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1. Configuration of IEC104 Ethernet Driver

1.1 Device Configuration

The screenshot displays the configuration interface for the IEC104 Ethernet Driver, organized into three main sections:

- General Information:** Includes a checked 'Enable' checkbox, a 'Name' field with 'NewDevice', a 'Device Type' dropdown set to 'IEC104 (IEC 60870-5-104)', an unchecked 'Device Model' checkbox, a 'Unit Number' field with '1', a 'Tag Write Type' dropdown set to 'Single Write', a 'Description' text area, a checked 'Add device name as prefix to IO tags' checkbox, and a 'Bulk Copy' button.
- TCP/IP:** Includes an 'IP Address' field with '10.0.0.100' and a 'Port Number' field with '2404'.
- Extension Properties:** Includes an unchecked 'Device Address (if other than Unit Number):' checkbox, an empty text field, and a 't1:t2:t3:k:w:OA:DA:ST:' field with the value '15:10:20:12:8:0:3:30'.

Figure 2.2

1.1.1 IEC104 Device Parameter (t1:t2:t3:k:w:OA:DA:ST)

- t1: 1~255 second, please reference IEC104 spec
- t2: 1~600 second, please reference IEC104 spec
- t3: 1~600 second, please reference IEC104 spec
- k/w : 1~32767, please reference IEC104 spec
- OA: Master Originator Address
- DA: Slave Common Address
- ST: Scan Time. Range from 1~3000 second. Time Interval to send

1.2 Configuration of Tag

There are three types of Tag.

A. Read Only Tag

Format: **R:Read Address** / **Read Data Type** / **Read Command**

Example: **R:402** / **M_BO_NA_1** / **n**

B. Write Only Tag

Format: **W:Write Address** / **Write Command**

Example: **W:2300** / **C_RC_NA_1**

Note: Always show value 0 for this kind of tag

C. Read And Write Tag

Format: **R:Read Address** / **Read Data Type** / **Read Command** / **W:Write Address** / **Write Command**

Example: **R:400** / **M_BO_NA_1** / **n** / **W:2400** / **n**

✘ **Note: Add /SE after Write Command to change “Direct Execute” to “Select and Execute”**

- Read And Write Tag**

Format: **R:Read Address** / **Read Data Type** / **Read Command** / **W:Write Address** / **Write Command** / **SE**

Example: **R:100** / **M_SP_NA_1** / **n** / **W:2100** / **n** / **SE**

- Write Only Tag**

Format: **W:Write Address** / **Write Command** / **SE**

Example: **W:2100** / **C_SC_NA_1** / **SE**

1.2.1 Keyword Definition for Command

M	ME	TB	1
M : Monitor Message C : Control Message P : Parameter Message	Measured Value	T : with Time Tag N : No Time Tag A,B,C : different Variable Type	Second Variable Type

1.2.2 Read Address and Write Address Parameter

Read Address : Information Object Address

Write Address : Information Object Address

1.2.3 Read Data Parameter

Read Data Type : Choose Read Data Type below

Read Data Type	No Time Tag	with Time Tag
Single-Point Information	M_SP_NA_1	M_SP_TB_1
Double-Point Information	M_DP_NA_1	M_DP_TB_1

Bit string	M_BO_NA_1	M_BO_TB_1
Measured Normalized Value	M_ME_NA_1	M_ME_TD_1
Measured Scaled Value	M_ME_NB_1	M_ME_TE_1
Measured Short Floating Point Number	M_ME_NC_1	M_ME_TF_1
Measured Normalized Values without Quality Descriptor	M_ME_ND_1	
Packed Single-Point Information	M_PS_NA_1	
Step Position Information	M_ST_NA_1	M_ST_TB_1
Integrated Totals	M_IT_NA_1	M_IT_TB_1

1.2.4 Read Command Parameter

Read Command : Choose Read Command below

Read Command	Description
i:GroupID	Use Interrogation Command Group ID range from 0-16 0 means General Group 1 means Group1 Example: i:0
r	Use C_RD_NA_1 to read Read Address
c:GroupID	Use Counter Interrogation Group ID range from 1-5 5 means General Group 1 means Group1 Example: c:5
n	No Read Command, slave sends data automatically

1.2.5 Write Command Parameter

Write Command : Choose Write Command below.

Write Command	Description
n	For " Read And Write Tag " Choose Mapping Write Command by Read Data Type. See Read Data Type and Mapping Write Command Table
C_SC_NA_1	For " Write Only Tag " / " Single Point Information " Value 0: Off Value 1: On
C_DC_NA_1	For " Write Only Tag " / " Double Point Information "

	Value 1: Off Value 2: On ※Note: In “M_DP_NA_1” : Value 0: indeterminate or intermediate state Value 3: indeterminate state
C_RC_NA_1	For “Write Only Tag” / “Step Position Information” Value 1: next step LOWER Value 2: next step HIGHER
C_SE_NA_1	For “Write Only Tag” / “Measured Normalized Value”
C_SE_NB_1	For “Write Only Tag” / “Measured Scaled Value”
C_SE_NC_1	For “Write Only Tag” / “Measured Short Floating Point Number”
C_BO_NA_1	For “Write Only Tag” / “Bit string”
C_CI_NA_1:GroupID	For “Write Only Tag” / “Integrated Totals” Group ID range from 1-5 Group ID 5 means General Group Group ID 1 means Group1 Value 0: read (no freeze or reset) Value 1: counter freeze without reset (value frozen represents integrated total) Value 2: counter freeze with reset (value frozen represents incremental information) Value 3: counter reset

1.2.6 Read Data Type and Mapping Write Command

Read Data Type and Mapping Write Command : Choose Mapping Write Command below.

Read Data Type	Mapping Write Command
M_SP_NA_1	C_SC_NA_1
M_SP_TB_1	
M_DP_NA_1	C_DC_NA_1
M_DP_TB_1	
M_BO_NA_1	C_BO_NA_1
M_BO_TB_1	
M_ME_NA_1	C_SE_NA_1
M_ME_TD_1	

M_ME_NB_1	C_SE_NB_1
M_ME_TE_1	
M_ME_NC_1	C_SE_NC_1
M_ME_TF_1	
M_ME_ND_1	C_SE_NA_1
M_ST_NA_1	Use Write Only tag instead
M_ST_TB_1	Use Write Only tag instead
M_IT_NA_1	Use Write Only tag instead
M_IT_TB_1	Use Write Only tag instead