

User Manual

# **EasyBuilder Pro Quick Start Guide**

This guide explains how to create a simple project file in EasyBuilder Pro and download it for use on an HMI.

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# **EasyBuilder Pro Quick Start Guide**

Creating a simple project file in EasyBuilder Pro involves just a few steps:

Set PLC Device Parameters  $\rightarrow$  Create Objects  $\rightarrow$  Perform Offline or Online Simulation  $\rightarrow$  Configure HMI IP Address  $\rightarrow$  Download Project File to HMI

Ensure that EasyBuilder Pro is installed on your computer before starting. This guide uses a cMT2078X HMI and a PLC device with the MODBUS TCP/IP protocol as an example.

#### 1. Set PLC Device Parameters

*Step 1.* Open EasyBuilder Pro and create a new file.

Step 2. Select the model, check [Use template], and click [OK]. The template file includes several preset windows, such as built-in keypads on windows 50 to 68 and 83 to 90, user password setup pages on windows 70 to 74, EasyAccess 2.0 setup pages on windows 76 to 77, and the screensaver page on window 80.



- *Step 3.* On the [Device] tab, click [New Device/Server] to configure the PLC device to be connected.
- *Step 4.* This step uses a PLC device with the MODBUS TCP/IP protocol as an example. Correctly set parameters such as IP address and port.

## EasyBuilder Pro Quick Start Guide



Name :	MODBUS TCP/IP			
	O Device			
Location :	Local V S	ettings		
* Select Local for a	device connected to this H	IMI, or Remote fo	or a device connected through another H	IMI
Device type :		MODBUS	тсрлр	F)
	Device ID : 58, V.3.30, M	ODBUS_TCPIP.c3	3	
I/F:	Ethernet	~	Open Device Connection Guide	
	mulation on HMI (use I B-13	2358).		
* Support off-line si				
* Support off-line si				
<ul> <li>Support off-line si</li> <li>IP :</li> </ul>	192.168.1.111, Port=50	2	Settinas	
" Support off-line si	192.168.1.111, Port=50	2 am Protocol )	Settings	
- Support off-line si IP :	192.168.1.111, Port=50. Use UDP (User Datagra	2 am Protocol )	Settings	
- Support off-line si IP :	192. 168. 1. 111, Port=50 Use UDP (User Datagra Device default station no. :	2 am Protocol ) 1	Settings	
- Support off-line si IP : [	192. 168. 1. 111, Port=50 Use UDP (User Datagra Device default station no. : Use broadcast commar	2 am Protocol ) 1 nd e station no. varia	Settings	
- Support off-line si IP : C	192.168.1.111, Port=50 Use UDP (User Datagra Device default station no. : Use broadcast commar Default station no. use <u>How to designate the static</u>	2 am Protocol ) 1 ad : station no. varia on no. in object's a	ble	
- Support off-line si IP : [	192. 168. 1. 111, Port=50 Use UDP (User Datagra Device default station no. : Use broadcast commar Default station no. use <u>How to designate the static</u> val of block pack (words) :	2 am Protocol ) 1 ad : station no. varia on no. in object's a 32	able address?	
- Support off-line si IP : Inter Max, rea	192. 168. 1. 111, Port=50 Use UDP (User Datagra evice default station no. : Use broadcast commar Default station no. use <u>How to designate the static</u> val of block pack (words) : id-command size (words) :	2 am Protocol ) 1 and e station no. varia am no. in objects a 32 ~ 120 ~	able Address Range Limit Data Conversion	

# *Step 5.* After clicking [OK], a new device will be added to the [Device list].

stem	n Parameter	Settings	5					
Cellular Data Network			Time	Sync./DST		e-Mail	FTP	
De	evice	Model	Gene	eral Sy	stem	Remote	Security	Extended Memory
Devi	ce list:				<b>D</b> · T			What's my IP?
Devi	ce list:	1	Name	Location	Device Type	e	Interface	<u>What's my IP?</u>
Devi	ce list: Local HMI	ľ	Name Local HMI	Location Local	Device Type cMT2078X	e (800 x 480)	Interface	<u>What's my IP?</u>



## 2. Create Objects

The following describes how to create three representative objects and their functions.

File	8 🗷 🔦	🔶 🗧 Hoi	ne Project	Obje	ect Data/Hi	istor	y IloT/Energy	View	Tool	We	incloud
1~	s.⊂ 0	Picture	e 💡 Bit Lamp		💾 Set Bit		🔟 Multi-State S	witch 🗕	Slider	2	🕮 Numeric
GΠ	🕁 👬 A	Shape	🚦 Word La	mp	💾 Set Word	3	En Function Key		Option	List	ASCII
		III Table		1	🔶 Toggle Sw	itch	💾 Combo Butto	n			
	Draw		Lamp				Button/Switch				Input

*Step 1.* Create a [Toggle Switch] Object:

If there is a switch for a light on the PLC device and the goal is to control its switch on the HMI, create this object. It is commonly used for operating bit addresses. Click [Object] » [Toggle Switch], and under Read/Write, set the corresponding MODBUS addresses for the light. Refer to the <u>PLC Connection Guide</u> for address mapping.

	New Toggle Switc	h/Bit Lamp	×
TS_0 (0x-1)	General Securit	/ Shape Label	
	Comm	ent :	
••••		O Bit Lamp O Toggle Switch	
		Read/Write use different addresses	
	Read/Write		
	Device :	MODBUS TCP/IP V 💊 🖓	
	Address :	0x 🔻 1	
		Invert signal	
		Write when button is released	
	Attribute Switch st	/le : Toggle V	

Set the switch style to Toggle, meaning that if the initial state is 0 (OFF), clicking it once will set it to 1 (ON). Besides the default images included in the system, it is also possible to add or modify images for each state in the Shape tab.

New Toggle Switch/Bit Lamp	×	New Toggle Switch/Bit Lamp	×
General Security Shape Label		General Security Shape Label	
State:     0     ~       Picture:     Lamp - Ribbon       SYSTEM       68x69	]	State:     1     ~       Picture:     Lamp - Ribbon       SYSTEM       68x69	
0 1 Picture		0 1 Picture	
Use picture Picture Library		Use picture Picture Library	



#### Step 2. Create a [Numeric] Object:

Various data such as temperature and humidity from sensors often exist in PLC devices. This object can display the data or set parameters. Click [Object] » [Numeric] and configure, including the read/write addresses.

	Numeric's	Properties							×
TS-010x-1	General	Data Entry Comment :	Format	Trigger Action Setting	Security	Shape	Font	Profile	
NE_0 (4x;1)	4	Allow input						0	
•	F []	Read/Write u	se differe	nt addresses					
	_Read∧	Vrite							
	C Ac	Device : MO	DBUS TC	P/IP		~ 		-	

#### Step 3. Create a [Function Key] Object:

To create an intuitive project interface, it is often necessary to display popup windows or switch between full-screen windows. Use [Function Key] to create these functional buttons. Click [Object] » [Function Key] and configure the functions as needed.

	Function Key's Properties	
TS_0 (0x-1)	General Security Shape Label Profile	
	Comment :	
	Type : Window	•
NE_0 (4x,7) ######	Activate after button is released	
	Window	
FK_0	Function : Display popup window	•
•	Window no. : 70. Login & Logout	$\sim$
	Title bar/Position	
	Animation : Settings [None, None]	
	Close this popup window when parent window is closed	
	Show close button	
	Notification	
	Enable	



*Step 4.* Properly place the objects in the editing window to complete a simple project file.

EasyBuilder Pro V6.09.02.469 : EBProject1 - [10 - WIN	DOW_010]		
File 🗄 🖾 🐟 🍬 🗧 Home Project Obje	ct Data/History IIoT/Energy View Tool Weincloud	đ	
↓ Cut Paste     ↓ Select - ↓       ↓ System Parameters     ∞       Clipboard     Editing	◎         III         IIII         ●         IIIII         IIIIII         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	F III III III III III III III III III I	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
Windows Tree 🗸 🗸	4 10 - WINDOW_010 x		
Enter keyword to filter windows           Image: State Stat			

EasyBuilder Pro offers a variety of objects with different functions. When designing project files, select objects according to needs. For details on available objects, refer to the EasyBuilder Pro User Manual.



## 3. Simulate the Project File

EasyBuilder Pro offers two types of simulation:

**Offline Simulation:** Operates without a connection to the PLC device and is used to verify whether the project file functions as designed.

**Online Simulation:** Communicates with the PLC device to reflect actual HMI-PLC behaviors.



## Offline Simulation

- *Step 1.* Save the project file.
- Step 2. Click [Project] » [Compile].
- *Step 3.* Click [Compile], and after completion, click [Close].

Compile	×
Project name : C:\Users\Desktop\cMT2078X_Quick_Start.cmtp	
CXOB file name : C:\Users\Desktop\cMT2078X_Quick_Start.cxob	
Decompilation is prohibited     Disable HMI upload function	
Select the languages used on the HMI	
Startup language after redownloading the project : Language 1	~
Treat the use of unsupported tags as : Error	~
Output Error List	
Total size : 3668719 bytes (3.50 MB)	
Free space : 63440145 bytes (60.50 MB)	
Project Checksum : <u>5ecd5a23a05a2c1159ee68f698b55cbc</u> 0 error(s), 0 warning(s)	
succeeded	
Double-click a message to modify the attributes of the object in question         Compile       Quick Compile         Font Management           Build font files	lose

*Step 4.* Click [Offline Simulation] to verify the relative position and basic operation of objects.



Step 5. The [Toggle Switch] and [Numeric] objects display offline without attempting communication with the PLC device. Check if the [Function Key] object operates the popup window correctly.

🚝 cMT Viewer ( Simulation )				_	×
			×		
0	Login b	y Index	_		
	Index admin	C	in		
	Password	Logo	out		
			_		

#### **Online Simulation**

- **Step 1.** Ensure computer communication with the PLC device, and after clicking [Online Simulation], verify communication with the device.
- *Step 2.* The software will reflect the actual values in the PLC device.

CMT Viewer ( Simulation )	-	×
10		

7



### 4. Configure HMI IP Address

#### Automatic IP Configuration

- *Step 1.* Power on the HMI and connect to LAN. Ensure there is a DHCP server on the LAN.
- *Step 2.* Tap the icon **o** in the top left corner of the HMI.
- *Step 3.* Tap [Network] from the left menu, then [Configure] on the right, and try to modify settings.

etting 💶 🛛 EXIT 🛛	Network	
System Properties	Ethernet LAN2	
Model / HMI Name / O	Configure	Automatic >
CODESYS Activate CODESYS / Re	IP Address	192.168.2.191
	Subnet Mask	255.255.252.0
Project Clear History / Restart	Gateway	192.168.1.254
Network     Ethernet / Configure / I	DNS	168.95.1.1
Security Admin / Update Projec	Enable CODESYS Login	
EasyAccess 2.0		

- *Step 4.* To modify settings, log into the system settings. Enter the default password 111111 and press enter.
- *Step 5.* Select [Automatic] and click [Save]. Once successful, the HMI will obtain a LAN IP address.





## Manual IP Configuration

*Step 1.* If the LAN has no DHCP server, open the command prompt by typing 'cmd' in the computer's search interface. Then, use the command 'ipconfig' to check the computer's network settings.

Command Prompt	-	$\times$
Microsoft Windows [Version 10.0.19045.5131] (c) Microsoft Corporation. All rights reserved.		^
C:\Users\FinnLiu>ipconfig		
Windows IP Configuration		
Ethernet adapter:		
Connection-specific DNS Suffix .: Link-local IPv6 Address : fe80::3b16:96d2:46b:cf%13 IPv4 Address : 192.168.1.91 Subnet Mask : 255.255.252.0 IPv4 Address : 169.254.135.130 Subnet Mask : 255.255.0.0 Default Gateway : fe80::ae71:2eff:fe07:dd82%13 192.168.1.254		

Step 2. Choose [Manual] in Network settings, input the same subnet as the computer, and click [Save]. Once successful, the HMI will obtain a LAN IP address.

Setting 💶 EXIT 🛛	< Network	Configure	Save
Admin, 💕	Automatic		
System Properties Model / HMI Name / O	Manual		~
CODESYS Activate CODESYS / Re	IP Address		192.168.1.191
	Subnet Mask		255.255.252.0
Clear History / Restart	Gateway		192.168.1.254
Network     Ethernet / Configure / I	DNS		168.95.1.1
Security Admin / Update Projec			k



## 5. Download Project File to HMI

#### Step 1. Click [Project] » [Download (PC->HMI)].

Step 2. Select the target HMI for download and click [Download].

• Ethernet	Password/Port no. of download/upload :	Settings
4 IP HMI Name		⊳
HMI : cMT2078X-FAE-	4892 v 192.168.2.52 (Default-test)	
	Search 192.168.2.8 (cMT2078X-FAE-4892)	
	Search All	
		<u>What's my l</u>
Project Checksum :	5ecd5a23a05a2c1159ee68f698b55cbc	
Runtime * Necessary if update runt	ime or execute download first time.	
Runtime * Necessary if update runt	ime or execute download first time.	
Runtime * Necessary if update runt	ime or execute download first time.	
Runtime * Necessary if update runt     Use system settings file	ime or execute download first time.	
Runtime * Necessary if update runt     Use system settings file	ime or execute download first time.	
Runtime *Necessary if update runt Use system settings file Synchronize HMI clock with PC	ime or execute download first time.	
Runtime *Necessary if update runt Use system settings file Synchronize HMI clock with PC Reset recipe (RW, RW_A)	ime or execute download first time.	pling
Runtime *Necessary if update runt Use system settings file  Synchronize HMI clock with PC Reset recipe (RW, RW_A)  Reset recipe database	ime or execute download first time. Reset event log Reset operation log Reset string tab	pling le
Runtime *Necessary if update runt Use system settings file  Synchronize HMI clock with PC Reset recipe (RW, RW_A) Reset recipe database	ime or execute download first time. Reset event log ☑ Reset data sam Reset operation log ☑ Reset string tab Reset PRW on HMI and all cMT Viewers	pling le
Runtime *Necessary if update runt  Use system settings file  Synchronize HMI clock with PC  Reset recipe (RW, RW_A)  Reset recipe database  Automatically using current settings i	ime or execute download first time. Reset event log e Reset data sam Reset operation log Reset string tab Reset PRW on HMI and all cMT Viewers to download after compiling	pling le

*Step 3.* After downloading, verify the HMI interface. If the following screen appears, it indicates communication failure between HMI and PLC. Check connections and communication parameter settings.

0		
	Device No Response Close	
	10	



Step 4. If the following screen appears, it indicates successful communication between HMI and PLC.



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