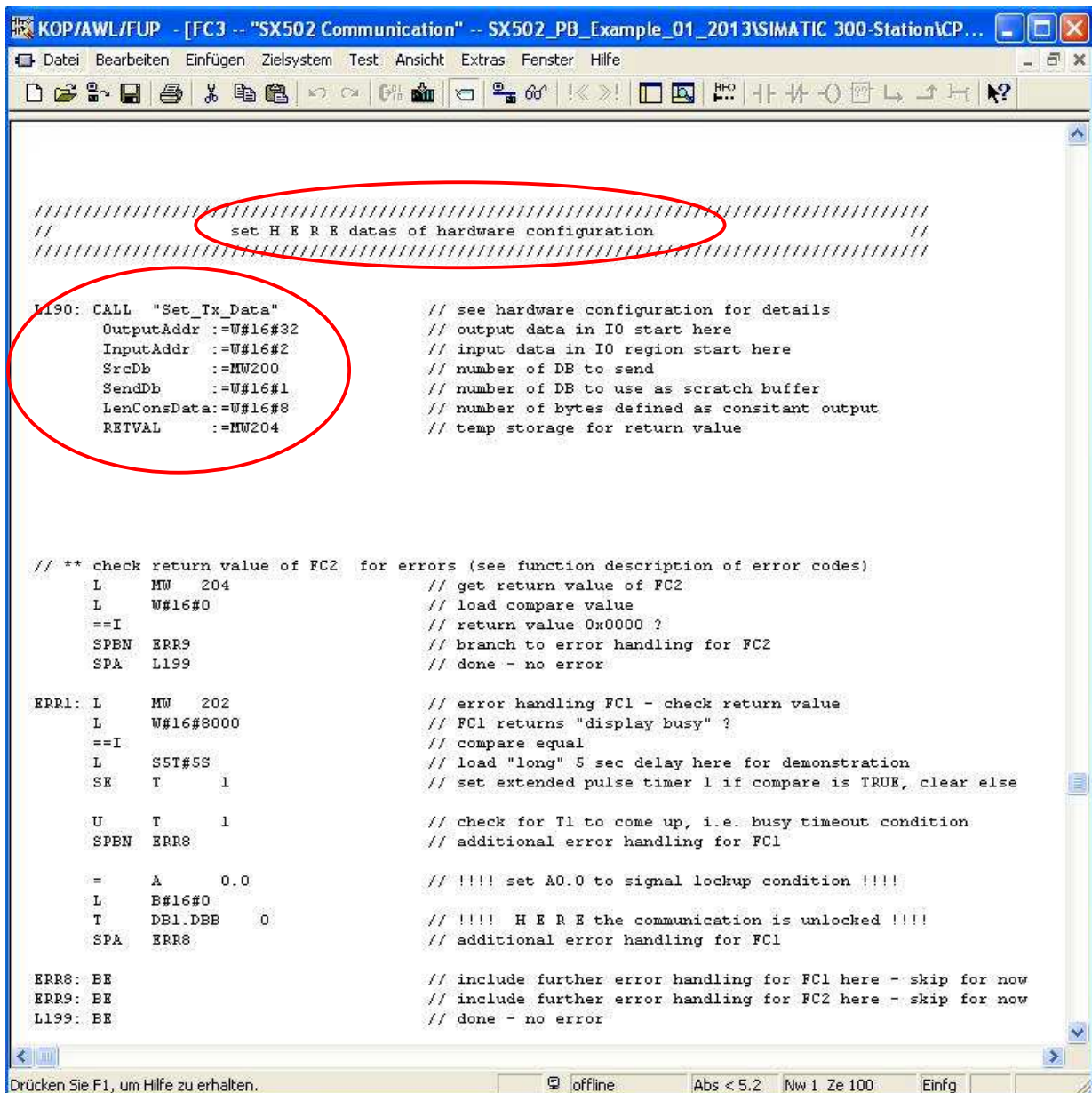
change there the values that is set in the hardware configuration

**Attention!** Values must be enter in HEX. In hardware configuration the values are in DEC.

OutputAddr = 32 HEX (in hardware configuration 50 DEC)

InputAddr = 2 HEX (in hardware configuration 2 DEC)

LenConsData = 8 HEX (in hardware configuration 8 DEC)



```

////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
//                               set H E R E datas of hardware configuration                               //
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////

L190: CALL "Set_Tx_Data"           // see hardware configuration for details
      OutputAddr :=W#16#32        // output data in IO start here
      InputAddr  :=W#16#2         // input data in IO region start here
      SrcDb      :=MW200          // number of DB to send
      SendDb     :=W#16#1        // number of DB to use as scratch buffer
      LenConsData:=W#16#8        // number of bytes defined as consitant output
      RETVAL     :=MW204         // temp storage for return value

// ** check return value of FC2 for errors (see function description of error codes)
L      MW 204                    // get return value of FC2
L      W#16#0                    // load compare value
==I                                         // return value 0x0000 ?
SPEN  ERR9                      // branch to error handling for FC2
SPA   L199                      // done - no error

ERR1: L      MW 202              // error handling FC1 - check return value
      L      W#16#8000           // FC1 returns "display busy" ?
==I                                         // compare equal
L      S5T#5S                   // load "long" 5 sec delay here for demonstration
SE   T      1                   // set extended pulse timer 1 if compare is TRUE, clear else

U      T      1                 // check for T1 to come up, i.e. busy timeout condition
SPEN  ERR8                      // additional error handling for FC1

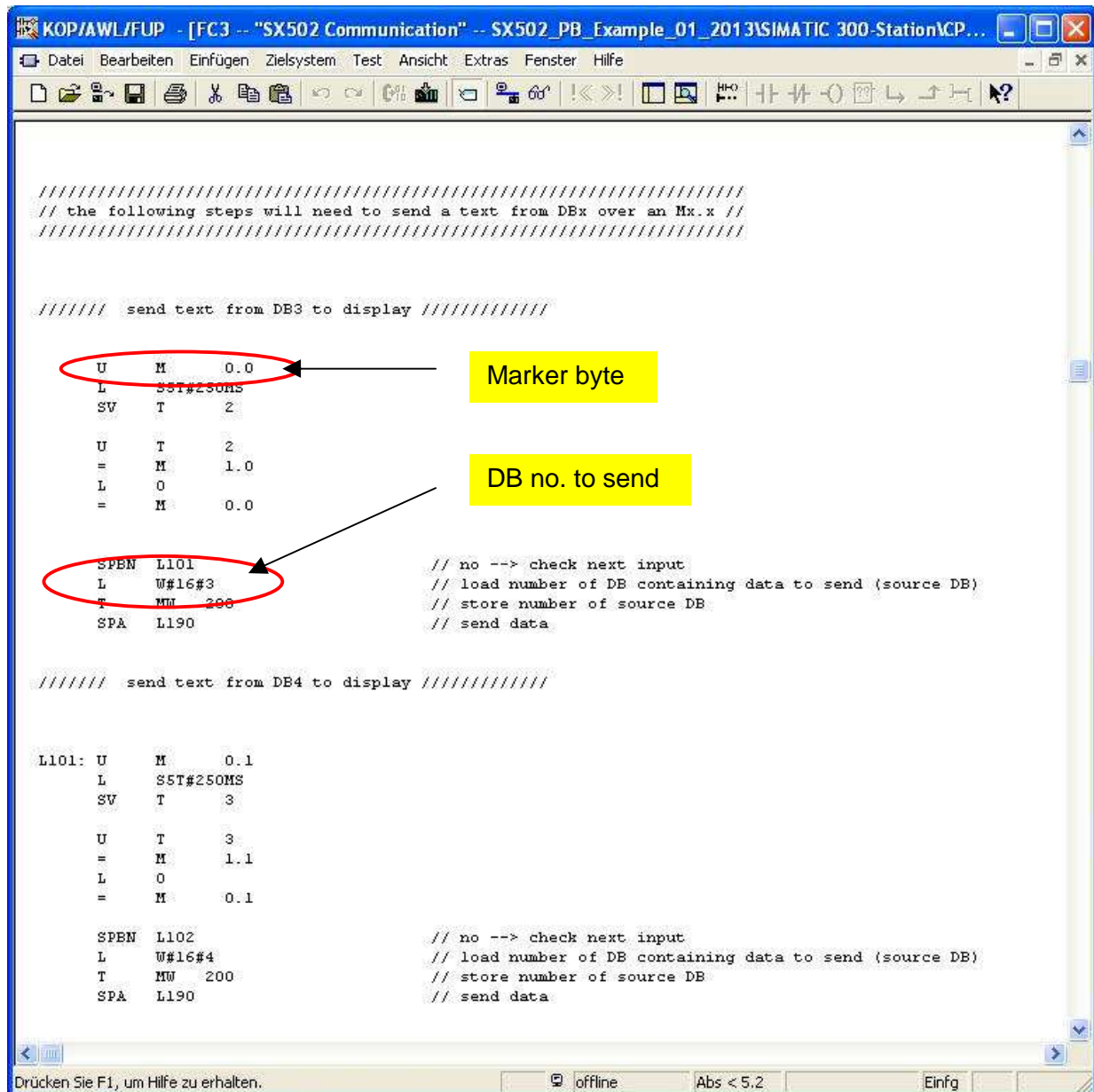
=      A      0.0               // !!!! set A0.0 to signal lockup condition !!!!
L      B#16#0
T      DB1.DBE 0
SPA   ERR8                      // !!!! H E R E the communication is unlocked !!!!
// additional error handling for FC1

ERR8: BE
ERR9: BE
L199: BE                          // include further error handling for FC1 here - skip for now
// include further error handling for FC2 here - skip for now
// done - no error

```

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10. also in FC3 you set the marker bytes for choose the DB that will send if you control this marker byte



```

////////////////////////////////////
// the following steps will need to send a text from DBx over an Mx.x //
////////////////////////////////////

////////// send text from DB3 to display ///////////

      U      M      0.0
      L      S5T#250MS
      SV     T      2

      U      T      2
      =      M      1.0
      L      O
      =      M      0.0

      SPEN   L101
      L      W#16#3
      T      MW     200
      SPA   L190

      // no --> check next input
      // load number of DB containing data to send (source DB)
      // store number of source DB
      // send data

////////// send text from DB4 to display ///////////

L101: U      M      0.1
      L      S5T#250MS
      SV     T      3

      U      T      3
      =      M      1.1
      L      O
      =      M      0.1

      SPEN   L102
      L      W#16#4
      T      MW     200
      SPA   L190

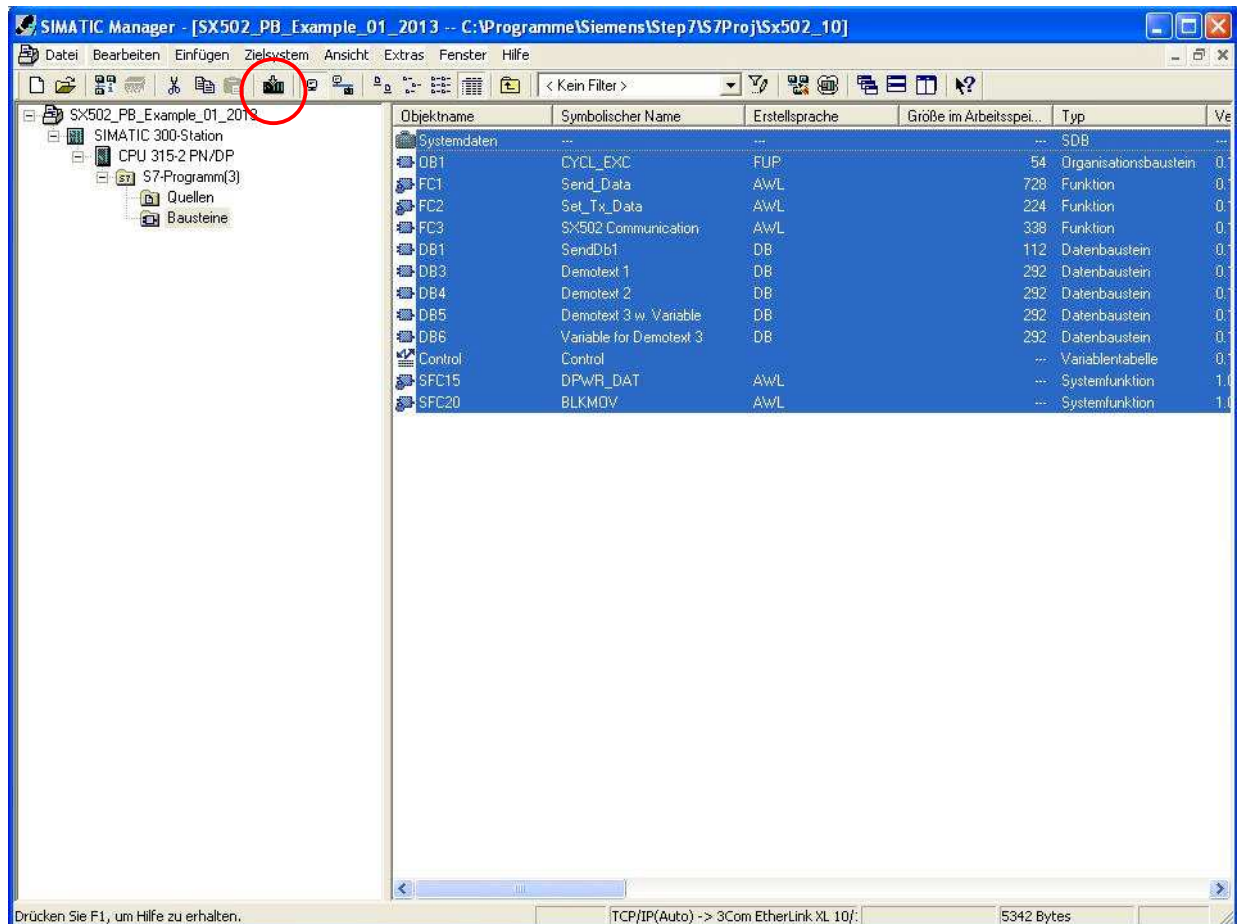
      // no --> check next input
      // load number of DB containing data to send (source DB)
      // store number of source DB
      // send data
  
```

Annotations in the image:

- A yellow box labeled "Marker byte" points to the value `0.0` in the first data block.
- A yellow box labeled "DB no. to send" points to the value `3` in the `SPEN` instruction.

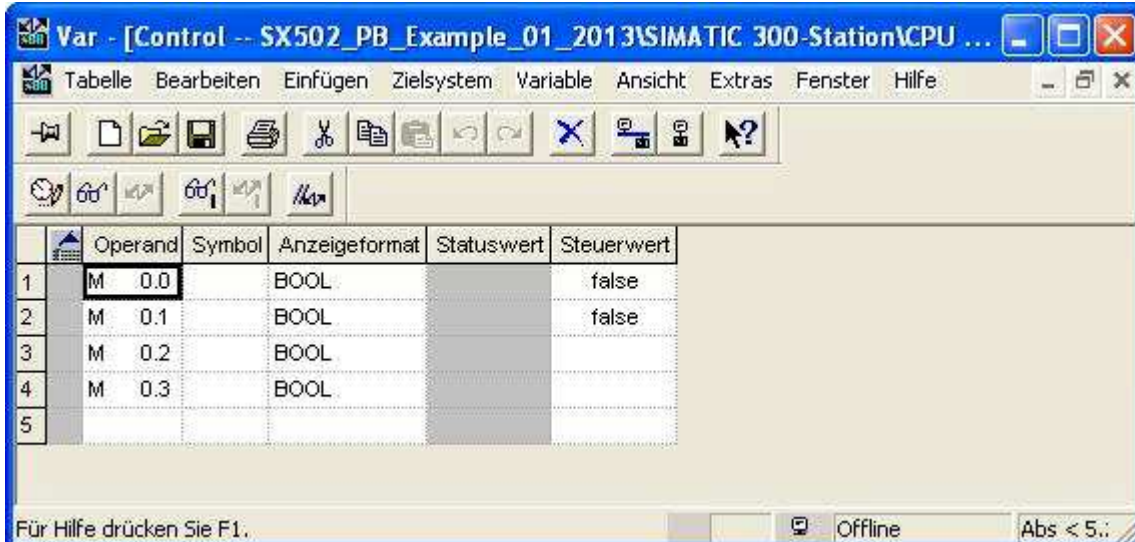
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11. save everything to the plc



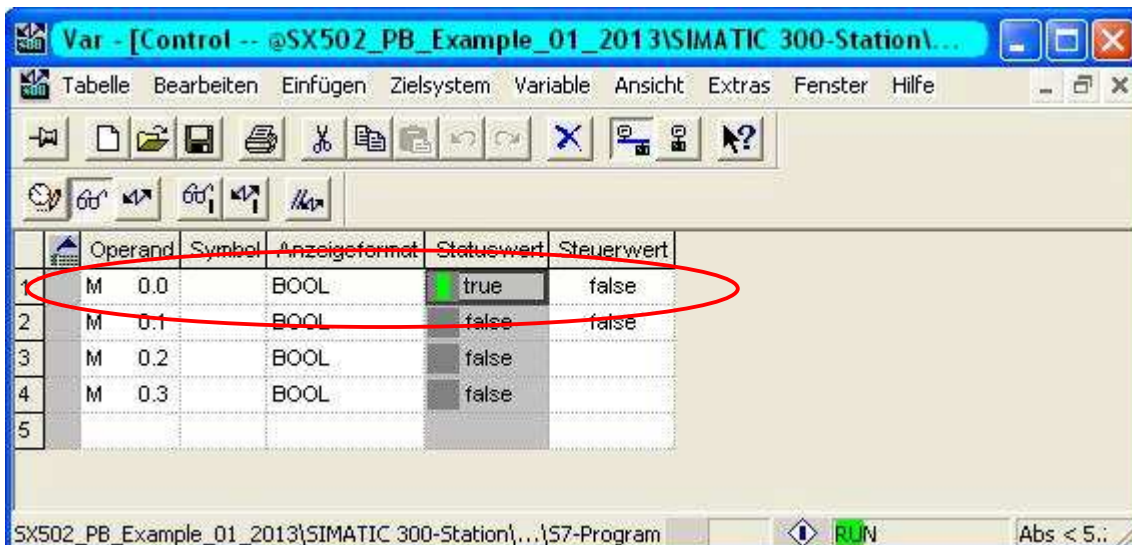
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12. open the variables sheet



|   | Operand | Symbol | Anzeigeformat | Statuswert | Steuerwert |
|---|---------|--------|---------------|------------|------------|
| 1 | M 0.0   |        | BOOL          |            | false      |
| 2 | M 0.1   |        | BOOL          |            | false      |
| 3 | M 0.2   |        | BOOL          |            |            |
| 4 | M 0.3   |        | BOOL          |            |            |
| 5 |         |        |               |            |            |

13. control the marker byte with keys „CTRL + 1“



|   | Operand | Symbol | Anzeigeformat | Statuswert | Steuerwert |
|---|---------|--------|---------------|------------|------------|
| 1 | M 0.0   |        | BOOL          | true       | false      |
| 2 | M 0.1   |        | BOOL          | false      | false      |
| 3 | M 0.2   |        | BOOL          | false      |            |
| 4 | M 0.3   |        | BOOL          | false      |            |
| 5 |         |        |               |            |            |

Now on the display of the SX502 will be text : „Welcome to Siebert Industrieelektronik GmbH“  
This is the text in DB3.

If you control M0.1 the text that display called: „Innovation in display“  
This is the text in DB4.

If you control M0.2 you set a text with variables : SOLL: \$V\$\$V\$\$V\$ IST: \$V\$\$V\$\$V\$  
This is the text in DB5.

And if you control M0.3 you only send variables on the text from DB5: 1 2 3                      4 5 6  
This is the text in DB6.

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14. If you want to send an individual text change only the text in DB3 and control the marker byte M0.0

In FC3 you can expand the function with the control of marker bytes if you have more text you would send. Then make a new DB with text and control it with a new marker byte.