

OPC server for RWP80

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1 Introduction

OPC server pro RWP80 is designed to read out data from RWP80 thru serial service connector. It publishes data by OPC interface for visualization software.

2 Connection

OPC server support two types of connection:

- Direct connection thru the serial port from PC to RWP80
- Connection via Ethernet using Ethernet/RS232 converter

Server supports connection using virtual serial port too, but this solution is not recommended.

2.1 Connection thru serial port

In this case we connect RWP80 serial service connector direct to PC serial port. The advantage is that we don't need any other hardware. The disadvantage is the limited distance between PC and RWP80 (15m approximately). The limitation is the number of the serial port, that the PC contains. If we use the serial connection, we should specify the serial port, to which is the RWP80 connected.

2.2 Connection thru TCP socket via Ethernet

This type of connection uses Ethernet network to connect the device. The computer must contain LAN interface. RWP80 is connected to Ethernet via Ethernet/RS232 converter. The advantage is the ability to connect many devices placed anywhere, where is Ethernet network available. The disadvantage is the higher latency.

The Ethernet/RS232 converter must be transparent(raw). Everything what we write to the TCP socket must converted to RS232 without any change of data. The converter must have a fixed IP address (no DHCP) and one or more TCP sockets on this IP corresponding to serial output(s). The parameters of the RS232 are 2400 baud, no parity, no flow control, one stop bit. PC and the converter must see to each other via Ethernet. On the converter we have to select the same TCP port as in OPC server configuration. If there are any router or firewalls between the RWP80 and the PC, connection on this port must be allowed.

3 Configuration

The configuration is stored in INI files. It consists of configuration files of devices and of one master configuration file, where the list of device INI files is stored. Configuration files can be edited manually or by program Configurator.

3.1 Configuring with program Configurator

3.1.1 Master configuration file

To edit the master configuration file, the Main tab-sheet should be is displayed. In this tab-sheet we can change the list of device configuration files. First use the button Load

configuration on the right to load the information from master configuration file. Then add or remove the configuration files of the devices. Finally save the result by pressing Save configuration on the right. If you don't have any configuration of the device, you should make it.

3.1.2 Device configuration

ADR files To make configuration of the device the buttons from the top bar are used. The base file for the device configuration is ADR file. It is generated from the RWP80 program. The utility is called pointrep and is included in Unigr environment from Landiss. The input file for this utility is RWP project file PLN. The output is the ADR file with address map. To use ADR file with OPC server, /F /S /C /R switches must be added to pointrep command. To auto generate the ADR, you can use Generate adr command from the Configurator program, but pointrep must be in your PATH. There were some problems with Unigr installation on Win2000 and WinXP. If the generation of ADR file was success full, then you can create new device configuration and use the ADR file. The ADR file can be displayed in Adr tab-sheet.

Parameters After loading ADR file the Parameters tab-sheet will be displayed. On the left, there are parameters of the communication. At first, select the type of the communication port. If you choose the serial port, you have to specify the COM number. If choose TCP socket, you have to specify the IP address of the converter and the number of the TCP port. The station number MUST be 0 (for debug use only). The type conversion from RWP80 to OPC is made automatically. In problematical cases the manual change is available. More information about types is in section Manual INI editation.

Variables In Variables tab-sheet we can select the variables to readout. Some projects can be very large so the filtering is used. On the left, there is the tree of variables. To select the variable to readout, just tick the check-box. At the begin, there are no variables displayed. It is because there is no filter specified. The filter is displayed on the right. You can create new filter or load it from file. In filter tree, select the types of function blocks and the variables that will be displayed in the variable tree on the left. Filter has only visual effect, already checked variable will be read out until it will be unchecked. Selecting other filter will not affect the readout of the variable.

3.2 Manual INI editation

INI files are text file and can be manually edited. The master configuration file is called pruserver.ini. It consists of one section called Main. In this section there is variable PocetPRU, that contain the number of devices. The next variables are the variables used to store the path to device configuration. The names are ININame#XXX, where XXX is the id of inifile incrementally from zero.

Configuration file of the device contains three sections, Main, Typy and Promene. In section Main there are the following variables:

- COMPort
- CisloStanice

- `ServerName`
- `COMPortIP`
- `COMPortSocket`
- `COMPortTyp`
- `Timeout`
- `PocetTypu`
- `PocetPromenych`

`COMPort` is the number of COM port (1,2,...). `CisloStanice` must be zero. `ServerName` is the name of device. `COMPortIP` is IP address of the converter, `COMPortSocket` is the number of TCP socket on converter. `COMPortTyp` contains type of port (0=serial; 1=TCP socket). `Timeout` is the time between two request for data in ms. The value vary depending on the latency of the network. `PocetTypu` is number of types. `PocetPromenych` is number of variables to readout.

In section `Typy` are stored variable types and its IDs. Each type has three parameters:

- `Nazev#XXX`
- `Konst#XXX`
- `OLEKonst#XXX`

`XXX` is auto-increment number of type (0–`PocetTypu`–1). `Nazev` is the name of type (same as in *.adr*). `Konst` and `OLEKonst` are IDs of types in RWP80 and OPC (see following table):

Typy RWP80	ID
TIME	2
STEP	0
DATE	5
REAL	1
DELTATIME	3
DELTATIMELONG	4

Typ OPC	ID
WORD	0
FLOAT	1
Binary	2
String	3
LONGWORD	4

In section `[Promene]` is stored information about variables to readout. Each variable has the following parameters:

- `Nazev#XXX`

- Adresa#XXX
- DatovyTyp#XXX
- Adresovani#XXX
- Priorita#XXX
- Pristup#XXX
- Minimum#XXX
- Maximum#XXX
- PRUNazev#XXX

XXX is auto-increment number (0–PocetPromenych–1). Nazev is the OPC name. Adresa is address of variable in RWP80. DatovyTyp is the name of the type from [Typy]. Adresovani chooses address space (PA/KL). Priorita the priority of the variable (1-3, 1 highest). Pristup says, if the variable is read-only or read-write (like in *.adr*). Minimum and Maximum are ranges of the value. PRUName is the original variable name from RWP80 *.adr* (\$ is used as separator).

4 OPC server registration

For automatic starting OPC server if it is needed the registration is necessary.

4.1 Registration

To register OPC server start the server pruserver.exe with parameter /regserver or just only start.

4.2 OPC server startup

After registration of OPC server it starts when is needed. In case you are using demo version without HW key, it is better to start OPC server before the application to prevent timeout during OPC variable list.