Communicating with Error Proof®

Device Objects

Device objects are software tools that aid in communicating with the world outside the Error Proof® program. The communication could be with another computer, with a PLC, or with another process on the same computer. Device objects may also provide additional capabilities within the Error Proof® program (ie Timer or Monitor devices).

Device objects are defined within the RF Screen configuration program and are configured by settings properties in property page screens. Any of the properties that can be set in the properties page can be set using script code as well. For example, to modify the polling interval for device "XYZ": *Device ("XYZ").Interval = 100*

Device object methods are accessed in script. Device objects also raise events (for instance - incoming serial port data). These events either execute script routines or populate fields in the form or both.

Five properties that all devices share :

Device_ID   *Device ID. Name of the device in the collection.*

Device_Index   *Index of device in the RF screen list.*

Description   *User entered description of the device.*

Device_Opened   *True if the device has been successfully opened*

DeviceLogEnabled   *If True, the device read and write operations are*
                              logged in the DeviceLog file.

Properties available in most devices:

Start_Delay   *Milliseconds to delay before beginning processing*
for the device.

Interval   *Polling interval for checking buffer values in milliseconds.*
                              This can apply either to an auto read situation or to a
                              manual read with a non-zero duration.

Duration   *Duration (milliseconds) that the device continues to attempt to*
                              retrieve a value during a read operation.

*AutoRead   Setting this property to True causes the device to raise an event
when an input is received. The code to be executed when the event is raised is entered in
the ReadEvent code section.*

*(**ReadLink**)   The ReadLink settings are provided to map AutoRead input directly to
display fields. Using this approach, coding a script event to respond
to the AutoRead may not be required.*

FieldID   Enter the field ID of the field to be updated by the AutoRead.

*Screen Number   Enter the screen number (1,2,3…) of the field to be updated by the
                              AutoRead.*

Commonly used Device Objects

COMM Device

The COMM device provides communication through the COM (serial) ports.

DDE Device (dynamic data exchange)

The DDE device provides a means to communicate with programs that support DDE.
Specifically, the RSLinx module provided by Allen Bradley supports DDE, so DDE can
be used to communicate with AB PLCs through RSLinx.

DirectIO Device

The Error Proof DirectIO device provides communication with the Koyo$^{®}$ Direct Logic
DL205 PLC box. This is an Ethernet enabled controller box that provides a convenient
means to communicate with various discrete inputs.

File Device

The File device reads and writes from standard text files. There are two sets of methods
– the standard Device_ methods (Device_Read, Device_Write, Device_ReadAsync, and
autoRead). Additionally, there are a set of File… methods and properties which map to
the Microsoft File System Object methods and properties.

FTP Device

The FTP device performs client FTP functions.

Monitor Device

The monitor device displays messages in a non-blocking fashion. The messages can be configured to display only for a specified time period and then to disappear.

OPC Device (OLE for Process Control)

The OPC device provides a means to communicate with OPC servers. OPC servers provide a common interface to PLCs from different manufacturers.
OPC servers would include RSLinx from Allen Bradley, and the Kepware and TOP Server OPC servers.

TCP/IP (Socket) Device

The TCP/IP Device is used to establish a TCP/IP socket connection. The device can perform either the client or server (listening) side of the TCP/IP connection.
The server TCP/IP connection accepts multiple client connections. While the TCP/IP client device is opened, it continually checks to see if the socket connection is still connected. If the connection has dropped, the device will attempt to reconnect.

MAPI device (E-mail)

The MAPI (Messaging Application Programming Interface) device provides a means to send e-mail using Microsoft MAPI enabled mail programs.

SMTP Device

The SMTP device is used to send e-mails using SMTP (Simple Mail Transfer Protocol). Attachments can also be sent using this method. The SMTP device support secure connections as well.

Timer Device

The timer device provides a means to execute a script repeatedly using a timer with a start delay, interval, and duration.