

Using OPC90 To Source Bulk Data

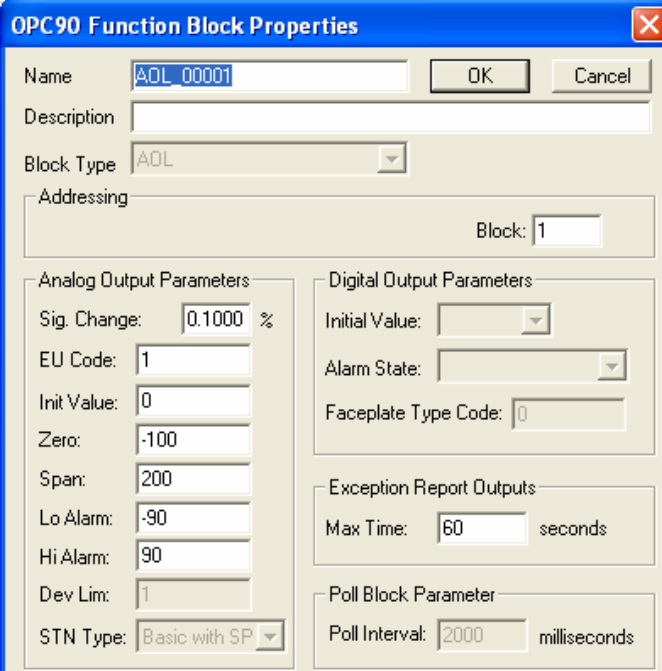
Some applications of OPC90 need to source bulk analog and digital data to the ABB Bailey system.

There is a right and wrong way to accomplish this task. A common mistake is to write bulk analog data to RMSC blocks configured in the ABB Bailey controllers and digital data to RCM blocks. This implementation bypasses ABB Bailey exception reporting, stresses the communication path to the controller and slows down execution of the controller blocks. Therefore, do not use this incorrect method.

The correct implementation is to use OPC90 AOL and DOL blocks specifically designed to enable exception reporting of large quantities of data. These blocks are functionally equivalent to ABB Bailey Analog Output Loop (F.C. 30) and Digital Output Loop (F.C. 45) blocks.

Transferring Analog Data

Configure OPC90 AOL blocks to transfer analog (real number) data to the ABB Bailey system.



The screenshot shows the 'OPC90 Function Block Properties' dialog box for an AOL block. The 'Name' field is set to 'AOL_00001'. The 'Block Type' is 'AOL'. The 'Addressing' section shows 'Block: 1'. The 'Analog Output Parameters' section includes: 'Sig. Change: 0.1000 %', 'EU Code: 1', 'Init Value: 0', 'Zero: -100', 'Span: 200', 'Lo Alarm: -90', 'Hi Alarm: 90', 'Dev Lim: 1', and 'STN Type: Basic with SP'. The 'Digital Output Parameters' section includes: 'Initial Value: [dropdown]', 'Alarm State: [dropdown]', and 'Faceplate Type Code: 0'. The 'Exception Report Outputs' section includes: 'Max Time: 60 seconds'. The 'Poll Block Parameter' section includes: 'Poll Interval: 2000 milliseconds'.

Each AOL block is used to transfer an analog value to the ABB Bailey system. When configuring AOL blocks, start with block one and work your way up. Each AOL block must have a unique block number with respect to all other OPC90 AOL, DOL, ODD, OMSDD, ORCM, ORMC, ORMSC and OSTN blocks. OPC90

reserves the first 100 block numbers for outputs. If more than 100 outputs are required, simply increase the Device block "Max output block #" parameter. Note that this parameter can only be adjusted when no OPC clients are attached and OPC90 is not currently in monitor mode.

OPC clients must write values to the AOL.IN tag. OPC90 checks the value for a significant change (based on the configured zero, span and significant change settings in the above dialog). If the value has changed significantly, it is automatically transferred to the AOL.OUT parameter and sent to the ABB Bailey system. Note that OPC90 uses the alarm levels configured in the above dialog to set or reset the appropriate alarm bits that are also transferred with the exception reported value.

OPC90 AOL blocks are read into ABB Bailey controllers using Analog Input/Infinet, AI/I (F.C. 121) or Analog Input/Loop AI/L (F.C. 26) blocks. When configuring these blocks, the address of the data source must be defined. This address is the OPC90 CIU ring number, CIU node number, module two and block number assigned to the OPC90 AOL block.

OPC90 AOL blocks can also be displayed on ABB Bailey console graphics. They are read into the ABB Bailey console as analog tags. When configuring these analog tags use the OPC90 CIU ring number, CIU node number, module two and block number assigned to the OPC90 AOL block.

Transferring Digital Data

Configure OPC90 DOL blocks to transfer digital (discrete value) data to the ABB Bailey system.

Create a New OPC Function Block

Name: DOL_00002

Description:

Block Type: DOL

Addressing: Block: 2

Analog Output Parameters:

- Sig. Change: 1 %
- EU Code: 0
- Init Value: 0
- Zero: 0
- Span: 100
- Lo Alarm: 5
- Hi Alarm: 95

Digital Output Parameters:

- Initial Value: 0
- Alarm State: Alarm when 1
- Faceplate Type Code: 0

Exception Report Outputs:

- Max Time: 60 seconds

OK Cancel

Each DOL block is used to transfer a discrete value to the ABB Bailey system. When configuring DOL blocks, start with block one and work your way up. OPC90 reserves the first 100 block numbers for outputs. Each DOL block must have a unique block number with respect to all other OPC90 AOL, DOL, ODD, OMSDD, ORCM, ORMC, ORMSC and OSTN blocks. If more than 100 outputs are required, simply increase the Device block "Max output block #" parameter. Note that this parameter can only be adjusted when no OPC clients are attached and OPC90 is not currently in monitor mode.

OPC clients must write values to the DOL.IN tag. OPC90 checks the value for a change in state or alarm (based on the configured alarm state in the above dialog). If it has changed, the value is automatically transferred to the DOL.OUT parameter and sent to the ABB Bailey system. Note that OPC90 uses the alarm state configured in the above dialog to set or reset the alarm bit transferred with the exception reported value.

OPC90 DOL blocks are read into ABB Bailey controllers using Digital Input/Infinet, DI/I (F.C. 122) or Digital Input/Loop DI/L (F.C. 42) blocks. When configuring these blocks, the address of the data source must be defined. This address is the OPC90 CIU ring number, CIU node number, module two and block number assigned to the OPC90 DOL block.

OPC90 DOL blocks can also be displayed on ABB Bailey console graphics. They are read into the ABB Bailey console as digital tags. When configuring these digital tags use the OPC90 CIU ring number, CIU node number, module two and block number assigned to the OPC90 DOL block.