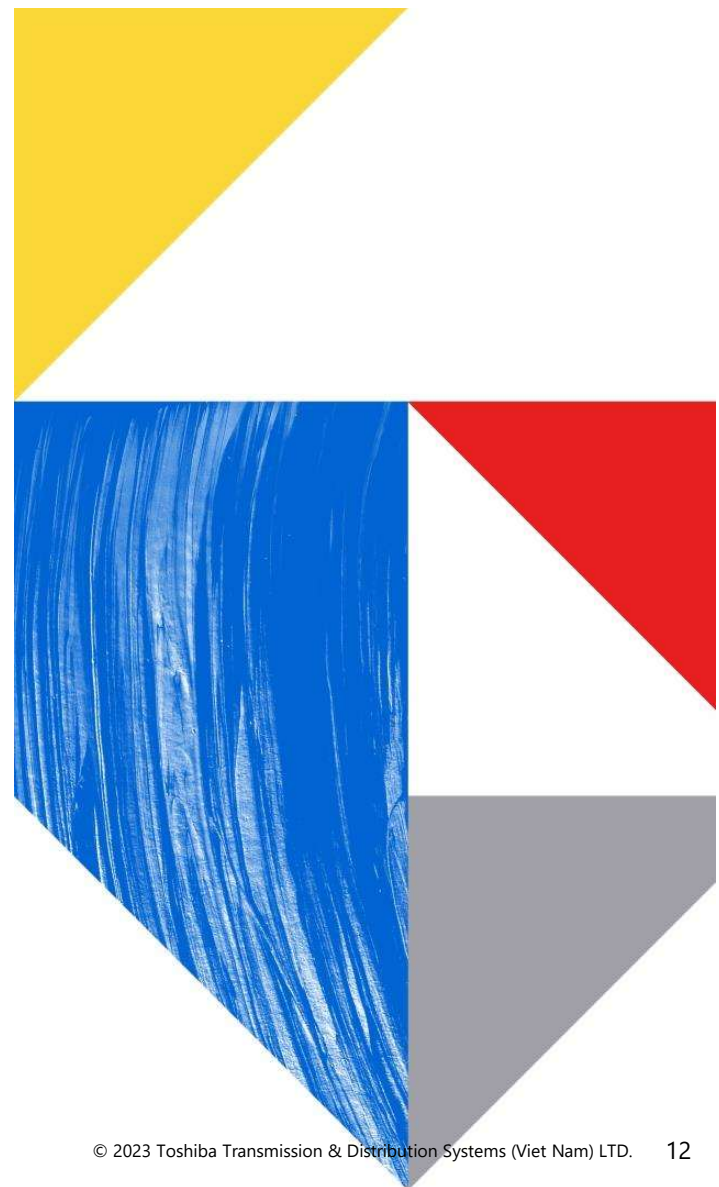


03

Basics



Basics

[Main screen]

Project Tree

Work Space

Edit Wizard

Message Window

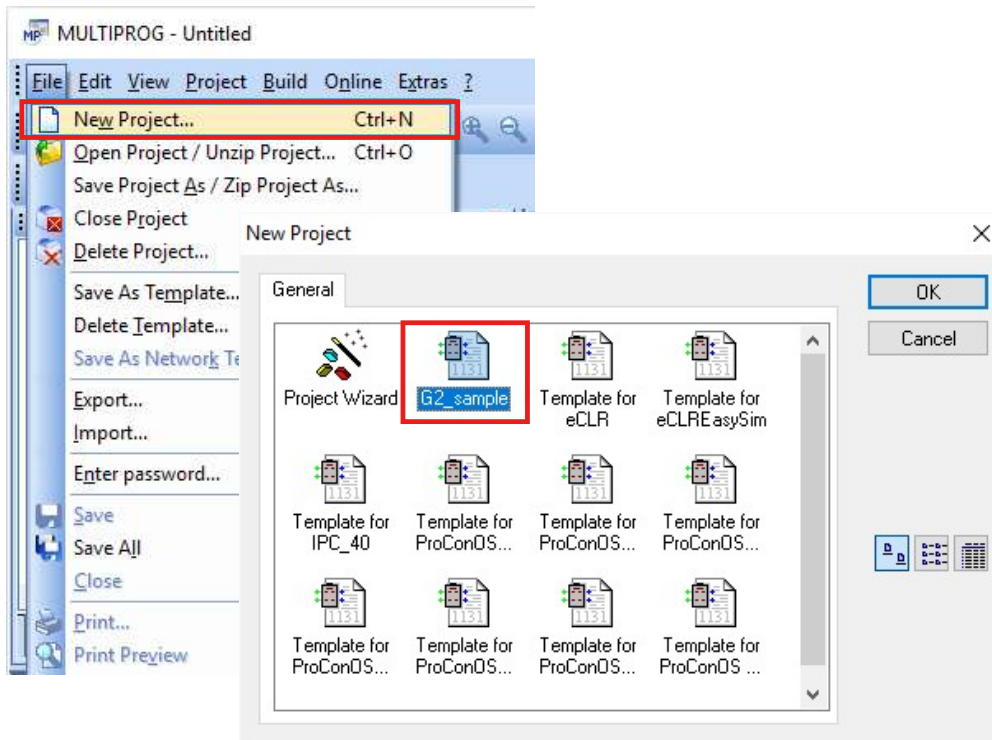
The screenshot displays the MULTIPROG software interface for a project named 'MULTIPROG - P2GBU200A00 - [CB_simulator_sample:G2_Main3]'. The interface is divided into several key areas:

- Project Tree (Left):** A hierarchical view of the project structure. It includes folders for 'Libraries', 'Data Types', and 'Logical POUs'. Under 'Logical POUs', there is a 'G2_Main3' folder containing various components like 'G2_Main3T', 'G2_Main3V', 'G2_Main3', 'G2_10ms', 'G2_10msT', 'G2_10msV', 'G2_10ms', 'G2_100ms', 'G2_100msT', 'G2_100msV', 'G2_100ms', 'CR_Led_Mode_TTim_Optim', 'CR_Dpossyn', 'CR_Dpos_1_To_32', 'CR_Dpos_33_To_64', 'CR_Dpos_65_To_72', 'CR_Tpos', 'CR_Spos', 'CR_Softsw', 'CR_AutoSeq', 'CR_GenCnt', 'CR_Tap_PQM_WhVarh_DmyCB', and 'Set_IRSwitch'.
- Work Space (Center):** The main area for editing the project. It shows a ladder logic diagram with three rungs, each containing a 'CB_Sim' component. The components are labeled '(*Example*)', '(*CB simulator 13*)', and '(*CB simulator 4-5*)'. The diagram includes various logic elements like 'T1', 'T2', 'T3', 'T4', 'T5', 'T6', 'T7', 'T8', 'T9', 'T10', 'T11', 'T12', 'T13', 'T14', 'T15', 'T16', 'T17', 'T18', 'T19', 'T20', 'T21', 'T22', 'T23', 'T24', 'T25', 'T26', 'T27', 'T28', 'T29', 'T30', 'T31', 'T32', 'T33', 'T34', 'T35', 'T36', 'T37', 'T38', 'T39', 'T40', 'T41', 'T42', 'T43', 'T44', 'T45', 'T46', 'T47', 'T48', 'T49', 'T50', 'T51', 'T52', 'T53', 'T54', 'T55', 'T56', 'T57', 'T58', 'T59', 'T60', 'T61', 'T62', 'T63', 'T64', 'T65', 'T66', 'T67', 'T68', 'T69', 'T70', 'T71', 'T72', 'T73', 'T74', 'T75', 'T76', 'T77', 'T78', 'T79', 'T80', 'T81', 'T82', 'T83', 'T84', 'T85', 'T86', 'T87', 'T88', 'T89', 'T90', 'T91', 'T92', 'T93', 'T94', 'T95', 'T96', 'T97', 'T98', 'T99', 'T100'.
- Edit Wizard (Right):** A panel for editing the project. It includes a 'Group' dropdown, a 'Favorites' list, and a table of variables and their descriptions.
- Message Window (Bottom):** A panel for displaying messages. It includes a 'Variable' column, a 'Value' column, a 'Default value' column, a 'Type' column, and an 'Instance' column. It also has a 'Watch' tab and a 'Build' button.

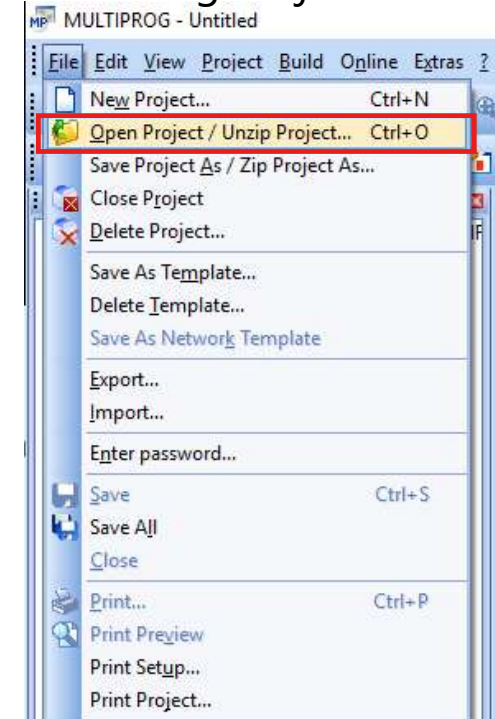
Name	Description
ADD	Addition
AND	Bitwise AND
CTD	Counter Down
CTU	Counter Up
CTUD	Counter Up/Down
DIV	Division
EQ	Equal: =
F_TRIG	Falling Edge Detection
GE	Greater Than Equal: >=
GT	Greater Than: >
LE	Less Than Equal: <=
LT	Less Than: <
MOD	Modulo Division
MOVE	Assigns Value
MUL	Multiplication
NE	Not Equal: <>
NOT	Complement
OR	Bitwise OR
R_TRIG	Rising Edge Detection
ROL	Rotate Left
ROR	Rotate Right
RS	Reset Dominant
SHL	Shift Left
SHR	Shift Right
SR	Set Dominant
SUB	Subtraction

Basics

[Open Project]



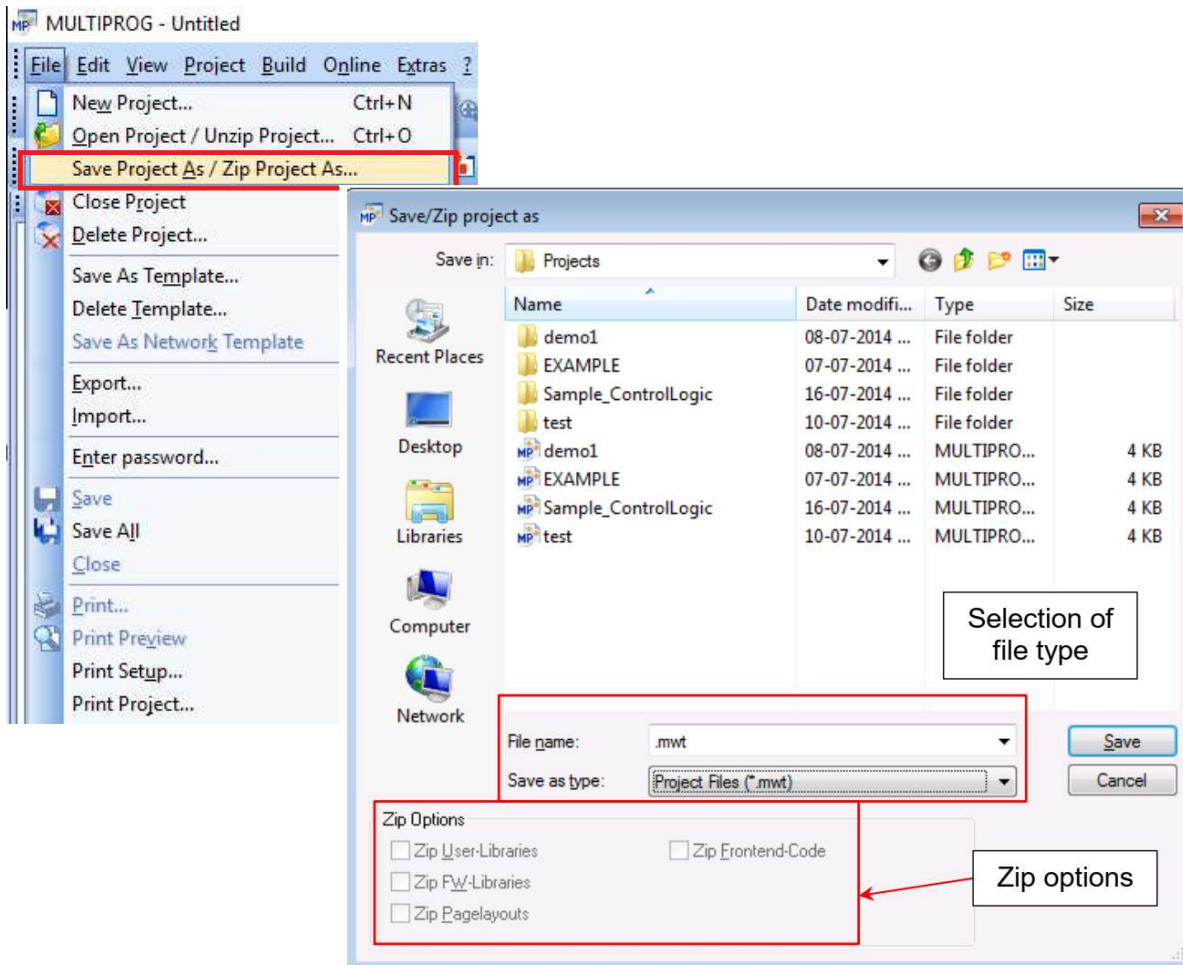
Open Existing Project



Menu bar: Select **"File\New Project..."** or **"Open Project/Unzip Project..."**

Basics

[Save Project]



The user can select:

- (*.mwt) a normal type

Name	Date modified	Type	Size
P2GBU200A00	06-Jul-20 9:32 PM	File folder	
P2GBU200A00	06-Jul-20 9:32 PM	MULTIPROG project	4 KB

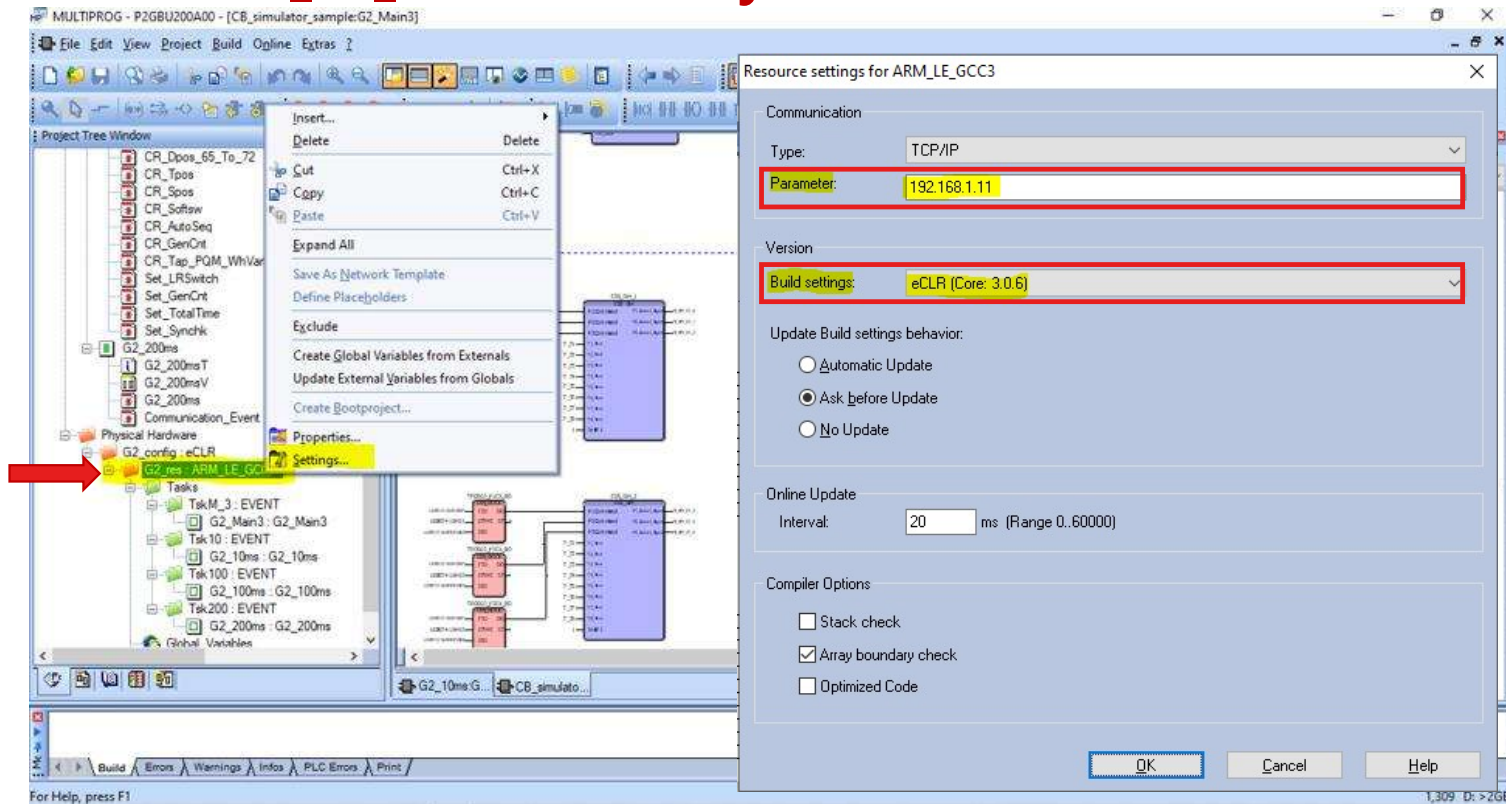
- (*.zwt) a zipped type

Name	Date modified	Type	Size
P2GBU200A00	03-Jul-20 3:37 PM	MULTIPROG project	3,749 KB

Basics

[Communication Address (IP/ COM port) & Build Settings]

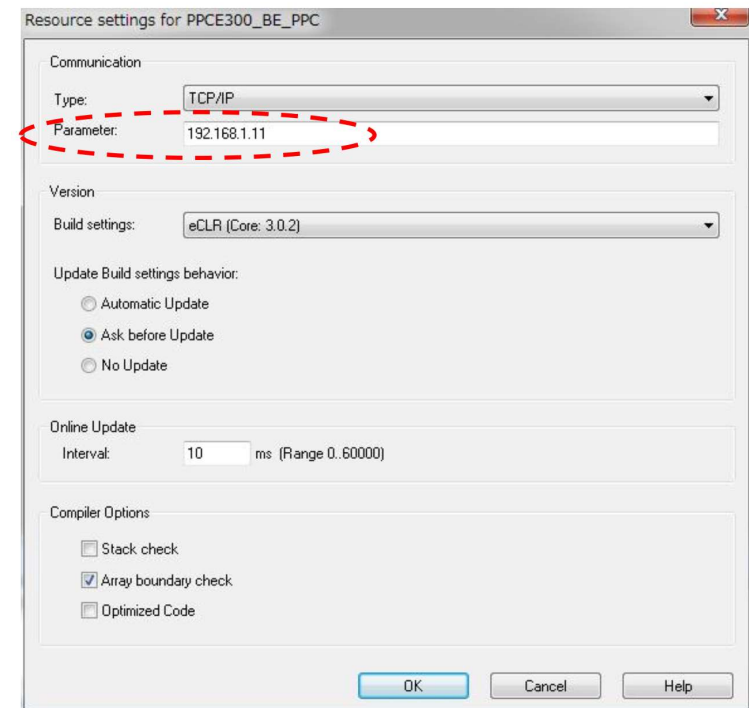
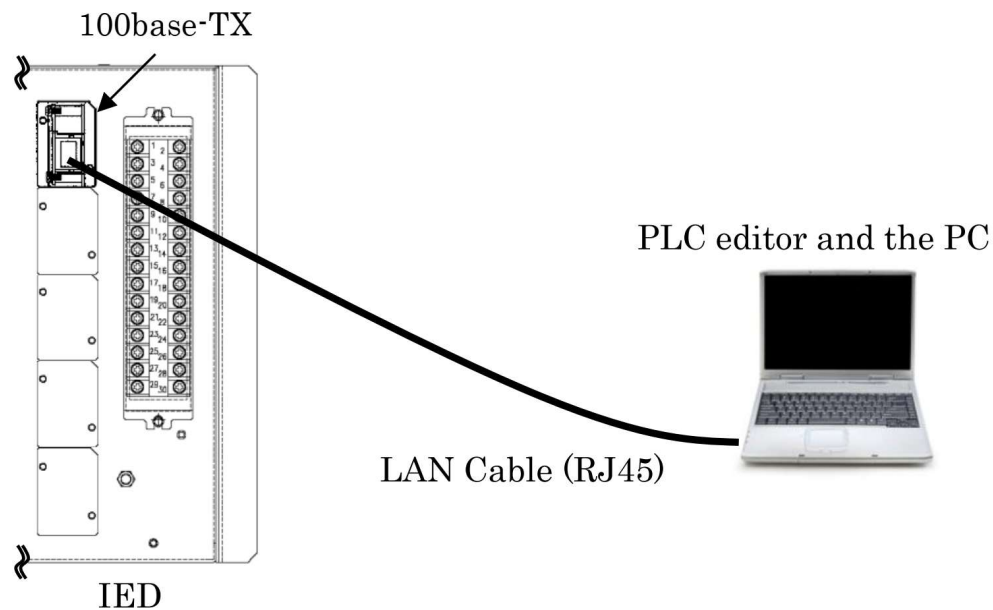
- Right click and select '**Settings**' at '**G2_res:ARM_LE_GCC3**' or '**G2_res:PPCE300_BE_PPC**' under **Physical Hardware**



Basics – Connect to IEDs

[LAN-cable connection]

- Keying **IP address** of the IED into "**Parameter**".



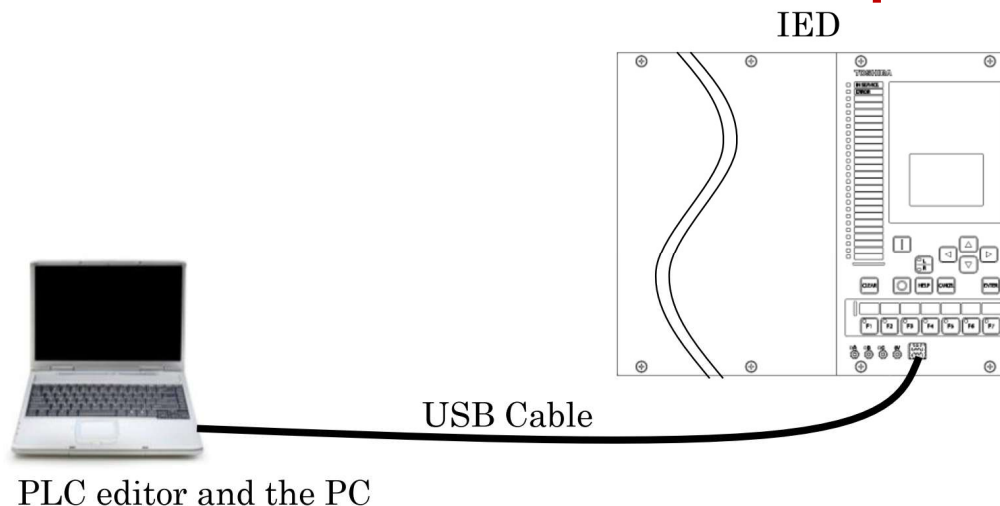
- **The user can get the actual information of IP address from the IED screen**

Default IP address: 192.168.1.11

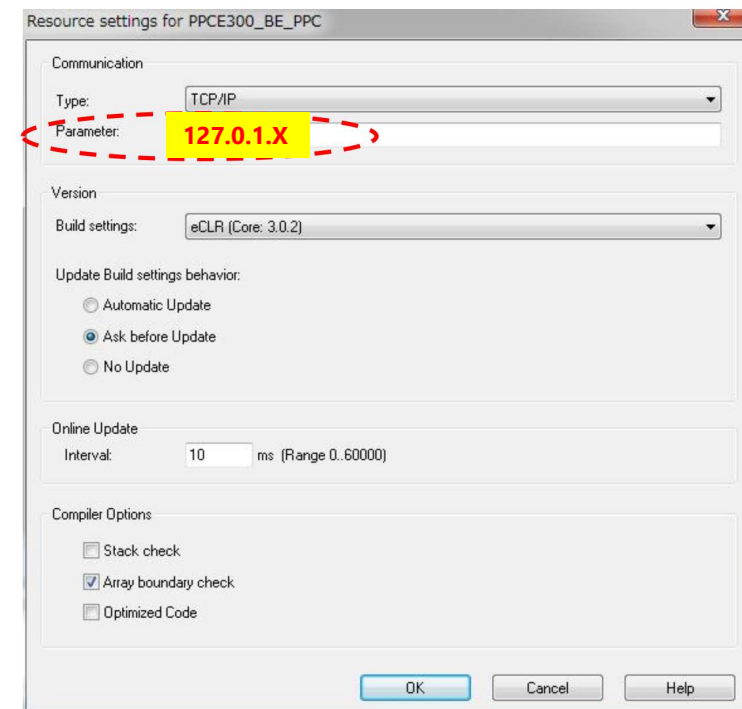
Basics – Connect to IEDs

[USB-cable connection]

- Keying the **address of the communication port** in the PC into **“Parameter”**.



- As a rule, if communication port **“COM X”** is used, user should set IP address **“127.0.1.X”** into the PLC editor.
- When communication port **“COM10”** is used, the IP address is configured as **“127.0.1.10”**.



Basics – Connect to IEDs

[USB-cable connection]

- User should run **"TPC_SERIAL_IF.exe"** is located in this path:

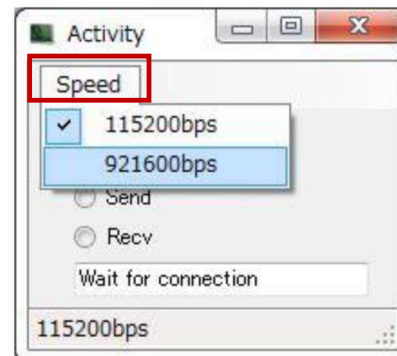
"C:\Program Files (x86)\KW-Software\MULTIPROG 5.35 Build 574\G2_tool"

Name	Date modified	Type	Size
readme	07-Nov-13 8:51 PM	Foxit Reader PDF Document	94 KB
TPC_SERIAL_IF	17-Mar-15 8:05 PM	Application	129 KB

- Selection of the communication speed operated in the **"PPCE"** or **"ARM"** software":

(1). 115.2kbps for G2 ("PPCE")

(2). 921.6kbps for G2A ("ARM†")



†Note: 'ARM' software is identified by checking on the software model representing '3' at the "G" position of the order number, others case is 'PPCE' software

Basics – Connect to IEDs

[Establish connection with IED]

- Select **“Project Control...”** from the **“Online”** menu bar

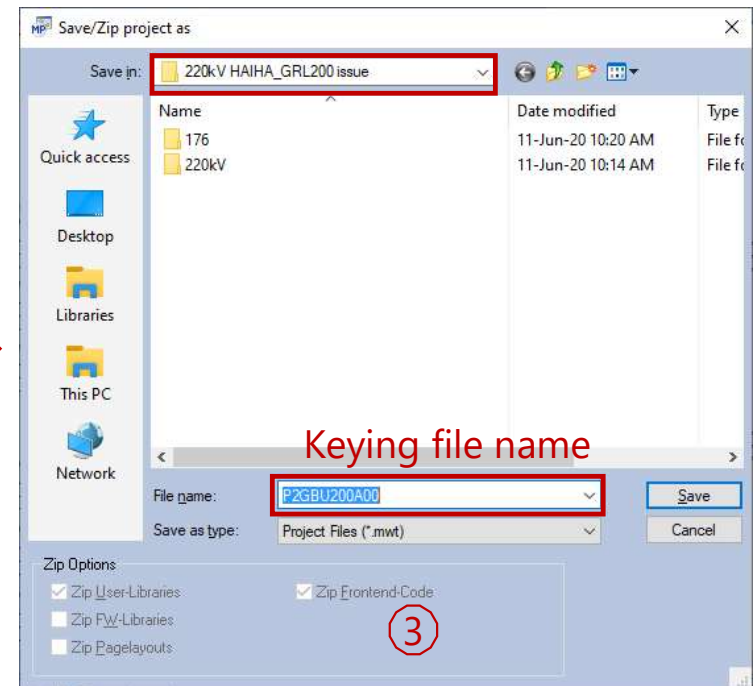


- If connection is successful, a Project Control Dialog appears with **“Running”** state

Basics – Connect to IEDs

[Upload procedure]

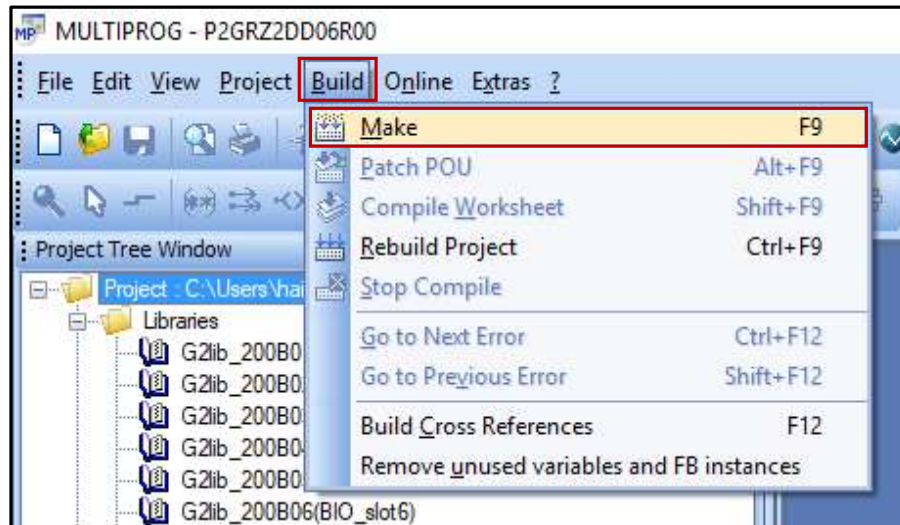
- After connection to IED is established, in Project Control Dialog, select **“Upload”** to *Read-out* PLC data from IED to PC
- In the Upload window, click **“Project Source”**.
- Select a folder for saving the data



Basics – Compilation and Verification

[Compilation]

- After editing the project, Compiling project is required
- From Menu Bar **“Build”** then select **“Make”**

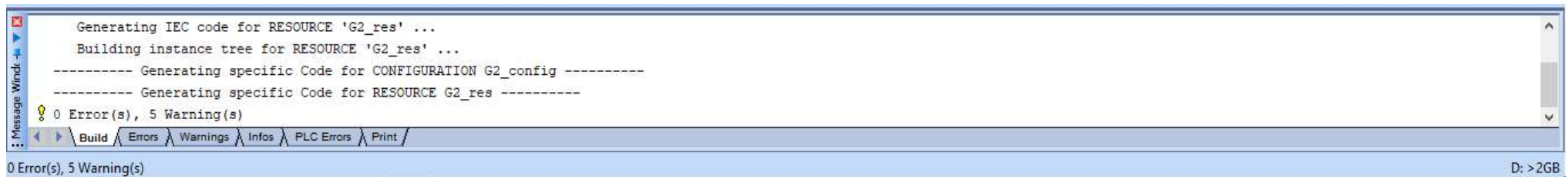


User also compile by pressing **F9 key**

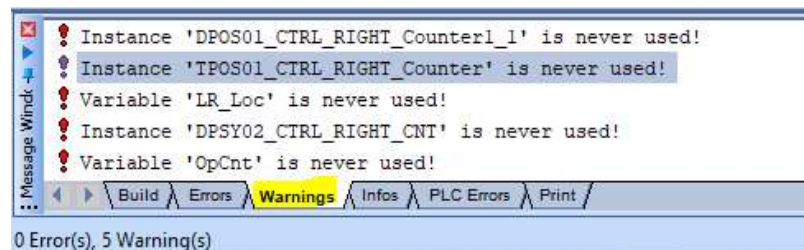
Basics – Compilation and Verification

[Verification]

- While compiling, the message window displays the compilation process.
- Any detected errors and warnings (e.g. syntax errors, memory or file problems) and additional information will be displayed **Message Window**.



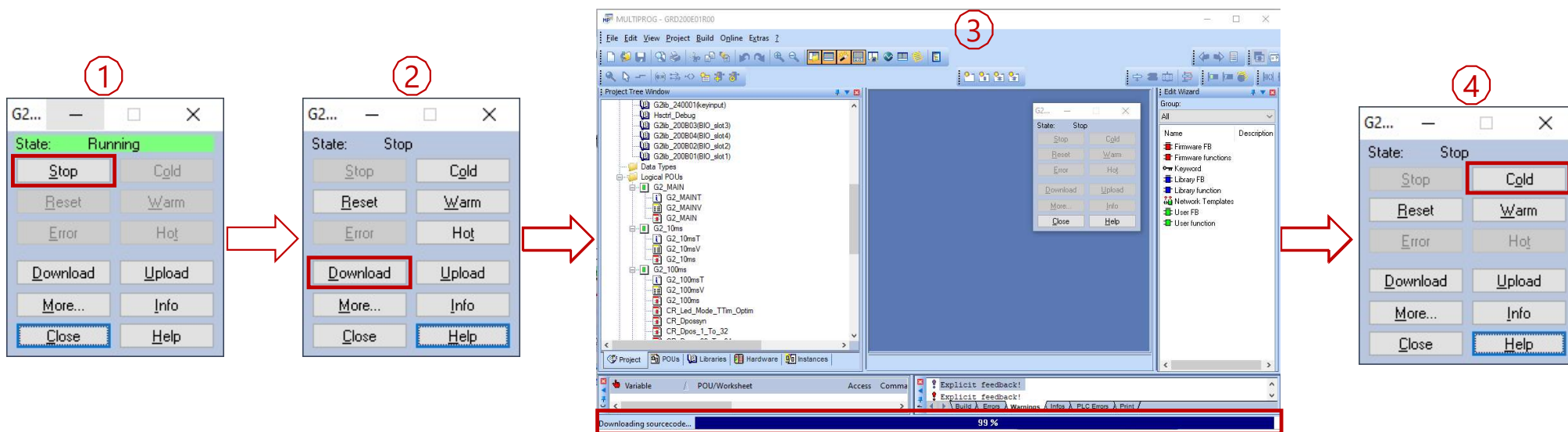
- Double clicking on the error message to check suspected configuration in worksheet



Basics – Connect to IEDs

[Download procedure]

- After connection to IED is established, Project Control Dialog, Click **“Stop”** to stop the PLC;
- Select **“Download”** to **Write** PLC data from PC to IED;
- Next, by selecting **“Cold”** to start PLC and confirm **Running** status is shown



Basics – Connect to IEDs

[Download procedure]

- Start-up types in PLC operation:

PLC start-up type	Description
Cold (Cold Start)	The user can start the PLC from the initial process.
Warm (Warm Start)	The user can start the PLC without the initial process.
Hot (Hot Start)	The user can start the PLC from the point where the PLC had stopped earlier.
Reset	Reset PLC. Note that the PLC cannot start until data is downloaded again.

†Note: The user should select “Cold (Cold Start)”.