

Your Global Automation Partner

TURCK

BEEP

Reference Manual

555T00129
0421B

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1 General Information

1.1 About these instructions

The following user manual describes the setup, functions, and use of the system. It helps you to plan, design, and implement the system for its intended purpose.

Note*: Please read this manual carefully before using the system. This will prevent the risk of personal injury or damage to property or equipment. Keep this manual safe during the service life of the system. If the system is passed on, be sure to transfer this manual to the new owner as well.

1.2 Explanation of symbols used

1.2.1 Warnings

Action-related warnings are placed next to potentially dangerous work steps and are marked by graphic symbols. Each warning is initiated by a warning sign and a signal word that expresses the gravity of the danger. The warnings have absolutely to be observed:



DANGER!

DANGER indicates an immediately dangerous situation, with high risk, the death or severe injury, if not avoided.



WARNING!

WARNING indicates a potentially dangerous situation with medium risk, the death or severe injury, if not avoided.



ATTENTION!

ATTENTION indicates a situation that may lead to property damage, if it is not avoid-ed.



NOTE

In NOTES you find tips, recommendations and important information. The notes facilitate work, provide more information on specific actions and help to avoid overtime by not following the correct procedure.

-
- **CALL TO ACTION**
This symbol identifies steps that the user has to perform.
 - ➔ **RESULTS OF ACTION**
This symbol identifies relevant results of steps

1.3 Contents

1.3.1 Hardware

- TBEN-S1-8DXP
- Compact Logix L16ER
- SIEMENS S7-1200
- Turck TX507 HMI

1.3.2 Software

- BEEP Webserver
- Studio 5000, Version 28
- TIA Portal, Version 14
- CoDeSys Version 3.5

1.4 Feedback about these instructions

We make every effort to ensure that these instructions are as informative and as clear as possible. If you have any suggestions for improving the design or if some information is missing in the document, please send your suggestions to techdoc@turck.com.

1.5 Technical support

For additional support, email inquiries to appsupport@turck.com, or call Application Support at 763-553-7300, Monday-Friday 8AM-5PM CST.

2 Introduction

- What is BEEP?
- What are BEEP's advantages and limitations?

2.1 What is BEEP?

BEEP (Backplane Ethernet Extension Protocol) is a new technology that has been added to many Turck Multiprotocol digital block I/O modules. BEEP allows a network, of up to 33 devices (1 Master + 32 Slaves) or 480 bytes of data, to appear to the PLC as a single device on a single connection using a single IP Address.

2.2 BEEP Advantages

- Consolidation of IP Addressing — BEEP allows a network, of up to 33 devices (1 Master + 32 Slaves) or 480 bytes of data, to appear to the PLC as a single device on a single connection using a single IP Address.
- Less downtime — BEEP supports drop-in replacement of slave devices.
- Cost savings — BEEP allows the user an opportunity to invest in a lower cost PLC that supports less connections.
- Unique selling point — BEEP works with standard Ethernet components and requires no special equipment.
- Unique technology — BEEP technology is built into each device at no additional cost. It is up to the user if they want to enable BEEP or not.

2.3 BEEP Limitations

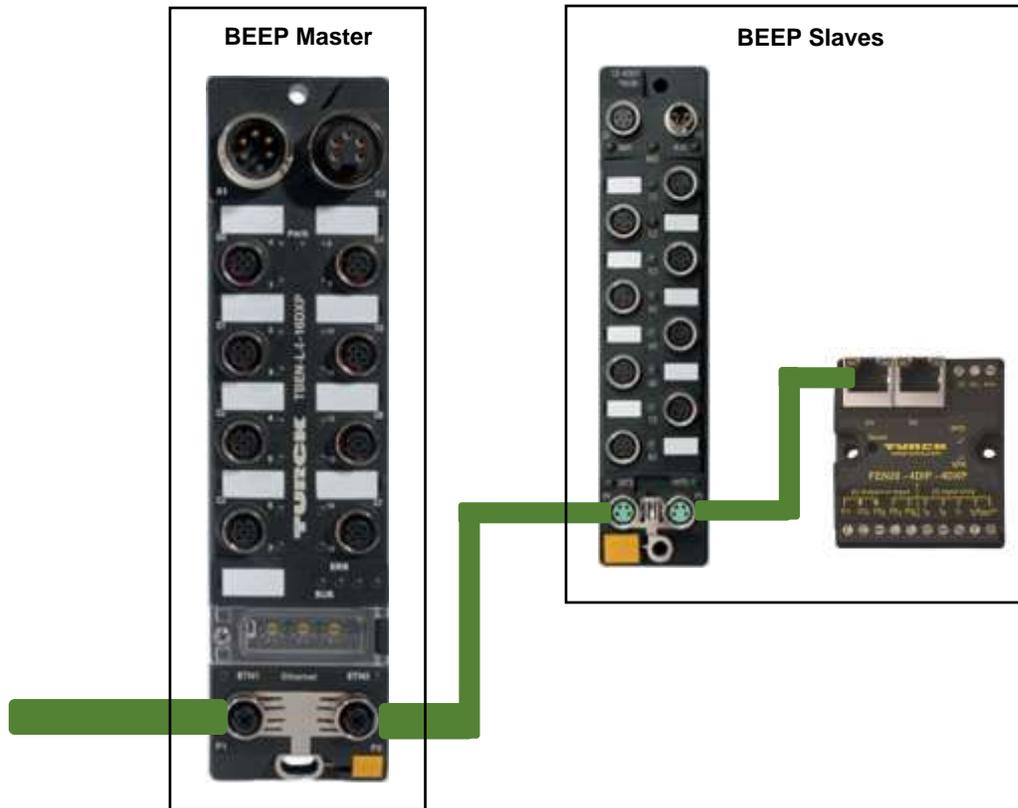
- Network topology — BEEP must be setup in a line topology. BEEP does not support DLR or ring configuration.
- Localized addressing— BEEP Master device communicates exclusively with Slaves. The PLC will not see the slave devices at all.

3 Getting Started

A BEEP network consists of one master and at least one slave device. A BEEP Master must be assigned a static IP Address, while a BEEP Slave device must have no IP Address assigned.

3.1 BEEP Line Topology Configuration

The following line topology must be observed:

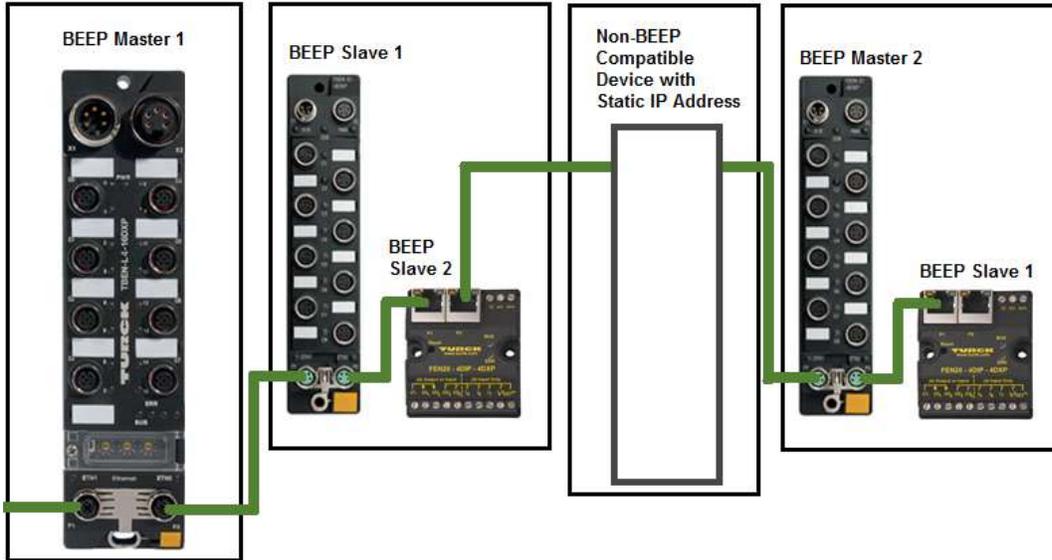


NOTES

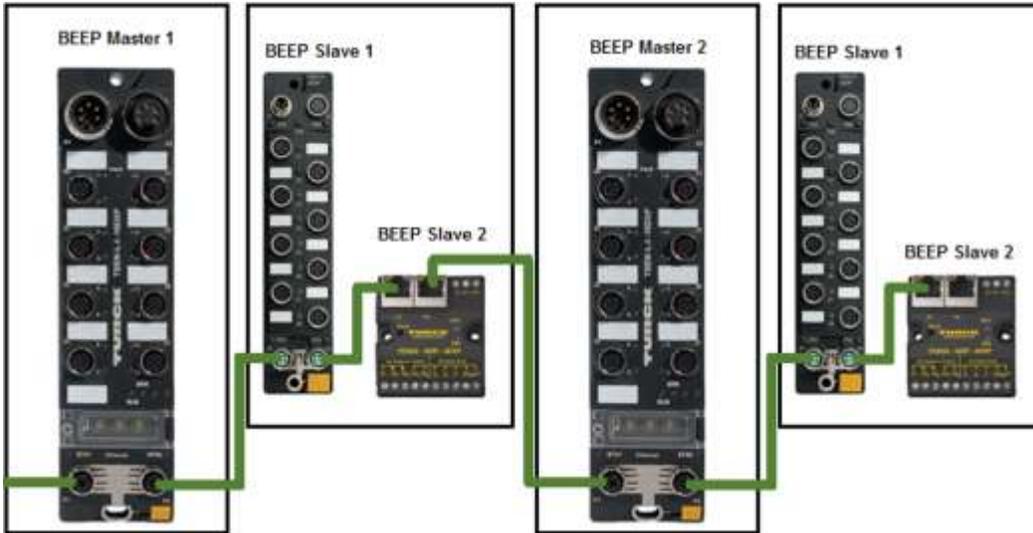
- For available list of BEEP Master devices see [Section 3.4](#)
- For available list of BEEP Slave devices see [Section 3.5](#)
- Port 2 on the BEEP Master must go to Port 1 on the first BEEP Slave.
- BEEP does not work in a ring or DLR configuration.

3.2 Alternative Line Topology Configurations

A line topology using a BEEP Master and a non-BEEP compatible device.



A line topology using multiple BEEP Masters.

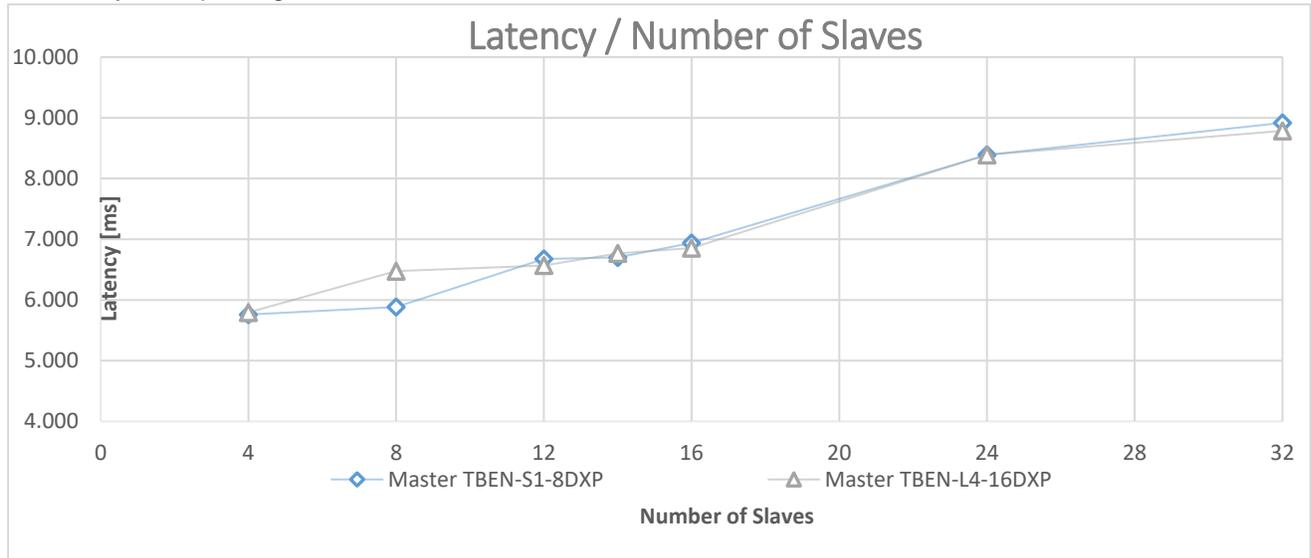


NOTES

- The BEEP Master ignores non-BEEP compatible devices (such as I/O blocks and drives).
- The BEEP Master looks for Turck devices that have no IP Address assigned.
- The recommend way to install multiple BEEP masters in a networks is by:
 - 1) Installing all the physical devices.
 - 2) Assign all the BEEP Masters an IP Address.
 - 3) Enable BEEP Master functionality.
 - 4) Scan for the BEEP Slaves at each Master.

3.3 Latency

Latency corresponding to number of slave devices in the network.



3.4 BEEP Masters

The following devices are BEEP Master capable:

- 6814009 TBEN-L4-16DIP
- 6814011 TBEN-L4-16DOP
- 6814012 TBEN-L4-16DXP
- 6814010 TBEN-L4-8DIP-8DOP
- 6814061 TBEN-L4-16DIN
- 6814063 TBEN-L4-16DON
- 6814064 TBEN-L4-16DXN
- 6814085 TBEN-L5-16DIP
- 6814087 TBEN-L5-16DOP
- 6814088 TBEN-L5-16DXP
- 6814086 TBEN-L5-8DIP-8DOP
- 6814020 TBEN-S1-8DIP
- 6814034 TBEN-S1-8DIP-D
- 6814022 TBEN-S1-8DOP
- 6814023 TBEN-S1-8DXP
- 6814021 TBEN-S1-4DIP-4DOP
- 6814073 TBEN-S2-8DIP
- 6814076 TBEN-S2-8DXP
- 6931090 FEN20-4DIP-4DXP
- 6814129 FEN20-4DIN-4DXN
- 6811493 BLCEN-8PBLT

3.5 BEEP Slaves

The following devices are BEEP Slave capable:

- 6814009 TBEN-L4-16DIP
- 6814011 TBEN-L4-16DOP
- 6814012 TBEN-L4-16DXP
- 6814010 TBEN-L4-8DIP-8DOP
- 6814061 TBEN-L4-16DIN
- 6814063 TBEN-L4-16DON
- 6814064 TBEN-L4-16DXN
- 6814085 TBEN-L5-16DIP
- 6814087 TBEN-L5-16DOP
- 6814088 TBEN-L5-16DXP
- 6814086 TBEN-L5-8DIP-8DOP
- 6814020 TBEN-S1-8DIP
- 6814034 TBEN-S1-8DIP-D
- 6814022 TBEN-S1-8DOP
- 6814023 TBEN-S1-8DXP
- 6814021 TBEN-S1-4DIP-4DOP
- 6814073 TBEN-S2-8DIP
- 6814076 TBEN-S2-8DXP
- 6931090 FEN20-4DIP-4DXP
- 6814129 FEN20-4DIN-4DXN
- 6931089 FEN20-16DXP
- 6811493 BLCEN-8PBLT



NOTE

- A BEEP Master must have a static IP Address assigned.
- A BEEP Slave must have no IP Address assigned.
- Turck devices come out of the box with no IP Address assigned. Factory reset can be performed from the device webserver or via the Turck Service Tool.

➔ A BEEP network viewed with Turck Service Tool.

No	MAC address	Name	IP address	Network	Gateway	Role	Device	Version	Adapter	ARGE	Program version	Kernel version	BEEP	Turck_DCP
1	00:07:46:26:46:00	turck-beep-master	192.168.1.1	255.255.255.0	0.0.0.0	PGM_DHCP	FEN20-4DIP-4DXP	3.3.7.0	136.129.1.33, 192.168.1.116	supported	3.6.0.0	M.192.168.1.11		DCP_Turck
2	00:07:46:26:46:01		192.168.1.204	255.255.255.0	0.0.0.0	PGM_DHCP	FEN20-4DIP-4DXP	3.3.6.0	136.129.1.33, 192.168.1.116	supported	3.6.0.0	M.192.168.1.11.0.00		Turck
3	00:07:46:26:46:02		192.168.1.205	255.255.255.0	0.0.0.0	PGM_DHCP	FEN20-4DIP-4DXP	3.3.6.0	136.129.1.33, 192.168.1.116	supported	3.6.0.0	M.192.168.1.11.0.01		Turck
4	00:07:46:26:46:03		192.168.1.206	255.255.255.0	0.0.0.0	PGM_DHCP	FEN20-4DIP-4DXP	3.3.6.0	136.129.1.33, 192.168.1.116	supported	3.6.0.0	M.192.168.1.11.0.02		Turck
5	00:07:46:26:46:04		192.168.1.207	255.255.255.0	0.0.0.0	PGM_DHCP	FEN20-4DIP-4DXP	3.3.6.0	136.129.1.33, 192.168.1.116	supported	3.6.0.0	M.192.168.1.11.0.03		Turck
6	00:07:46:26:46:05		192.168.1.208	255.255.255.0	0.0.0.0	PGM_DHCP	FEN20-4DIP-4DXP	3.3.6.0	136.129.1.33, 192.168.1.116	supported	3.6.0.0	M.192.168.1.11.0.04		Turck
7	00:07:46:26:46:06		192.168.1.209	255.255.255.0	0.0.0.0	PGM_DHCP	FEN20-4DIP-4DXP	3.3.6.0	136.129.1.33, 192.168.1.116	supported	3.6.0.0	M.192.168.1.11.0.05		Turck
8	00:07:46:26:46:07		192.168.1.210	255.255.255.0	0.0.0.0	PGM_DHCP	FEN20-4DIP-4DXP	3.3.7.0	136.129.1.33, 192.168.1.116	supported	3.6.0.0	M.192.168.1.11.0.06		Turck

3.6 Firmware

The following firmware is the minimum required firmware to support the BEEP technology:

ID Numbers	Descriptions	Minimum required firmware to support BEEP		
		3.3.4.0	3.4.2.0	3.2.2.0
6814009	TBEN-L4-16DIP		X	
6814011	TBEN-L4-16DOP		X	
6814012	TBEN-L4-16DXP		X	
6814010	TBEN-L4-8DIP-8DOP		X	
6814061	TBEN-L4-16DIN		X	
6814063	TBEN-L4-16DON		X	
6814064	TBEN-L4-16DXN		X	
6814085	TBEN-L5-16DIP		X	
6814087	TBEN-L5-16DOP		X	
6814088	TBEN-L5-16DXP		X	
6814086	TBEN-L5-8DIP-8DOP		X	
6814020	TBEN-S1-8DIP	X		
6814034	TBEN-S1-8DIP-D	X		
6814022	TBEN-S1-8DOP	X		
6814023	TBEN-S1-8DXP	X		
6814021	TBEN-S1-4DIP-4DOP	X		
6814073	TBEN-S2-8DIP			X
6814076	TBEN-S2-8DXP			X
6931090	FEN20-4DIP-4DXP	X		
6814129	FEN20-4DIN-4DXN	X		
6811493	BLCEN-8PBLT	X		
6931089	FEN20-16DXP	Slave Only 3.9.3.0		

4 Explaining the Webserver – BEEP Master

4.1 Logging into the BEEP Master

- Log into the webserver to access BEEP functionality



NOTE

- You must log into the webserver to access the BEEP Network Configuration.
- The default password for the webserver is “password”.

4.2 Navigation Menu

4.2.1 BEEP Network Configuration

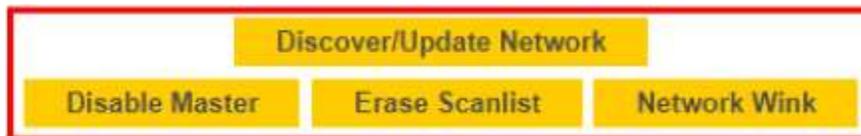
- Select **BEEP Network Configuration**.



- Select **Enable Master**.



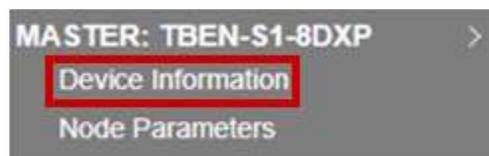
4.2.1.1 BEEP Network Configuration Functions



- **Discover/Update Network:** Discovers a new network or updates current network.
- **Disable Master:** Disables the Master functionality.
- **Erase Scanlist:** Clears the BEEP Master Scanlist.
- **Network Wink:** Master and all Slave BUS LEDs will flash.

4.2.2 Device Information

- Select **Device Information**.





NOTE

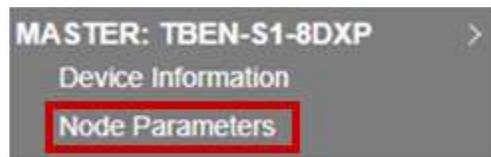
The device used in this example was a TBEN-S1-8DXP. The user may see different product numbers depending on what product they are using.

➔ You should see the following:

Master Device Information	
Master description	TBEN-S1-8DXP
MAC address	00:07:46:02:96:9C
Order number	6814023
Version number	V3.3.4.0
IO mode	Simple

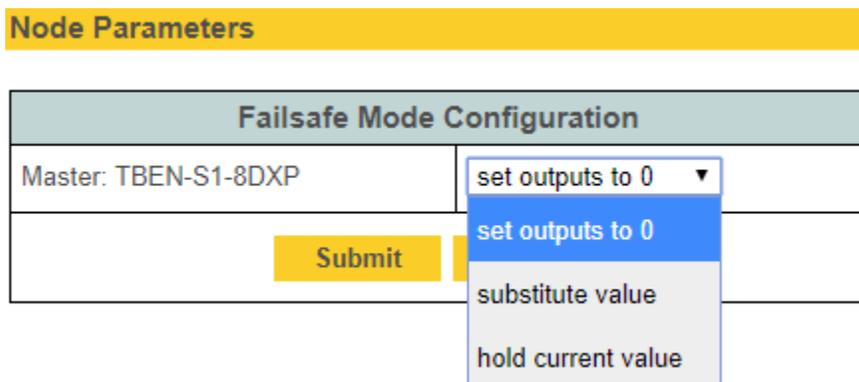
4.2.3 Node Parameters

➤ In the grey table of contents, select **Node Parameters**



4.2.3.1 Failsafe Mode Configuration

Failsafe Mode Configuration determines how the I/O will respond when fieldbus connection is lost.



- **Set outputs to 0:** Outputs are set to zero.
- **Substitute value:** Use a substitute value, for analog stations.
- **Hold current value:** Holds the current value of the output.

- Select the desired I/O condition for each device, then click **Submit**

Node Parameters

Failsafe Mode Configuration

Master: TBEN-S1-8DXP	<input style="width: 90%;" type="text" value="hold current value"/> ▼
<div style="display: flex; justify-content: center; gap: 20px;"> Submit Reset </div>	



NOTE

- Selecting **Reset** will reset the dropdown menus to their default values.
- BEEP Masters and Slaves can each have their own individual Failsafe Mode Configuration.

4.3 LED Status

Master LED table:

LED	Color	State	Description
BUS	Green	On	Station OK
	Red	On	No IP address assigned
	Red	Flashing	Wink active
Error	Green	On	Station OK
	Red	On	Diagnostics active
	Green/Red	Alternating	Discovery mode active
Power	Green	On	Station OK
	Green	Off	V1 power is off or below tolerance of 18 volts
	Red	On	V2 undervoltage error

Slave LED table:

LED	Color	State	Description
BUS	Green	On	Station OK
	Red/Green	Alternating	Waiting for Master discovery
	Red	Flashing	Wink active
Error	Green	On	Station OK
	Red	On	Diagnostics active
Power	Green	On	Station OK
	Green	Off	V1 power is off or below tolerance of 18 volts
	Red	On	V2 undervoltage error

4.4 Diagnostics

BEEP diagnostics can be viewed from the BEEP Master's webserver.

STATION >

Station Information

Station Diagnostics

Station Diagnostics

There is no diagnostics available. The System is working properly.

5 Configuring the BEEP Master – Ethernet/IP

5.1 Logging into the BEEP Master

- Log into the webserver to access BEEP functionality.



NOTE

The default password for the webserver is "password".

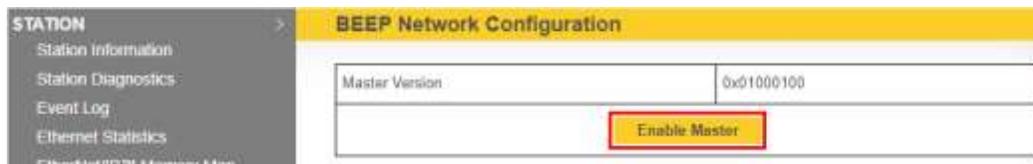
5.2 BEEP Network Configuration

- Select **BEEP Network Configuration**.



5.3 Enable Master

- Select **Enable Master**.



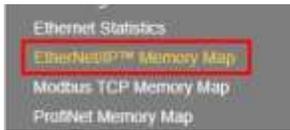
5.4 Discover/Update Network

- Select **Discover/Update Network** to scan for slaves.



5.5 Ethernet/IP Memory Map

- Select **Ethernet/IP Memory Map** to see the Assemble Instance and Size of the BEEP network.



Connection	Assembly Instance	Size (in words)
Input	101	11
Output	112	2



NOTE

- The webserver is updated with a new I/O data map which includes all slave devices.
- The new input connection point: Input Assembly: 101 (0x65), Size: 11 (words)
- The new output connection point: Output Assembly: 112 (0x70), Size: 2 (words)
- More memory can be allocated in the PLC for the Input and Output data sizes. Doing this allows for additional slave devices to be added later without having to take the PLC offline to reallocate space.

5.6 Connecting to Allen Bradley PLC via RSLogix

- Create a Generic Ethernet Module in RSLogix.

A screenshot of the "New Module" dialog box in RSLogix. The dialog has a title bar with "New Module" and a close button. It contains several fields and sections:

- Type:** ETHERNET-MODULE Generic Ethernet Module
- Vendor:** Allen-Bradley
- Parent:** Local
- Name:** TBEN_BEEP
- Description:** BEEP Master
- Comm Format:** Data - INT
- Address / Host Name:** IP Address: 192 . 168 . 1 . 124
- Connection Parameters:** A sub-dialog with fields for Input (101, Size: 11 (16-bit)), Output (112, Size: 2 (16-bit)), Configuration (1, Size: 0 (8-bit)), Status Input, and Status Output.
- Open Module Properties:** A checked checkbox.
- Buttons:** OK, Cancel, and Help.



NOTE

Due to all the BEEP network configuration being done in the webserver of the BEEP Master, the Configuration Assemble Instance can be set to 1 and the Size can be set to 0.

- Use **Ethernet/IP Memory Map** from webserver to identify tags in RSLogix.

The screenshot shows the 'Console Tags - BEEP_project/console' window in RSLogix. The main table displays the memory map for the BEEP Master (TSEN-51-SDXP) Slot 1: Basic (Input Data Mapping). The table has columns for Description, Word Offset, Bit Offset, Bit Length, Name, Value, Force Mon, Style, Data Type, and Description. A red arrow points from the 'Bit Length' column to the 'Data Type' column.

Description	Word Offset	Bit Offset	Bit Length	Name	Value	Force Mon	Style	Data Type	Description
Channel 0 - Input value	0	0	1	EN_BEEP1.Data[0]	0		Decimal	INT[16]	
Channel 1 - Input value	0	1	1	EN_BEEP1.Data[1]	0		Decimal	INT	
Channel 2 - Input value	0	2	1	EN_BEEP1.Data[2]	0		Decimal	INT	
Channel 3 - Input value	0	3	1	EN_BEEP1.Data[3]	0		Decimal	INT	
Channel 4 - Input value	0	4	1	EN_BEEP1.Data[4]	0		Decimal	INT	
Channel 5 - Input value	0	5	1	EN_BEEP1.Data[5]	0		Decimal	INT	
Channel 6 - Input value	0	6	1	EN_BEEP1.Data[6]	0		Decimal	INT	
Channel 7 - Input value	0	7	1	EN_BEEP1.Data[7]	0		Decimal	INT	
Overcurrent VU02 CH-0	10	0	1	BEN_BEEP1.Data[8]	0		Decimal	BOOL	Master Input 0
Overcurrent VU02 CH-1	10	1	1	BEN_BEEP1.Data[9]	0		Decimal	BOOL	Master Input 1
Overcurrent VU02 CH-2	10	2	1	BEN_BEEP1.Data[10]	0		Decimal	BOOL	Master Input 2
Overcurrent VU02 CH-3	10	3	1	BEN_BEEP1.Data[11]	0		Decimal	BOOL	Master Input 3
Overcurrent VU02 CH-4	10	4	1	BEN_BEEP1.Data[12]	0		Decimal	BOOL	Master Input 4
Overcurrent VU02 CH-5	10	5	1	BEN_BEEP1.Data[13]	0		Decimal	BOOL	Master Input 5
Overcurrent VU02 CH-6	10	6	1	BEN_BEEP1.Data[14]	0		Decimal	BOOL	Master Input 6
Overcurrent VU02 CH-7	10	7	1	BEN_BEEP1.Data[15]	0		Decimal	BOOL	Master Input 7
Channel 0 - Overcurrent	10	8	1	BEN_BEEP1.Data[16]	0		Decimal	BOOL	
Channel 1 - Overcurrent	10	9	1	BEN_BEEP1.Data[17]	0		Decimal	BOOL	
Channel 2 - Overcurrent	10	10	1	BEN_BEEP1.Data[18]	0		Decimal	BOOL	
Channel 3 - Overcurrent	10	11	1	BEN_BEEP1.Data[19]	0		Decimal	BOOL	
Channel 4 - Overcurrent	10	12	1	BEN_BEEP1.Data[20]	0		Decimal	BOOL	
Channel 5 - Overcurrent	10	13	1	BEN_BEEP1.Data[21]	0		Decimal	BOOL	
Channel 6 - Overcurrent	10	14	1	BEN_BEEP1.Data[22]	0		Decimal	BOOL	
Channel 7 - Overcurrent	10	15	1	BEN_BEEP1.Data[23]	0		Decimal	INT	
				EN_BEEP1.Data[24]	0		Decimal	INT	

6 Configuring the BEEP Master – Modbus TCP/IP

6.1 Logging into the BEEP Master

- Log into the webserver to access BEEP functionality.



NOTE

The default password for the webserver is “password”.

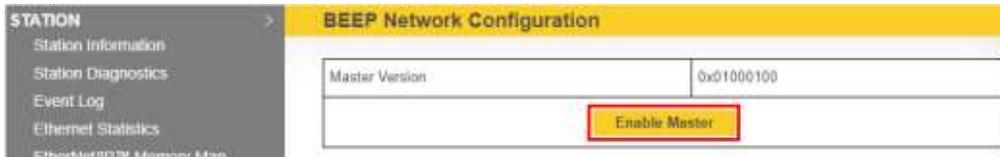
6.2 BEEP Network Configuration

- Select **BEEP Network Configuration**.



6.3 Enable Master

- Select **Enable Master**.



6.4 Discover/Update Network

- Select **Discover/Update Network** to scan for slaves.



6.5 Modbus TCP Memory Map

- Select **Modbus TCP Memory Map** to see the size of the BEEP network.

Connection	Size (in words)
Input	11
Output	2



NOTE

- The webservice is updated with a new I/O data map which includes all slave devices.
- Modbus input registers start at 0x4800 (18432)
- Modbus output registers start at 0x4C04 (19456)
- More memory can be allocated in the PLC for the Input and Output data sizes. Doing this allows for additional slave devices to be added later without having to take the PLC offline to reallocate space.

6.6 Connecting to Turck HMI/PLC via CODESYS 3

- Enter IP Address of BEEP Master

The screenshot shows the 'Modbus-TCP' configuration window in CODESYS 3. The window has a title bar with tabs for 'Modbus_TCP_Slave', 'Ethernet', 'Visualization', and 'Modbus_TCP_Master'. On the left, there is a sidebar with a tree view containing 'General', 'Modbus Slave Channel', 'Modbus Slave Init', 'ModbusTCPslave Parameters', and 'ModbusTCPslave I/O Mapping'. The main area is titled 'Modbus-TCP' and contains the following fields:

- Slave IP Address: 192 . 168 . 1 . 251
- Unit-ID [1..247]: 1
- Response Timeout (ms): 1000
- Port: 502

The 'MODBUS' logo is visible in the top right corner of the configuration area.

- Enter Read and Write registers and length.

- Use the **Modbus TCP Memory Map** from webserver to label inputs and outputs in project.

Description	Register	Bit Offset	Bit Length	Channel	Address	Type	Default Value	Unit	Description
Channel 0 - Input value	0x400 (10441)	0	1	Channel 0[0]	%I053	WORD			18432
Channel 1 - Input value	0x400 (10441)	1	1	Channel 0[4]	%I054	WORD			18436
Channel 2 - Input value	0x400 (10441)	2	1	Channel 0[8]	%I055	WORD			18437
Channel 3 - Input value	0x400 (10441)	3	1	Channel 0[8]	%I056	WORD			18438
Channel 4 - Input value	0x400 (10441)	4	1	Channel 0[8]	%I057	WORD			18439
Channel 5 - Input value	0x400 (10441)	5	1	Channel 0[8]	%I058	WORD			18440
Channel 6 - Input value	0x400 (10441)	6	1	Channel 0[8]	%I059	WORD			18441
Channel 7 - Input value	0x400 (10441)	7	1	Bit 7	%I118.7	BOOL	FALSE		Master Input 7
Overcurrent VAI/02 Ch0.0	0x405A (10442)	0	1	Bit 8	%I118.0	BOOL	FALSE		Master Input 0
Overcurrent VAI/02 Ch0.1	0x405A (10442)	1	1	Bit 9	%I118.1	BOOL	FALSE		Master Input 1
Overcurrent VAI/02 Ch0.2	0x405A (10442)	2	1	Bit 10	%I118.2	BOOL	FALSE		Master Input 2
Overcurrent VAI/02 Ch0.3	0x405A (10442)	3	1	Bit 11	%I118.3	BOOL	FALSE		Master Input 3
Overcurrent VAI/02 Ch0.4	0x405A (10442)	4	1	Bit 12	%I118.4	BOOL	FALSE		Master Input 4
Overcurrent VAI/02 Ch0.5	0x405A (10442)	5	1	Bit 13	%I118.5	BOOL	FALSE		Master Input 5
Overcurrent VAI/02 Ch0.6	0x405A (10442)	6	1	Bit 14	%I118.6	BOOL	FALSE		Master Input 6
Overcurrent VAI/02 Ch0.7	0x405A (10442)	7	1	Bit 15	%I118.7	BOOL	FALSE		Master Input 7
Channel 8 - Overcurrent	0x405A (10442)	8	1	Channel 0[30]	%I060	WORD			18442
Channel 9 - Overcurrent	0x405A (10442)	9	1	Channel 0[31]	%I061	WORD			18443
Channel 10 - Overcurrent	0x405A (10442)	10	1	Channel 0[31]	%I062	WORD			18444
Channel 11 - Overcurrent	0x405A (10442)	11	1						
Channel 12 - Overcurrent	0x405A (10442)	12	1						
Channel 13 - Overcurrent	0x405A (10442)	13	1						
Channel 14 - Overcurrent	0x405A (10442)	14	1						
Channel 15 - Overcurrent	0x405A (10442)	15	1						

7 Configuring the BEEP Master – ProfiNet

7.1 Logging into the BEEP Master

- Log into the webserver to access BEEP functionality.

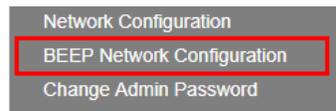


NOTE

The default password for the webserver is “password”.

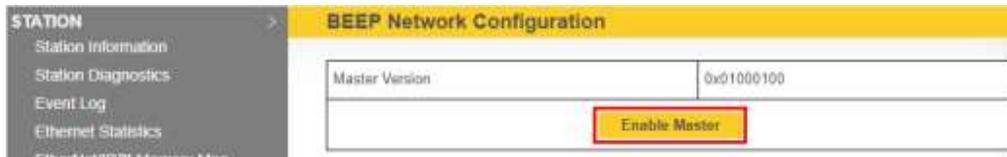
7.2 BEEP Network Configuration

- Select **BEEP Network Configuration**.



7.3 Enable Master

- Select **Enable Master**.



7.4 Discover/Update Network

- Select **Discover/Update Network** to scan for slaves.



7.5 ProfiNet Memory Map

- Select **ProfiNet Memory Map** to see the size of the BEEP network.

Connection	BEEP Master Status/Control Data (in bytes)	Process Data (in bytes)
Input	16	24
Output	2	6

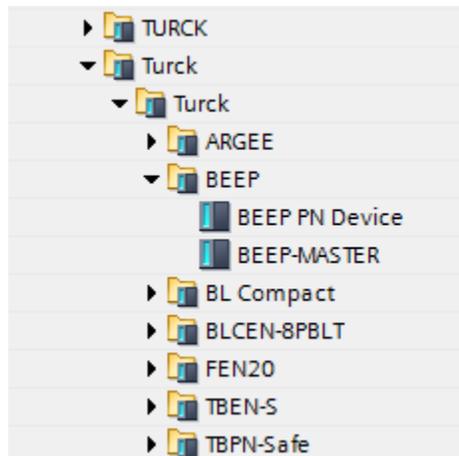


NOTE

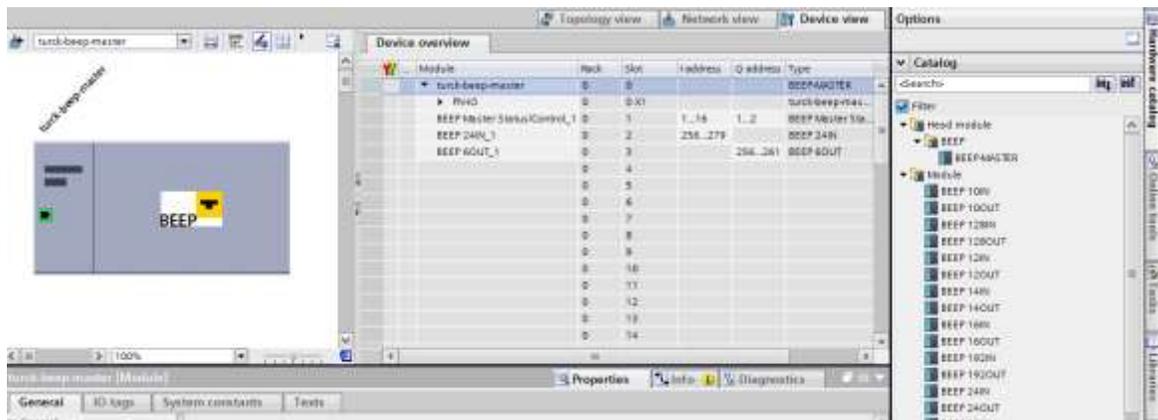
- The webserver is updated with a new I/O data map which includes all slave devices.
- ProfiNet integration will have one generic GSDML file, which will be the same for all BEEP Master nodes.
- The BEEP GSDML will provide generic data length modules that can be dragged and dropped in multiple slots.
- More memory can be allocated in the PLC for the Input and Output data sizes. Doing this allows for additional slave devices to be added later without having to take the PLC offline to reallocate space.

7.6 Connecting to SIEMANS PLC via TIA Portal Version 13

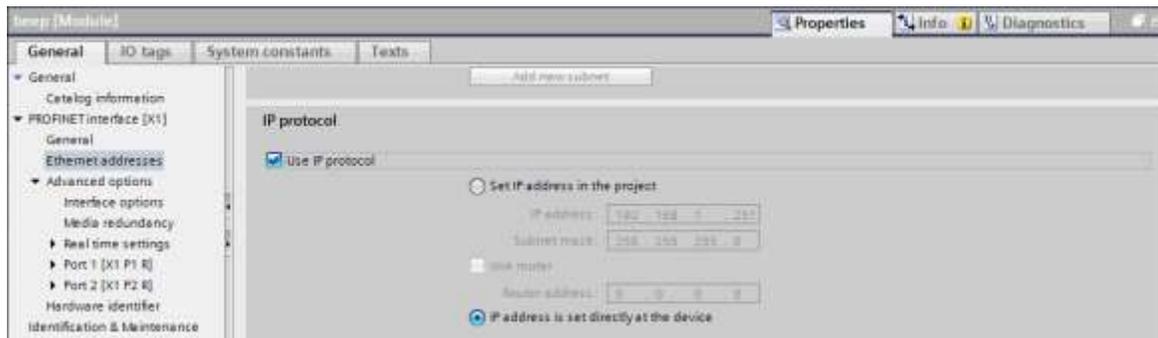
- In TIA Portal, install BEEP GSDML.
- Add new device and select BEEP-MASTER.



- Select input and output size from device catalog to match process data size.



- In the device properties, select **IP Address is set at the device**.



NOTE

DO NOT set or select Set IP Address in the project. The IP Address of the BEEP Master must be set in the webserver only!

8 Replacing or Adding Additional Devices

8.1 Slave Device Replacement

BEEP supports drop-in replacement of slave devices. If a slave device goes bad, the user will see the following diagnostics message in the webserver:

STATION		Station Diagnostics		
Station Information	>			
! Station Diagnostics				
Event Log				
Ethernet Statistics				
EtherNet/IP™ Memory Map				
Modbus TCP Memory Map				
Device	Slot	Source	Diagnostics	
Master: TBEN-S1-8DXP	0	Gateway	BEEP Status Word: Slave communication lost Diagnostic summary Slave 1 communication lost	

Simply remove the bad device and replace it with an identical device. The BEEP master will sense the new device and update the network. Station Diagnostics will automatically clear after the device is replaced.



NOTE

- A BEEP Slave must have no IP Address assigned.
- Turck devices come out of the box with no IP Address assigned. Factory reset can be performed from the device webserver or via the Turck Service Tool.

8.2 Adding Slave Devices

- Connect the new slave device(s) at the end of the BEEP line.
- Log into the BEEP webserver.
- Under the BEEP Network Configuration select **Discover/Update Network**.



The BEEP master will see the new device(s), and automatically update the network.



NOTE

- BEEP devices get auto-mapped according to their position on the network. (Left to Right)
- More memory can be allocated in the PLC for the Input and Output data sizes. Doing this allows for additional slave devices to be added later without having to take the PLC offline to reallocate space.

8.3 Master Device Replacement

Drop-in master replacement is not supported in this release of BEEP. If the user needs to replace a BEEP Master, they will need to set the IP Address on the device, log-in to the device webserver, enable the device to be a BEEP master and then rescan the network.