# DNP Points List and Implementation

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## DNP Points List for 6801 Controls

This instruction sheet provides Distributed Network Protocol (DNP) points and DNP implementation information for 6800 Series Automatic Switch Controls applied in an IntelliTeam® SG Automatic Restoration System. Points are listed separately for 6801 switch controls and for 6802/3 switch controls.

This "Points List" section is used with **SG6801Installer-7.6.x**. Other related software component version information is found on the *Setup>General>Revisions* screen.

The DNP master station should define the 6801 control with the following Status, Double-bit Status, Analog Input, Analog Output, Control, and Counter points:

| Point | Count |
|---|---|
| **Status** | 97 |
| **Double-bit Status** | 1 |
| **Analog Input** | 31 |
| **Analog Output** | 4 |
| **Control** | 34 |
| **Counter** | 15 |

The available DNP points are listed in Tables 1 through 6 on pages 3 through 18 in the same order they are presented for selection on the *Setup>Communication>Point Mapping* screens. 6801 Status, Analog Input, and Control points can be assigned to any SCADA DNP point index.

Point descriptions begin with a code number used to find the detailed definition in this instruction sheet. Refer to the "Communication Setup" section of S&C Instruction Sheet 1045-530, "6800 Series Automatic Switch Control: *Setup*." The code number for each point description is listed in S&C Instruction Sheet 1045-560 (this publication) and is not the SCADA point index.

For a specific SCADA system, typically all 6801 switch controls operate with the same DNP point index configuration.

Unless otherwise noted, each point is on if the condition is logically true or active.

| NOTICE |
| --- |
| The source address in IntelliLink® Setup Software is now 65432 instead of 1. |

| NOTICE |
| --- |
| When uploading a setpoint or DNP points map file from any version earlier than 7.6.x into a 6801/6802/6803 Automatic Switch Control with 7.6.x firmware, the **Code Description** and **Class** fields for DNP Status Points associated with the **SAT** feature (**SAT In Progress**, **SAT Switch Contacts Closed**, **SAT Switch Contacts Open**, **SAT Prohibited Locally** and **SAT Ignore Open Disconnect**) if mapped will display "End" and "Class 1." These must be manually converted to "Reserved" and "No Event" respectively so the SCADA system receives static data for any points mapped beyond them. |

These 6801 Automatic Switch Control features have multiple status points:

- **Open or Close**: 1-3
- **IntelliTeam SG System Operation**: 18-43
- **Netlist Information:** 50-53

**Table 1. 6801 Status Points**

| Code # | Name—Definition |
|---|---|
| 1 | **Switch 1 Open**—On when contact status is **Open**. Otherwise, off. |
| 2 | **Switch 1 Closed**—On when contact status is **Closed**. Otherwise, off. |
| 3 | **Switch 1 Disabled**—On when switch operation is in the **Disabled** state. This is a summary point that reports for any of these conditions: the **Battery Bad** status point (Status Point 8) is on, the **Visual Open Contact Status** status point (Status Point 26) is on, or the **Hot Line Tag Active** status point (Status Point 45) is on. Otherwise, off. |
| 4 | **Automatic Operation Enabled**—On when the **Automatic Operation** mode is enabled using either the faceplate switch or a SCADA command. Otherwise, off. |
| 5 | **SCADA Control Enabled**—On when the SCADA CONTROL faceplate switch is set to the **Remote** state. Otherwise, off. |
| 6 | **Overcurrent Fault Detected, Switch 1**—On when the fault-detection circuitry registers an **Overcurrent Fault** condition. Off when cleared by the **Fault Indicator Reset Strategy** setting configured on the *Setup>General>Fault Detection* screen. Also off when manually cleared with the **Clear Faults** command in the LCD menu, the **Clear Faults** button on the *Setup>Site Related* screen, the faceplate/screenset pre-assigned USER COMMAND button, or the **Clear any outstanding Overcurrent Fault** condition control point. The **Overcurrent Fault** condition also clears when the switch control is reinitialized using IntelliLink Setup Software or a SCADA reset command. |
| 7 | **Sectionalizer Tripped, Switch 1**—On when any **Automatic Control** function opens the switch. The point is cleared when the switch is closed for any reason. It is also cleared on reinitialization of the switch control using the setup software or when the SCADA CONTROL switch state is changed. Otherwise, off. |
| 8 | **Battery Bad**—On when battery replacement is required, unless the switch control is operating or has recently been operating on battery power. Otherwise, off. |
| 9 | **Maintenance Required**—On when some form of maintenance (other than battery replacement) is required. It is set when the battery charger stops functioning because of overvoltage or when the switch open/close contacts are not mutually exclusive. This is a summary point. An inspection of other status points can determine the exact cause. Otherwise, off. |
| 10 | **Open/Close Indication is Inconsistent, Switch 1**—On when both contacts are closed or open. Otherwise, off. |
| 11 | **Ac Control Power Present**—On when ac control power is supplied to the control. Otherwise, off. |
| 12 | **Failure Override Set**—On when a SCADA operator executes the **Failure Override Latch-On** command to let the switch be operated even if the battery is bad. The point remains on until the override is disabled using the **Failure Override Latch-Off** command. Also, the point will go off and the **Failure Override** command will become disabled after a 15-minute timeout if it was not already turned off by the **Latch-Off** command. Otherwise, off. |

*TABLE CONTINUED* ▶

**Table 1. 6801 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 13 | **Battery System Low**—On when battery voltage is low, but the switch will operate. Otherwise, off. |
| 14 | **Battery Charger Problem**—On when the charging voltage applied to the battery system is too high and the charger is turned off. Otherwise, off. |
| 15 | **Battery Test in Progress**—On when the switch control is automatically testing the batteries at periodic intervals. Battery voltage fluctuates during the test. Otherwise, off. |
| 16 | **Cabinet Door Open**—On when the enclosure door is open. When the door is closed this point is off and all power to the faceplate LEDs is turned off. Otherwise, off. |
| 17 | **Temperature Sensor Bad**—On when the temperature sensor is reading out of range. Temperature-related correction factors will not be accurate when the sensor is incorrect. Otherwise, off. |
| 18 | **Phase A Overcurrent Fault, Switch 1**—On when the fault-detection circuitry registers an **Overcurrent Fault** condition. Off when cleared by the **Fault Indicator Reset Strategy** setting configured on the *Setup>General>Fault Detection* screen. Also off when manually cleared with the **Clear Faults** command in the LCD menu, the **Clear Faults** button on the *Setup>Site Related* screen, the faceplate/screenset pre-assigned USER COMMAND button, or the **Clear any outstanding Overcurrent Fault** condition control point. The **Overcurrent Fault** condition also clears when the switch control is reinitialized using IntelliLink Setup Software or a SCADA reset command. |
| 19 | **Phase B Overcurrent Fault, Switch 1**—As noted in Status Point 18, for Phase B, Switch 1. Otherwise, off. |
| 20 | **Phase C Overcurrent Fault, Switch 1**—As noted in Status Point 18, for Phase C, Switch 1. Otherwise, off. |
| 21 | **Overcurrent Ground Fault, Switch 1**—As noted in Status Point 18, for ground, Switch 1. Otherwise, off. |
| 22 | **Loss of Voltage on Any Configured Voltage Channel**—On when a voltage sensor shows a **Loss of Voltage** status. Otherwise, off. |
| 23 | **Phase A Reverse Current, Switch 1**—On when the current on Phase A is flowing in the direction opposite to the **Normal Direction** setting configured in the switch control. The switch control identifies a **Reverse Current** condition when the voltage-current phase angle deviates more than 90 degrees from the value set during installation for the **Unity Power Factor** setting. Otherwise, off. |
| 24 | **Phase B Reverse Current, Switch 1**—As noted in Status Point 23, for Phase B, Switch 1. Otherwise, off. |
| 25 | **Phase C Reverse Current, Switch 1**—As noted in Status Point 23, for Phase C, Switch 1. Otherwise, off. |
| 26 | **Visible Open Contact Status**—For a Scada-Mate® Switching System, set when all of the following are true:<br>• The visible open auxiliary contacts are present.<br>• The **Switch Visible Disconnect Contacts** setting is set "Present" on the *Setup>Sensor Configuration* screen.<br>• The visible disconnect is physically open. |

**Table 1. 6801 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 27 | **Switch Control Not Transfer Ready—**Active only for the reporting switch control. On when a switch operation is not consistent with the expected team operation (i.e. incomplete or manual switch operation). This point is also on if any of these status points are on: the **Switch Disabled** status point (Status Point 3), the **Automatic Operation Disabled** status point (Status Point 4), or the **Switch Position Inconsistent** status point (Status Point 10). This point is used in conjunction with the **Not All Teams Transfer Ready** status point (Status Point 28) to identify the specific team member where a problem exists. Otherwise, off. |
| 28 | **Not All Teams Transfer Ready—**On when any teams in which this switch control participates are the **Not Transfer Ready** status point (Status Point 27). This may be because of an individual team member condition, team-wide conditions such as isolating a fault, team configuration or coordination problems, the **Restoration Prohibited** status point (Status Point 32), or the **Team Logic** setting is set to the **Disabled** state on the *Team>Setup* screen. If Status Point 27 is on in one team member, Status Point 28 is also on in the other team members. Otherwise, off. <br> **Note:** Unless otherwise prohibited, team member controls revert to standalone sectionalizing logic when the **Not Transfer Ready** status point (this status point) is active in all teams in which that control participates, whether because of local conditions or conditions at adjacent team members. |
| 29 | **Automatic Transfer Operation in Progress—**On when any team defined in the control is actively performing an **Automatic Transfer** operation. Otherwise, off. |
| 30 | **Automatic Return to Normal Operation in Progress—**On when any team defined in the control is actively performing a **Return to Normal** operation. Otherwise, off. |
| 31 | **Setup Data Revision—**On when the configuration entries for any enabled team defined in the control are modified. It remains on until the **Team Setup** parameter on the *Setup>Team* screen has been toggled from **Stopped** mode back to **Running** mode for any team where the configuration entries have been changed. Otherwise, off. |
| 32 | **Restoration Prohibited by SCADA—**On when the **Prohibit Load Restoration Latch On** command (Control Point 12) is received, the **IntelliTeam SG Restoration** feature is disabled using the *IntelliTeam SG>Team Summary* screen, or the **Automatic Restoration** mode is set to **Prohibited** state on the front panel. When this point is on, no switch in any team in which this switch control participates will be allowed to automatically close, preventing automatic load restoration. This point is off when the **Prohibit Load Restoration Latch Off** command (Control Point 12) is received, the **IntelliTeam SG Restoration** feature is enabled using the *IntelliTeam SG>Team Summary* screen, or the **Automatic Restoration** mode is set to "Enabled" on the front panel. Otherwise, off. |
| 33 | **Restoration Prohibited by Team Timer—**On when the **Team Transfer Process** timer expires in this control, resulting in the **Prohibit Restoration** mode being enabled for at least one of the teams in which this control participates. Only the team for which this timer has expired is prohibited from further automatic load restoration. This point is cleared when the **Prohibit Load Restoration Latch Off** command (Control Point 12) is received, the **IntelliTeam SG Restoration** mode is enabled using the *IntelliTeam SG>Team Summary* screen, or the **Automatic Restoration** mode is set to "Enabled" on the front panel. Otherwise, off. |
| 34 | **Source Loading Data is Active—**On when the **Real-time Feeder Loading** logic is active and in use. This point does not indicate whether the control is using actual real-time feeder-loading data received from a DNP master or using the **Default Source Segment Loading** setting. Otherwise, off. |

*TABLE CONTINUED* ▶

**Table 1. 6801 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 35 | **Real-Time Load Data May be Old or Abnormal—**On when the received **DNP Analog Output** value is less than the real-time three-phase load as sensed by the switch. It is also set if the real-time feeder-loading data have not updated within the configured time interval. Off when new data are received and the analog value is equal to or greater than the local measured load. Otherwise, off. |
| 36 | **Team 1 Ready To Transfer—**On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 37 | **Team 2 Ready To Transfer—**On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 38 | **Team 3 Ready To Transfer—**On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 39 | **Team 4 Ready To Transfer—**On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 40 | **Team 5 Ready To Transfer—**On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 41 | **Team 6 Ready To Transfer—**On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 42 | **Team 7 Ready To Transfer—**On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 43 | **Team 8 Ready To Transfer—**On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 44 | **Loss of Voltage on Any Phase, Switch 1—**On when voltage is off on any phase. Otherwise, off. |
| 45 | **Hot Line Tag Active—**On when the **Hot Line Tag** state is active. Off when the **Hot Line Tag** state is removed. The **Hot Line Tag** state can only be removed by the same method used to set it. |
| 46 | **Overcurrent Fault on Any Phase, Switch 1—**On when fault current is sensed on any phase. Otherwise, off. |
| 47 | **Switch 1 Tripped to Lockout—**On when Switch 1 is in the **Locked Out** state because of an event. The IntelliTeam system may begin the reconfiguration process. Off when the **Close Switch 1** command is given. Otherwise, off. |
| 48 | **Manual Operation Detected for Switch 1—**On when the IntelliTeam system senses that the switch has been operated manually. Otherwise, off. |
| 49 | **Switch 1 Status Open—**Indicates the IntelliTeam system has properly received the switch status. This point should always agree with the **Switch 1 Open** status point (Status Point 1). |
| 50 | **Netlist Missing Runners—**On when the received runner count doesn't match the expected runner count. The **Rapid Self Healing** feature is disabled as long as this is the case. Otherwise, off. |
| 51 | **Netlist Settings Propagation—**On when the local control is receiving Netlist records from either a download or through propagation. If this is a Netlist download, the status point remains on until all expected runners arrive with the new Netlist. Otherwise, off. |

**Table 1. 6801 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 52 | **Netlist Settings Accepted—**On when a new Netlist has been successfully validated. Off when a Netlist is being downloaded or propagated. Off if the user has changed any team settings so they are different from the screenset. Otherwise, off. |
| 53 | **Netlist Propagation Enabled—**On when the IntelliLink software screenset or SCADA enables Netlist propagation. Otherwise, off. (Starting with version 7.1.x, the **Netlist Propagation** mode is always in the **Enabled** state; therefore, this status point is always on.) |
| 54 | **IntelliTeam II Mode Active—**On when the IntelliTeam® II Automatic Restoration System software is in use. Otherwise, off. |
| 55 | **IT Out of Normal Switch State—**On when the switch is not in the **Normally Open** or **Normally Closed** state for the IntelliTeam system. Off when the switch is in the **Normally Open** or **Normally Closed** state for the IntelliTeam system. Otherwise, off. |
| 56 | **Switch 1 PLI Open—**On when the switch has been opened by the **Phase-Loss Isolation (PLI)** logic. Otherwise, off. |
| 57 | **Ac Power Not Present—**On when ac power is not available to the control. Otherwise, off. |
| 58 | **Battery Disconnected—**On when battery is disconnected. Otherwise, off. |
| 59 | Reserved. |
| 60 | Reserved. |
| 61 | Reserved. |
| 62 | Reserved. |
| 63 | Reserved. |
| 64 | **Wi-Fi Is Connected—**On when a Wi-Fi connection to the control is established. Otherwise, off. |
| 65 | **Wi-Fi Intrusion Alarm—**On when the Wi-Fi module reports a replay attack or improper authentication. Turned off by the user with **Clear Wi-Fi Intrusion Alarm** (Control Point 18). |
| 66 | **Wi-Fi Disabled by SCADA—**On when the **Disable Wi-Fi command** (Control Point 15) is received. Off when the **Enable Wi-Fi** command (Control Point 16) is received. The **Enable/Disable Wi-Fi** command (Control Point 14) toggles Wi-Fi communication on and off; on when Wi-Fi is disabled, and off when Wi-Fi is enabled. Otherwise, off. |
| 67 | **Warning—**On when any warning is active. Otherwise, off. |
| 68 | **Alarm—**On when any alarm is active. Otherwise, off. |
| 69 | **Error—**On when any error is active. Turned off by a user action to clear the error. |
| 70 | **Phase A Loss of Voltage—**On when Phase A voltage falls below the configured **Loss of Voltage Threshold** setting. Otherwise, off. |
| 71 | **Phase B Loss of Voltage—**Same as noted in Status Point 70, for Phase B. Otherwise, off. |
| 72 | **Phase C Loss of Voltage—**Same as noted in Status Point 70, for Phase C. Otherwise, off. |

*TABLE CONTINUED* ▶

**Table 1. 6801 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 73 | **Local Switch is Closed Loop Center—**On when this switch control is the configured closed-loop center-point switch. Otherwise, off. |
| 74 | **Comm System has Poor Quality—**On when the **Bad Health** alarm is active on the *Link Keep Alive Tests* screen and/or the *Diagnostic Communications Tests* screen. Otherwise, off. |
| 75 | **Bad Voltage Sensor—**On when the **Detect Faulty Voltage Sensor** feature is set to the **Yes** state on the *Setup>General>Site Related* screen. For a closed switch, a single phase indicates a **Loss of Voltage** condition with greater than 3 amperes present. |
| 76 | **Disregard First Overcurrent Active—**On when the **Disregard First Overcurrent** setpoint is set to the **Yes** state on the *Setup>Restoration>IntelliTeam SG* screen or the **Enable DIFF** control point has been received. Otherwise, off. |
| 77 | **IntelliLink Intrusion—**On when an IntelliLink software log-in attempt failed three times, after which all users are locked out for 15 minutes. Otherwise, off. |
| 78 | **IntelliLink Session Active—**On when user is presently logged in to the control. Otherwise, off. |
| 79 | **Not all Teams Xfer Ready for X sec—**On when any team in which this control is a member is in the **Out of Ready** state for a time exceeding the **Not All Teams Transfer Ready for X Seconds** timer. The status point becomes inactive when a new valid coach arives and the team goes back into the **Ready** state. |
| 80 | **Prohibit Restoration Remotely Transmitted—**On when the local device sends the **Prohibit Restoration SCADA** command to remote devices in the Remote Prohibit Restoration Transmit List table because of an active **Hot Line Tag**, **Frequency Trip**, or **Manual Operation** state, or when a **Prohibit Restoration** state is activated via a front panel, IntelliLink software screen, or SCADA command. The status point is cleared when the device receives a **Clear Remote Prohibit Restoration Status** command (Control Point 24). Status Point = 0x1F00. |
| 81 | **Enable Restoration Remotely Transmitted—**On when the local device sends the **Clear Remote Prohibit Restoration Status** command to remote devices in the Remote Prohibit Restoration Transmit List table. This event can be triggered by executing a **Clear Remote Prohibit Restoration Status** command via IntelliLink or receiving an **IT Clear PR to all Devices** command from SCADA. The status point is cleared when the device receives the **Clear Remote Enable Restoration Status** command (Control Point 25). Status Point = 0x1F01. |
| 82 | **User-Defined Input 1—**On when the user-defined input at J20-1 has a change from **Inactive** to **Active** state or is being held in the **Active** state pending an acknowledgement. When configured to execute a command such as the **Prohibit Restoration** command, the **DNP** control point or a front panel command can execute an **Enable Restoration** command to cancel the **Prohibit Restoration** command. A subsequent user-defined input change from an **Inactive** to an **Active** state would then re-execute the **Prohibit Restoration** command. (Range: Disable Automatic Operation, Prohibit Restoration, Block Close Operations, Block Open and Close Operations, and None; Default: None) |

**Table 1. 6801 Status Points—Continued**

| Code # | Name—Definition |
|--------|-----------------|
| 83 | **User-Defined Input 2—**On when the user-defined input at J20-2 has a change from **Inactive** to **Active** state or is being held in the **Active** state pending an acknowledgement. When configured to execute a command such as the **Prohibit Restoration** command, the **DNP** control point or a front panel command can execute an **Enable Restoration** command to cancel the **Prohibit Restoration** command. A subsequent user-defined input change from an **Inactive** to an **Active** state would then re-execute the **Prohibit Restoration** command. (Range: Disable Automatic Operation, Prohibit Restoration, Block Close Operations, Block Open and Close Operations, and None; Default: None) |
| 84 | **User-Defined Input 3—**On when the user-defined input at J20-3 has a change from **Inactive** to **Active** state or is being held in the **Active** state pending an acknowledgement. When configured to execute a command such as the **Prohibit Restoration** command, the **DNP** control point or a front panel command can execute an **Enable Restoration** command to cancel the **Prohibit Restoration** command. A subsequent user-defined input change from an **Inactive** to an **Active** state would then re-execute the **Prohibit Restoration** command. (Range: Disable Automatic Operation, Prohibit Restoration, Block Close Operations, Block Open and Close Operations, and None; Default: None) |
| 85 | **Transfer Trip Enabled—**On when the **Transfer Trip** mode is enabled to allow the local device to send an **Initiate Transfer Trip** command to all non-zero RTU addresses in the Remote Transfer Trip Transmit List table after an **Open** and **Lockout** state because of a protection or automatic sectionalizing event. Status Point = 0x1F02. |
| 86 | **Direction 1 Current Flow—**On when the device is properly configured and power is flowing through the circuit in direction 1. Status Point = 0x167. |
| 87 | **Direction 2 Current Flow—**On when the device is configured incorrectly or circuit conditions cause direction 2 current flow, possibly because of distributed generation on the circuit. Status Point = 0x168. |
| 88 | **Transfer Trip Prohibit Restoration Initiated—**On when an **Initiate Transfer Trip** control point has been received and executed. Off when the **Prohibit Restoration** mode is no longer active and the control will be allowed to close by an automatic or manual operation. **Note:** This status point only applies to devices not teamed with a distributed generation source. When teamed with distributed generation, this status point will not activate, even if a **Transfer Trip** command is initiated and executed. Status Point = 0x021C. |
| 89 | **Remote Prohibit Restoration Enabled from Local—**On when the **Enable Remote Transmit from Local P.R.** setting is enabled on the local device. Status Point = 0x1F03. |
| 90 | **Remote Prohibit Restoration Enabled from SCADA—**On when the **Enable Remote Transmit from SCADA P.R.** setting is enabled on the local device with a SCADA **Latch-On** command. Status Point = 0x1F04. |
| 91 | **DG Reconnect Delay Terminated—**The **DG Reconnect Delay** timer is aborted because of an abnormal system condition. The **Transfer Trip Prohibit Restoration** mode remains active on the device and reconnecting the distributed generation source back on the grid must be performed manually. |
| 92 | **Switch 1 Close Operation Blocked—**On when the User-Defined Input is also set to block operation (block **Close** or block both **Open** and **Close** operations) and they go active. The status will then clear when the **User-Defined Input** status points go inactive. |

*TABLE CONTINUED* ▶

**Table 1. 6801 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 93 | **Switch 1 Open Operation Blocked**—On when the User-Defined Input is also set to block operation (block **Open** or block both **Open** and **Close** operations) and they go active. The status will then clear when the **User-Defined Input** status points go inactive. |
| 94 | **Transfer Declined Excess Load**—Applies to all active teams configured within a control. Active when a transfer attempt has been declined because of load within the team(s) to be restored that exceeds the present capacity of the alternate source. Otherwise, off if another reason for the declined transfer occurs at the same control, if the transfer stops because of a **Prohibit Restoration** or other error condition at any team member of this team, if the transfer succeeds at any team member of this team, or 5 minutes passes at this control with no further transfer declined conditions as a result of excessive loading. |
| 95 | **Transfer Declined Segment Limit**—Applies to all active teams configured within a control. Active when a transfer attempt has been declined because of the number of teams being requested for restoration exceeding the line segment limit associated with the alternate source. Otherwise, off if another reason for the declined transfer occurs at the same control, if the transfer stops because of a **Prohibit Restoration** or other error condition at any team member of this team, if the transfer succeeds at any team member of this team, or 5 minutes passes at this control with no further transfer declined conditions as a result of the line segment limit. |
| 96 | **System Voltage Unrecognized**—Active when the local system voltage is not recognized as a supported system voltage. It remains active until the issue is resolved through correct configuration of the system voltage setting. |
| 97 | **Xfer Trip PR Initiated (DG POI)**—Active when the DG POI device has received a **Transfer Trip** message and has initiated **Prohibit Restoration** state on the POI IntelliTeam system device. Otherwise, off when the DG POI device is in any other state. |
| 98 | **NET: Missing Runners in Adjacent FeederNet**—Active when a missing runner condition exists in any adjacent FeederNet in an IntelliTeam system. Otherwise, off if there are no missing runner conditions in any adjacent FeederNet in an IntelliTeam system. |
| 99 | **Transfer Trip Sent**—Active when a device sends a **Remote Transfer Trip** message via the Remote Transmit list after it has opened and locked out because of a protection or automatic sectionalizing event. It is cleared when the device is closed and in the **Ready** state. |
| 100 | **PR Due To Load Shed**—On when a Load Shedding event occurs at a team with a **Load Priority** setting configured in the do-not-restore range 20 to 25, activating a **Prohibit Restoration** state for that team. This point will be off when the source circuit returns to normal allowing the **PR Due To Load Shed** status point to clear, or when the **Prohibit Restoration** state is cleared by local command or SCADA command. |
| 101 | **GPS Not Active Time Source**—On when the **GPS** feature is not the active time source. Otherwise, off. |
| 102 | **Shots To Lockout Status Switch 1**—On when **Shots to Lockout** feature for switch 1 is active. Otherwise, off. |

**Table 2. 6801 Double-bit Status Points**

| Code # | Name—Definition | |
|---|---|---|
| 1 | **Switch 1—**The value of the double-bit input describes the present switch state. | |
| | **State Value** | **Description** |
| | 0 | Travel or transition |
| | 1 | Switch is open |
| | 2 | Switch is closed |
| | 3 | Indeterminate |

**Table 3. 6801 Analog Input Points**

| Code # | Name—Definition |
|---|---|
| 1 | **90% Voltage Reference Standard**—This is a constant representing 90% of the full scale value. |
| 2 | **0% Voltage Reference Standard**—This is a constant representing the zero value. |
| 3 | **Neutral Current of Switch 1**—Taken as the vector sum of the phase currents on Phases A, B, and C. Current is measured using true RMS techniques. Each count equals one ampere. |
| 4 | **Current, Phase A Switch 1**—Single-phase true RMS current measured on Phase A. Each count equals one ampere. |
| 5 | **Current, Phase B Switch 1**—Single-phase true RMS current measured on Phase B. Each count equals one ampere. |
| 6 | **Current, Phase C Switch 1**—Single-phase true RMS current measured on Phase C. Each count equals one ampere. |
| 7 | **Voltage, Phase A Switch 1**—Single-phase voltage measured on Phase A of Switch 1. Voltage is measured using true RMS techniques and scaled to yield a nominal value of 120 Vac. Configuration of the switch control at installation provides the scaling factors such as voltage transformer turn ratio, etc. In cases where loads are connected in a delta (phase-to-phase) configuration, the switch control sensor conditioning module is jumpered to yield phase-to-phase voltage readings. Voltage is reported in units of one sensor count equals 0.1 Vac RMS. |
| 8 | **Voltage, Phase B Switch 1**—Phase-to-ground or phase-to-phase voltage (depending on setup) measured on Pole B, Switch 1. Each count equals 0.1 Vac RMS. |
| 9 | **Voltage, Phase C Switch 1**—Phase-to-ground or phase-to-phase voltage (depending on setup) measured on Pole C, Switch 1. Each count equals 0.1 Vac RMS. |
| 10 | **Phase Angle, on Phase A Switch 1**—Each count equals 0.125 degrees. |
| 11 | **Phase Angle, on Phase B Switch 1**—Each count equals 0.125 degrees. |
| 12 | **Phase Angle, on Phase C Switch 1**—Each count equals 0.125 degrees. |
| 13 | **Single-Phase kvars, Phase A Switch 1**—Kvars (volt-amperes, reactive) are calculated from single-phase true RMS voltage and current sensor values and the respective voltage-current phase angle. Each count equals one kvar. |
| 14 | **Single-Phase kvars, Phase B Switch 1**—As noted in Analog Input Point 13, for Phase B. |
| 15 | **Single-Phase kvars, Phase C Switch 1**—As noted in Analog Input Point 13, for Phase C. |
| 16 | **Cabinet Temperature**—Reported in units of degrees Fahrenheit. Each count equals one degree. |
| 17 | **Battery Voltage**—Nominally 24 Vdc. This value is updated only during battery testing when ac power is on. This value is continuously updated when ac power is off. One count equals 0.035 Vdc. |
| 18 | **Single-Phase kW, Phase A Switch 1**—Calculated using instantaneous voltage and current and the respective voltage-current phase angle. Each count equals one kW. |
| 19 | **Single-Phase kW, Phase B Switch 1**—Calculated using instantaneous voltage and current and the respective voltage-current phase angle. Each count equals one kW. |

*TABLE CONTINUED* ▶

**Table 3. 6801 Analog Input Points—Continued**

| Code # | Name—Definition |
|---|---|
| 20 | **Single-Phase kW, Phase C Switch 1—**Calculated using instantaneous voltage and current and the respective voltage-current phase angle. Each count equals one kW. |
| 21 | **Single-Phase kVA Phase A Switch 1—**Each count equals one kVA. |
| 22 | **Single-Phase kVA Phase B Switch 1—**Each count equals one kVA. |
| 23 | **Single-Phase kVA Phase C Switch 1—**Each count equals one kVA. |
| 24 | **Total kvars Switch 1—**Sum of kvar Phase A, kvar Phase B, and kvar Phase C. Each count equals one kvar. |
| 25 | **Total kW Switch 1—**Sum of kW Phase A, kW Phase B, and kW Phase C. Each count equals one kW. |
| 26 | **Total kVA Switch 1—**Sum of kVA Phase A, kVA Phase B, and kVA Phase C. Each count equals one kVA. |
| 27 | **Average Three-Phase Current Switch 1—**Average of Phase A current, Phase B current, and Phase C current. Each count equals one ampere. |
| 28 | **Fault Magnitude, Pole 1 Switch 1—**Single-phase peak RMS current measured on Phase A that is over the **Phase Fault Detection Current Level** setting. |
| 29 | **Fault Magnitude, Pole 2 Switch 1—**Single-phase peak RMS current measured on Phase B that is over the **Phase Fault Detection Current Level** setting. |
| 30 | **Fault Magnitude, Pole 3 Switch 1—**Single-phase peak RMS current measured on Phase C that is over the **Phase Fault Detection Current Level** setting. |
| 31 | **Fault Magnitude, Neutral Switch 1—**Taken as the vector sum of the phase currents on Phases A, B, and C, that is over the **Ground Fault Detection Current Level** setting. |

**Table 4. 6801 Analog Output Points**

| Code # | Name—Definition |
|---|---|
| 1 | **Application Layer Confirmation Retry Time**—Time (100 to 65,535 ms.) that the switch control will wait for an application layer confirmation to an event response message before resending the request for confirmation.① |
| 2 | **Application Layer Confirmation Retry Count**—Number of times (0 to 10) the switch control will send an event response message if a confirmation is not received. This number includes the initial response. The retry count is only in effect when the confirmation process is enabled. |
| 3 | **Control Point Select Time**—During a **Select-Before-Operate** procedure, the time (10 to 1000 tenths of a second) allowed to elapse between receiving the **Select** function for a point and receiving the **Operate** function for it. If an **Operate** function is not received within this period, the point is de-selected; another **Select** function is required before the point will operate. |
| 4 | **Real-Time Feeder Loading**—Total averaged three-phase feeder loading (10 amperes to maximum source capacity minus 10 amperes), measured at the source breaker. This value is used to determine whether the load can be transferred to another source. Each count equals one ampere. |

① Set and read the **Application Layer Confirmation Retry Time** setpoint based on the required range:

| Application Layer Confirmation Retry Time Range | Set Analog Output Value | Read Analog Output Value |
|---|---|---|
| 100 to 32,737 ms. | Group 41 variation 2 (16-bit) | Group 40 variation 2 (16-bit with flag) |
| 32,738 to 65,535 ms. | Group 41 variation 1 (32-bit) | Group 40 variation 1 (32-bit with flag) |

Class 0 will always report group 40 variation 2 and will report negative value for 32-bit values. Use group 40 variation 1 to read values between 32,738 to 65,535 ms.

The object type must be configured on the *Setup>Point Mapping>Controls* screen for each control point when it is mapped. Only the configured object type will be accepted and acted on for that control point. Some control points will not work with all object types. The available and default object types are listed for each control point.

Control points related to **Open** or **Close** commands: 2 and 3.

Control points related to the IntelliTeam SG system: 10 and 12.

**Table 5. 6801 Control Points**

| Code # | Name—Definition |
|---|---|
| 1 | **Start Battery Test—SCADA—**This command may be issued using either the **Select/Operate** sequence, the **Direct Operate** function, or the **Direct Operate without Ack** function. Both **Trip** and **Close** commands are valid for this point. If ac power is available, the battery charger is disconnected for several minutes during the test. If ac power is not available, a brief impedance test is used to evaluate battery condition. |
| 2 | **Open or Close Switch 1—SCADA—**This command opens or closes the switch. |
| 3 | **Issue the Shots-to-Lockout command to Switch 1—**Only a **Close** operation is valid for this point. This command is ignored and returns an error if the switch is not open or the **Automatic Operation** mode is not enabled. |
| | **Note:** (Codes 2–3): These commands are ignored and return an error if a **Bad Battery** condition is active and the **Failure Override** command has not been issued or the external LOCAL/REMOTE switch in the motor operator cabinet associated with the intended position is set to the **Local** position. These commands are ignored if the LOCAL/REMOTE switch is not in the **Remote** position. |
| 4 | **Clear any outstanding Overcurrent Fault conditions present—**This command must be issued using a **Pulse On** request. The fault condition otherwise remains active until automatically cleared by the **Fault Indicator Reset Strategy** option selected on the *Setup>General>Fault Detection* screen. |
| 5 | **Enable/Disable Failure Override status—**This command must be issued using the **Latch On/Off** command in the control relay output block. This allows **Open** and **Close** commands to be processed even if the **Switch Not Ready** condition is active. |
| 6 | **Enable/Disable Automatic Operation—**This command must be issued using the **Latch On/Off** command in the control relay output block. In **Automatic** mode, the switch control automatically opens the switch if a preconfigured recloser sequence is recognized after a detected fault. <br>**Note:** The **Automatic Operation** mode is not disabled when the faceplate REMOTE/LOCAL switch is set to **Local** operation. |
| 7 | **Enable/Disable Automatic Operation, Switch 1—**This command must be issued using the **Latch On/Off** command in the control relay output block. As noted in Control Point 6. |
| 8 | **Enable/Disable Hot Line Tag, for all switches, SCADA—**Enables or disables the **Hot Line Tag** mode. The **Enable** command may be issued using a **Latch-On** or **Pulse-On** command. The **Disable** command may be issued using the **Latch-Off** or **Pulse-Off** command. "Latch" is the default object type. The **Hot Line Tag** mode can only be removed by the same method used to set it. |
| 9 | **Enable/Disable Hot Line Tag, for Switch 1, SCADA—**As noted in Control Point 8. |
| 10 | **IntelliTeam Clear Manual Operation status—SCADA—**A **Pulse-On** or **Latch-On** command is used to clear a manual operation. This allows the IntelliTeam system to return to the **Ready** state, provided the switches are in their IntelliTeam **Normally Open** or **Normally Closed** states. |

**Table 5. 6801 Control Points—Continued**

| Code # | Name—Definition |
|---|---|
| 11 | **Set Alternate/Regular Reclose Counts**—Reserved for future use. |
| 12 | **IntelliTeam Prohibit Restoration**—This command must be issued using the **Latch On/Off** request in the control relay output block. When in the **Latched** state, this command prevents the local switch and any switches in any team in which this switch control participates from automatically closing to restore load under any circumstances. |
| 13 | **Netlist Propagation Enable/Disable**—In the **Enabled** state, allows new Netlist requests and Netlist transmissions. In the **Disabled** state, multiple downloads of a Netlist can be sent to a local control. (Starting with version 7.1.x, the **Netlist Propagation** mode is always in the **Enabled** state; therefore, this control point does not operate.) |
| 14 | **Enable/Disable Wi-Fi**—This command enables or disables local Wi-Fi communication. |
| 15 | **Wi-Fi Disable**—This command disables local Wi-Fi communication. |
| 16 | **Wi-Fi Enable**—This command enables local Wi-Fi communication. |
| 17 | **Wi-Fi Test**—This command activates the Wi-Fi beacon transmitter for troubleshooting purposes. |
| 18 | **Clear Wi-Fi Intrusion Alarm**—This command clears an active **Wi-Fi Intrusion** alarm. |
| 19 | **Clear Errors**—This command clears all error flags. Alarms and warnings are not affected. |
| 20 | **Clear Warnings**—This command clears all warning flags. Errors and alarms are not affected. The **Active Warnings** function will reassert in approximately one second. |
| 21 | **Clear Alarms**—This command clears all alarm flags. Errors and warnings are not affected. The **Active Alarms** function will reassert in approximately one second. |
| 22 | **Clear IntelliLink Intrusion**—This command clears the **IntelliLink Software Intrusion** alarm. |
| 23 | **Enable/Disable DIFF**—This command enables or disables the **Disregard First Overcurrent** mode. |
| 24 | **Clear Remote Prohibit Restoration Status**—This command clears the **Prohibit Restoration Remotely Transmitted** status point (Status Point 80). Control point = 0x1F00. |
| 25 | **Clear Remote Enable Restoration Status**—This command clears the **Enable Restoration Remotely Transmitted** status point (Status Point 81). Control point = 0x1F01. |
| 26 | **Remote Transmit Enable Restoration**—When received, the device clears the **Prohibit Restoration** mode locally (only if **Hot Line Tag**, **Frequency Trip**, or **Manual Operation** modes are not active) and then sends a command to **Clear Prohibit Restoration** to all devices in the Remote Prohibit Restoration Transmit List table. The **Enable Remote Transmit from SCADA P.R.** setting must be enabled to perform this action. Control point = 0x1F02. |
| 27 | **Initiate Transfer Trip**—This command sets the **Transfer Trip** mode on a single device. The device issues a command to **Open the Switch in Automatic** mode (not a manual operation) and verifies the operation. If an **Open** state is confirmed, the device then activates the **Prohibit Restoration** mode on the team facing the distributed generation source (unless it's a distributed generation team) to prevent restoration of that line segment. For the **Prohibit Restoration** mode to be set, the receiving device must be an S&C switch control that is part of an IntelliTeam SG automatic restoration system. SW1 = 0x202, SW2 = 0x203. |

**Table 5. 6801 Control Points—Continued**

| Code # | Name—Definition |
|--------|-----------------|
| 28 | **Acknowledge User Defined Input 1—**When User-Defined Input 1 has been configured to require a SCADA acknowledgement it will be held active after the physical input state has gone inactive until this control point is received. |
| 29 | **Acknowledge User Defined Input 2—**When User-Defined Input 2 has been configured to require a SCADA acknowledgement it will be held active after the physical input state has gone inactive until this control point is received. |
| 30 | **Acknowledge User Defined Input 3—**When User-Defined Input 3 has been configured to require a SCADA acknowledgement it will be held active after the physical input state has gone inactive until this control point is received. |
| 31 | **Enable/Disable Transfer Trip—**When enabled, the local device sends an **Initiate Transfer Trip** command to all non-zero RTU addresses in the Remote Transfer Trip Transmit List table following an **Open** and **Lockout** state because of a protection or automatic sectionalizing event. When disabled, no condition will result in sending an **Initiate Transfer Trip** command to remote devices. Control point = 0x1F03. |
| 32 | **Enable/Disable Remote Prohibit Restoration from Local—**When enabled, a local **Prohibit Restoration** command (via the front panel or IntelliLink software screen) will place the device in a **Prohibit Restoration** mode and then transmit a **Prohibit Restoration** command to all devices in the Remote Prohibit Restoration Transmit list. Control point = 0x1F04. |
| 33 | **Enable Remote Prohibit Restoration from SCADA—**When enabled, the device will enter a **Prohibit Restoration** mode and then transmit a **Prohibit Restoration** command to all devices in the Remote Prohibit Restoration Transmit list if any the following modes are active: **Hot Line Tag**, **Frequency Trip**, **Manual Operation**, or the **Prohibit Restoration** state is activated from a SCADA command. Control point = 0x1F05. |
| 34 | **Clear Manual Op Any State—**When executed, the manual operation on a device is cleared and the device goes into the **Ready** state. The device can be in an abnormal state (i.e. abnormally open or abnormally closed) or in its normal state (normally open or normally closed). |

# 6801 Counter Points

**Table 6. 6801 Counter Points**

| Code # | Name—Definition |
|---|---|
| 1 | **Switch Close Operation Count Switch 1**—This is the number of switch operations. The counter is incremented on each **Close** operation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 2 | **Disk Problem**—This is the number of disk problems. The counter is incremented on each disk problem. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 3 | **Compact Flash Issue**—This is the number of flash memory issues. The counter is incremented on each flash memory issue. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 4 | **Logging Overflow**—This is the number of log overflows. The counter is incremented on each log overflow. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 5 | **Error Putting Coach on the Task List, List Full**—This is the number of errors putting coach on the task list. The counter is incremented on each error. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 6 | **Error Putting Communication Entry on Task List, List Full**—This is the number of errors putting a communication entry on the task list. The counter is incremented on each error. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 7 | **Error Putting Event on the Task List, List Full**—This is the number of errors putting an event on the task list. The counter is incremented on each error. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 8 | **Error Putting Member on the Task List. List Full**—This is the number of errors putting a member on the task list. The counter is incremented on each error. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 9 | **New Coach Generated on Team**—This is the number of coach generations on the team. The counter is incremented on each coach generation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 10 | **Rebuilding Coach**—This is the number of **Coach Rebuild** operations. The counter is incremented on each **Coach Rebuild** operation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 11 | **Resynchronize Sequence Number**—This is the number of sequence number resynchronizations. The counter is incremented on each **Resynchronization** operation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 12 | **Team Communication Problem**—This is the number of communication problems. The counter is incremented on each communication problem. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 13 | **Unexpected State Change**—This is the number of unexpected state changes. The counter is incremented on each unexpected state change. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 14 | **Wi-Fi Intrusion Attempt**—This is the number of Wi-Fi intrusion attempts. The counter is incremented on each Wi-Fi intrusion attempt. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 15 | **IntelliLink Intrusion Attempt**—This is the number of IntelliLink software log-in attempts that failed three times, after which all users are locked out for 15 minutes. |

This instruction sheet section provides Distributed Network Protocol (DNP) points and DNP implementation information for use with software **SG68023PMInstaller-7.6.x**. The "x" can indicate any number from 0 to 255. Other related software component version information is found on the *Setup>General>Revisions* screen.

The DNP master station should define 6802/3 switch controls with the following Status, Double-bit Status, Analog Input, Analog Output, Control, and Counter points:

| Point | Count |
|---|---|
| **Status** | 130 |
| **Double-bit Status** | 3 |
| **Analog Input** | 62 |
| **Analog Output** | 4 |
| **Control** | 42 |
| **Counter** | 17 |

The available DNP points are listed in Tables 7 through 12 on pages 20 through 39 in the same order they are presented for selection on the *Setup>Communication>Point Mapping* screens. 6802/3 Status, Analog Input, and Control points can be assigned to any SCADA DNP point index.

Point descriptions begin with a code number used to find the detailed definition in this instruction sheet. Refer to the "Communication Setup" section of S&C Instruction Sheet 1045-530, "6800 Series Automatic Switch Control: *Setup*." The code number for each point description this publication is not the SCADA point index.

For a specific SCADA system, typically all 6802/3 switch controls operate with the same DNP point index configuration.

Unless otherwise noted, each point is on if the condition is logically true or active.

| *NOTICE* |
|---|
| The source address in IntelliLink Setup Software is now 65432 instead of 1. |

| *NOTICE* |
|---|
| When uploading a setpoint or DNP points map file from any version earlier than 7.6.x into a 6801/6802/6803 Automatic Switch Control with 7.6.x firmware, the **Code Description** and **Class** fields for DNP Status Points associated with the **SAT** feature (**SAT In Progress**, **SAT Switch Contacts Closed**, **SAT Switch Contacts Open**, **SAT Prohibited Locally** and **SAT Ignore Open Disconnect**) if mapped will display "End" and "Class 1." These must be manually converted to "Reserved" and "No Event" respectively so the SCADA system receives static data for any points mapped beyond them. |

# 6802/3 Status Points

The 6802 and 6803 Automatic Switch Control features have multiple status points:

- **Open or Close**: 1-8
- **IntelliTeam SG Operation**: 44-60
- **Netlist Information**: 71-74

**Table 7. 6802/3 Status Points**

| Code # | Name—Definition |
|---|---|
| 1● | **Switch 1 Open**—On when contact status is **Open**. Otherwise, off. |
| 2● | **Switch 1 Closed**—On when contact status is **Closed**. Otherwise, off. |
| 3● | **Switch 2 Open**—On when contact status is **Open**. Otherwise, off. |
| 4● | **Switch 2 Closed**—On when contact status is **Closed**. Otherwise, off. |
| 5● | **Switch 3 Open**—On when contact status is **Open**. Otherwise, off. |
| 6● | **Switch 3 Closed**—On when contact status is **Closed**. Otherwise, off. |
| 7 | **Switch 1 Disabled/External Local**—On when switch operation is in the **Disabled** state. This is a summary point that reports for the **Battery Maintenance Required** status point (Status Point 17). Only this point reports when the LOCAL/REMOTE switch in the motor operator cabinet is set to the **Local** position. Otherwise, off. The 6802/6803 switch control has no ability to command switch operation when the motor operator LOCAL/REMOTE switch is set to "Local." |
| 8 | **Switch 2 Disabled/External Local**—On when switch operation is in the **Disabled** state. This is a summary point that reports for the **Battery Maintenance Required** status point (Status Point 17). Only this point reports when the LOCAL/REMOTE switch in the motor operator cabinet is set to the **Local** position. Otherwise, off. The 6802/6803 switch control has no ability to command switch operation when the motor operator LOCAL/REMOTE switch is set to "Local." |
| 9 | **Automatic Operation Enabled**—On when the **Automatic Operation** mode is enabled using either the faceplate switch or a SCADA command. Otherwise, off. |
| 10 | **Automatic Operation enabled for Switch 1**—This point is only applicable when Status Point 9 is enabled. |
| 11 | **Automatic Operation enabled for Switch 2**—This point is only applicable when Status Point 9 is enabled. |
| 12 | **SCADA Control Enabled**—On when the SCADA CONTROL faceplate switch is set to "Remote." Otherwise, off. |
| 13 | **Overcurrent Fault Detected, Switch 1**—On when the fault-detection circuitry registers an **Overcurrent Fault** condition. Off when cleared by the **Fault Indicator Reset** strategy configured on the *Setup>General>Fault Detection* screen. Also off when manually cleared with the **Clear Faults** command in the LCD menu, the **Clear Faults** button on the *Setup>Site Related* screen, the faceplate/screenset pre-assigned **USER COMMAND** button, or the **Clear any outstanding Overcurrent Fault conditions present** control point (Control Point 6). The **Overcurrent Fault** condition also clears when the switch control is reinitialized using IntelliLink Setup Software or a SCADA reset command. |

● For firmware versions 7.3.x and earlier the status points with code numbers 1 - 6 have a different Code Description than shown in this table. These descriptions are: 1. Switch 1 Open, 2. Switch 2 Open, 3. Switch 3 Open, 4. Switch 1 Closed, 5. Switch 2 Closed, 6. Switch 3 Closed.

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 14 | **Overcurrent Fault Detected, Switch 2**—As noted in Status Point 13, for Switch 2. Otherwise, off. |
| 15 | **Sectionalizer Tripped, Switch 1**—On when any **Automatic Control** function opens the switch. The point is cleared when the switch is closed for any reason. It is also cleared on reinitialization of the switch control using the setup software or when the SCADA CONTROL switch state is changed. Otherwise, off. |
| 16 | **Sectionalizer Tripped, Switch 2**—As noted in Status Point 15, for Switch 2. Otherwise, off. |
| 17 | **Battery Maintenance Required**—On when battery replacement is required, unless the switch control is operating or has recently been operating on battery power. Otherwise, off. |
| 18 | **Maintenance Required**—On when some form of maintenance (other than battery replacement) is required. It is set when the battery charger stops functioning because of overvoltage or when the switch open/close contacts are not mutually exclusive. This is a summary point. An inspection of other status points can determine the exact cause. Otherwise, off. |
| 19 | **Open/Close Indication is Inconsistent, Switch 1**—On when both contacts are closed or open. Otherwise, off. |
| 20 | **Open/Close Indication is Inconsistent, Switch 2**—On when both contacts are closed or open. Otherwise, off. |
| 21 | **Ac Control Power Present**—On when ac control power is supplied to the control. Otherwise, off. |
| 22 | **Failure Override Set**—On when a SCADA operator executes the **Failure Override Latch-On** command to let the switch be operated even if the battery is bad. The point remains on until the override is disabled using the **Failure Override Latch-Off** command. Also, the point will go off and the **Failure Override** command will become disabled after a 15-minute timeout if it was not already turned off by the **Latch-Off** command. Otherwise, off. |
| 23 | **Battery System Low**—On when battery voltage is low, but the switch will operate. Otherwise, off. |
| 24 | **Battery Charger Problem**—On when the charging voltage applied to the battery system is too high and the charger has been turned off. Otherwise, off. |
| 25 | **Battery Test in Progress**—On when the switch control is automatically testing the batteries at periodic intervals. During the test, battery voltage fluctuates. Otherwise, off. |
| 26 | **Cabinet Door Open**—On when the enclosure door is open. When the door is closed this point is cleared and all power to the faceplate LEDs is turned off. Otherwise, off. |
| 27 | **Temperature Sensor Bad**—On when the temperature sensor is reading out of range. Temperature-related correction factors will not be accurate when the sensor is incorrect. Otherwise, off. |
| 28 | **Phase A Overcurrent Fault, Switch 1**—On when the fault-detection circuitry registers an **Overcurrent Fault** condition. Off when cleared by the **Fault Indicator Reset** strategy configured on the *Setup> General>Fault Detection* screen. Also off when manually cleared with the **Clear Faults** command in the LCD menu, the **Clear Faults** button on the *Setup>Site Related* screen, the faceplate/screenset pre-assigned USER COMMAND button, or the **Clear Any Outstanding Overcurrent Fault Conditions Present** control point (Control Point 6). The **Overcurrent Fault** condition also clears when the switch control is reinitialized using IntelliLink Setup Software or a SCADA reset command. |
| 29 | **Phase A Overcurrent Fault, Switch 2**—As noted in Status Point 28, for Phase A, Switch 2. Otherwise, off. |

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 30 | **Phase B Overcurrent Fault, Switch 1**—As noted in Status Point 28, for Phase B, Switch 1. Otherwise, off. |
| 31 | **Phase B Overcurrent Fault, Switch 2**—As noted in Status Point 28, for Phase B, Switch 2. Otherwise, off. |
| 32 | **Phase C Overcurrent Fault, Switch 1**—As noted in Status Point 28, for Phase C, Switch 1. Otherwise, off. |
| 33 | **Phase C Overcurrent Fault, Switch 2**—As noted in Status Point 28, for Phase C, Switch 2. Otherwise, off. |
| 34 | **Overcurrent Ground Fault, Switch 1**—As noted in Status Point 28, for ground, Switch 1. Otherwise, off. |
| 35 | **Overcurrent Ground Fault, Switch 2**—As noted in Status Point 28, for ground, Switch 2. Otherwise, off. |
| 36 | **Loss of Voltage on Any Configured Voltage Channel, Switch 1**—On when the voltage sensor on a configured voltage channel shows loss of voltage. For example, pad-mounted gear may be configured with three voltage sensors or six voltage sensors. Otherwise, off. |
| 37 | **Loss of Voltage on Any Configured Voltage Channel, Switch 2**—On when the voltage sensor on a configured voltage channel shows loss of voltage. For example, pad-mounted gear may be configured with three voltage sensors or six voltage sensors. Otherwise, off. |
| 38 | **Phase A Reverse Current, Switch 1**—On when the current on Phase A is flowing in the direction opposite to the **Normal Direction** setting configured in the switch control. The switch control identifies a **Reverse Current** condition when the voltage-current phase angle deviates more than 90 degrees from the value set during installation for the **Unity Power Factor** setpoint. Otherwise, off. |
| 39 | **Phase B Reverse Current, Switch 1**—As noted in Status Point 38, for Phase B, Switch 1. Otherwise, off. |
| 40 | **Phase C Reverse Current, Switch 1**—As noted in Status Point 38, for Phase C, Switch 1. Otherwise, off. |
| 41 | **Phase A Reverse Current, Switch 2**—On when the current on Phase A is flowing in the direction opposite to the **Normal Direction** setting configured in the switch control. The switch control identifies a **Reverse Current** condition when the voltage-current phase angle deviates more than 90 degrees from the value set during installation for the **Unity Power Factor** setpoint. Otherwise, off. |
| 42 | **Phase B Reverse Current, Switch 2**—As noted in Status Point 41, for Phase B, Switch 2. Otherwise, off. |
| 43 | **Phase C Reverse Current, Switch 2**—As noted in Status Point 41, for Phase C, Switch 2. Otherwise, off. |
| 44 | **Switch Control Not Transfer Ready**—Active only for the reporting switch control. On when a switch operation is not consistent with the expected team operation (i.e. incomplete or manual switch operation). This point is also on if any of these status points are on: **Switch Disabled** (Status Points 7 and 8), **Automatic Operation Disabled** (Status Point 9), or **Switch Position Inconsistent** (Status Points 19 and 20). This point is used in conjunction with the **Not All Teams Transfer Ready** status point (Status Point 45) to identify the specific team member where a problem exists. Otherwise, off. |

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 45 | **Not All Teams Transfer Ready**—On when any teams in which this switch control participates are in the **Not Transfer Ready** state (Status Point 44). This may be because of an individual team member condition, team-wide conditions such as isolating a fault, team configuration or coordination problems, **Restoration Prohibited** state (Status Point 49), or the **Team Logic** setting is set to the **Disabled** state on the *Team>Setup* screen. If Status Point 44 is on in one team member, Status Point 45 is also on in the other team members. Otherwise, off. <br>**Note:** Unless otherwise prohibited, team member controls revert to **Standalone Sectionalizing** logic when the **Not Transfer Ready** mode (this status point) is active in all teams in which that control participates, whether because of local conditions or conditions at adjacent team members. |
| 46 | **Automatic Transfer Operation in Progress**—On when any team defined in the control is actively performing an **Automatic Transfer** operation. Otherwise, off. |
| 47 | **Automatic Return to Normal Operation in Progress**—On when any team defined in the control is actively performing a **Return-to-Normal** operation. Otherwise, off. |
| 48 | **Setup Data Revision**—On when the configuration entries for any enabled team defined in the control are modified. It remains on until the team-setup parameter on the *Setup>Team* screen has been toggled from **Stopped** mode back to **Running** mode for any team where the configuration entries have been changed. Otherwise, off. |
| 49 | **Restoration Prohibited by SCADA**—On when a **Prohibit Load Restoration Latch On** command (Control Point 13) is received, the **IntelliTeam SG Restoration** feature is disabled using the *IntelliTeam SG>Team Summary* screen, or the **Automatic Restoration** mode is set to **Prohibited** state on the front panel. When this point is on, no switch in any team in which this switch control participates will be allowed to automatically close, preventing automatic load restoration. This point is off when the **Prohibit Load Restoration Latch Off** command (Control Point 13) is received, the **IntelliTeam SG Restoration** feature is enabled using the *IntelliTeam SG>Team Summary* screen, or the **Automatic Restoration** mode is set to "Enabled" on the front panel. Otherwise, off. |
| 50 | **Restoration Prohibited by Team Timer**—On when the **Team Transfer Process** timer expires in this control, resulting in the **Prohibit Restoration** mode being enabled for at least one of the teams in which this control participates. Only the team for which this timer has expired is prohibited from further automatic load restoration. This point is cleared when **Prohibit Load Restoration Latch Off** (Control Point 13) is received or the **IntelliTeam SG Restoration** feature is enabled using the *IntelliTeam SG>Team Summary* screen, or the **Automatic Restoration** mode is set to "Enabled" on the front panel. Otherwise, off. |
| 51 | **Source Loading Data is Active**—On when the **Real-time Feeder Loading** logic is active and in use. This point does not indicate whether the control is using actual real-time feeder loading data received from a DNP master or using the **Default Source Segment Loading** setting. Otherwise, off. |
| 52 | **Real-Time Load Data May be Old or Abnormal**—On when the **DNP Analog Output** value received is less than the real-time three-phase total load as sensed by the switch. It is also set if the real-time feeder loading data have not updated within the configured time interval. Off when new data are received, and the analog value is equal to or greater than the local measured load. |
| 53 | **Team 1 Ready To Transfer**—On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 54 | **Team 2 Ready To Transfer**—On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |

*TABLE CONTINUED ▶*

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 55 | **Team 3 Ready To Transfer**—On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 56 | **Team 4 Ready To Transfer**—On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 57 | **Team 5 Ready To Transfer**—On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 58 | **Team 6 Ready To Transfer**—On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 59 | **Team 7 Ready To Transfer**—On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 60 | **Team 8 Ready To Transfer**—On when the team is in the **Ready to Transfer** state. This point is off if the team is not in use, contains an **Error** condition, or the line section represented by the team contains a fault. |
| 61 | **Loss of Voltage on Any Phase, Switch 1**—On when voltage is lost on any phase. Otherwise, off. |
| 62 | **Overcurrent Fault on Any Phase, Switch 1**—On when fault current is sensed on any phase. Otherwise, off. |
| 63 | **Switch 1 Tripped to Lockout**—On when Switch 1 is in the **Locked Out** mode as the result of an event. The IntelliTeam system may begin the reconfiguration process. Off when the **Close Switch 1** command is given. Otherwise, off. |
| 64 | **Manual Operation Detected for Switch 1**—On when the IntelliTeam system senses that the switch has been operated manually. Otherwise, off. |
| 65 | **Switch 1 IntelliTeam Switch Status Open**—Indicates the IntelliTeam system has properly received the switch status. This point should always agree with **Switch 1 Open** (Status Point 1). |
| 66 | **Loss of Voltage on Any Phase, Switch 2**—On when voltage is lost on any phase. |
| 67 | **Overcurrent Fault on Any Phase, Switch 2**—On when fault current is sensed on any phase. |
| 68 | **Switch 2 Tripped to Lockout**—On when Switch 2 is in the **Locked Out** mode as the result of an event. The IntelliTeam system may begin the reconfiguration process. Off when the **Close Switch 2** command is given. Otherwise, off. |
| 69 | **Manual Operation Detected for Switch 2**—On when the IntelliTeam system senses that the switch has been operated manually. Otherwise, off. |
| 70 | **Switch 2 IntelliTeam Switch Status Open**—Indicates the IntelliTeam system has properly received the switch status. This point should always agree with **Switch 2 Open** (Status Point 2). |
| 71 | **Netlist Missing Runners**—On when the received **Runner** count doesn't match the expected **Runner** count. The **Rapid Self Healing** feature is disabled as long as this is the case. Otherwise, off. |
| 72 | **Netlist Settings Propagation**—On when the local control is receiving Netlist records from either a download or through propagation. If this is a Netlist download, the status point remains on until all expected runners arrive with the new Netlist. Otherwise, off. |

*TABLE CONTINUED* ▶

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 73 | **Netlist Settings Accepted**—On when a new Netlist has been successfully validated. Off when a Netlist is being downloaded or propagated. Off if the user has changed any team settings so they are different from the screenset. Otherwise, off. |
| 74 | **Netlist Propagation Enabled**—On when the IntelliLink software screenset or SCADA enables Netlist propagation. Otherwise, off. (Starting with version 7.1.x, the **Netlist Propagation** mode is always in the **Enabled** state; therefore, this status point is always on.) |
| 75 | **IntelliTeam II Mode Active**—On when the IntelliTeam II Automatic Restoration System software is in use. |
| 76 | **IT Out of Normal State Switch 1**—On when the switch is not in the **Normally Open** or **Normally Closed** state for the IntelliTeam system. Off when the switch is in the **Normally Open** or **Normally Closed** state for the IntelliTeam system. Otherwise, off. |
| 77 | **IT Out of Normal State Switch 2**—Same as noted in Status Point 76, for switch 2. Otherwise, off. |
| 78 | **Switch 1 PLI Open**—On when the switch has been opened by the **Phase-Loss Isolation** (PLI) logic. Otherwise, off. |
| 79 | **Ac Power Not Present**—On when ac power is not available to the control. Otherwise, off. |
| 80 | **Battery Disconnected**—On when battery is disconnected. Otherwise, off. |
| 81 | Reserved. |
| 82 | Reserved. |
| 83 | Reserved. |
| 84 | Reserved. |
| 85 | Reserved. |
| 86 | Reserved. |
| 87 | Reserved. |
| 88 | **Wi-Fi Is Connected**—On when a Wi-Fi connection to the control is established. Otherwise, off. |
| 89 | **Wi-Fi Intrusion Alarm**—On when the Wi-Fi module reports a replay attack or improper authentication. Turned off by the user with the **Clear Wi-Fi Intrusion Alarm** command (Control Point 15). |
| 90 | **Wi-Fi Disabled by SCADA**—On when the **Disable Wi-Fi** command (Control Coint 17) is received. Off when the **Enable Wi-Fi** command (Control Coint 18) is received. The **Enable/Disable Wi-Fi** command (Control Coint 15) toggles Wi-Fi communication on and off; on when Wi-Fi is disabled and off when Wi-Fi is enabled. Otherwise, off. |
| 91 | **Switch 2 PLI Open**—On when the switch has been opened by the **Phase-Loss Isolation** (PLI) logic. Otherwise, off. |
| 92 | **Warning**—On when any warning is active. Otherwise, off. |
| 93 | **Alarm**—On when any alarm is active. Otherwise, off. |
| 94 | **Error**—On when any error is active. Turned off by a user action to clear the error. |
| 95 | **Switch 1 Phase A Loss of Voltage**—On when voltage is below the configured **Loss of Voltage Threshold** setting. Otherwise, off. |

*TABLE CONTINUED* ▶

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 96 | **Switch 1 Phase B Loss of Voltage**—On when voltage is below the configured **Loss of Voltage Threshold** setting. Otherwise, off. |
| 97 | **Switch 1 Phase C Loss of Voltage**—On when voltage is below the configured **Loss of Voltage Threshold** setting. Otherwise, off. |
| 98 | **Switch 2 Phase A Loss of Voltage**—On when voltage is below the configured **Loss of Voltage Threshold** setting. Otherwise, off. |
| 99 | **Switch 2 Phase B Loss of Voltage**—On when voltage is below the configured **Loss of Voltage Threshold** setting. Otherwise, off. |
| 100 | **Switch 2 Phase C Loss of Voltage**—On when voltage is below the configured **Loss of Voltage Threshold** setting. Otherwise, off. |
| 101 | **Comm System has Poor Quality**—On when the **Bad Health** alarm is active on the *Link Keep Alive Tests* screen and/or the *Diagnostic Communications Tests* screen. Otherwise, off. |
| 102 | **IntelliLink Intrusion**—On when an IntelliLink software log-in attempt failed three times, after which all users are locked out for 15 minutes. Otherwise, off. |
| 103 | **IntelliLink Session Active**—On when a user is presently logged in to the control. Otherwise, off. |
| 104 | **Not all Teams Xfer Ready for X sec**—On when any team in which this control is a member is in the **Out of Ready** state for a time exceeding the **Not All Teams Transfer Ready for X Seconds** timer. The status point becomes inactive when a new valid coach arives and the team goes back into the **Ready** state. |
| 105 | **Prohibit Restoration Remotely Transmitted**—On when the local device sends the **Prohibit Restoration SCADA** command to remote devices in the Remote Prohibit Restoration Transmit List table because of an active **Hot Line Tag**, **Frequency Trip**, or **Manual Operation** state, or when a **Prohibit Restoration** state is activated via a front panel, IntelliLink software screen, or SCADA command. The status point is cleared when the device receives a **Clear Remote Prohibit Restoration Status** command from SCADA. Status Point = 0x1F00 |
| 106 | **Enable Restoration Remotely Transmitted**—On when the local device sends the **Clear Remote Prohibit Restoration Status** command to remote devices in the Remote Prohibit Restoration Transmit List table. This event can be triggered by executing a **Clear Remote Prohibit Restoration Status** command via IntelliLink or receiving an **IT Clear PR to all Devices** command from SCADA. The status point is cleared when the device receives the **Clear Remote Enable Restoration Status** control point. Status Point = 0x1F01 |
| 107 | **User-Defined Input 1**—On when the user-defined input at J20-1 has a change from an **Inactive** to an **Active** state or is being held in the **Active** state pending an acknowledgement. When configured to execute a command such as the **Prohibit Restoration** command, the **DNP** control point or a front panel command can execute an **Enable Restoration** command to cancel the **Prohibit Restoration** command. A subsequent user-defined input change from an **Inactive** to an **Active** state would then re-execute the **Prohibit Restoration** command. (Range: Disable Automatic Operation, Prohibit Restoration, Block Close Operations, Block Open and Close Operations, and None; Default: None) |

*TABLE CONTINUED* ▶

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 108 | **User-Defined Input 2—**On when the user-defined input at J20-2 has a change from an **Inactive** to an **Active** state or is being held in the **Active** state pending an acknowledgement. When configured to execute a command such as the **Prohibit Restoration** command, the **DNP** control point or a front panel command can execute an **Enable Restoration** command to cancel the **Prohibit Restoration** command. A subsequent user-defined input change from an **Inactive** to an **Active** state would then re-execute the **Prohibit Restoration** command. (Range: Disable Automatic Operation, Prohibit Restoration, Block Close Operations, Block Open and Close Operations, and None; Default: None) |
| 109 | **User-Defined Input 3—**On when the user-defined input at J20-3 has a change from an **Inactive** to an **Active** state or is being held in the **Active** state pending an acknowledgement. When configured to execute a command such as the **Prohibit Restoration** command, the **DNP** control point or a front panel command can execute an **Enable Restoration** command to cancel the **Prohibit Restoration** command. A subsequent user-defined input change from an **Inactive** to an **Active** state would then re-execute the **Prohibit Restoration** command. (Range: Disable Automatic Operation, Prohibit Restoration, Block Close Operations, Block Open and Close Operations, and None; Default: None) |
| 110 | **Transfer Trip Enabled—**On when the **Transfer Trip** mode is enabled to allow the local device to send an **Initiate Transfer Trip** command to all non-zero RTU addresses in the Remote Transfer Trip Transmit List table after an **Open** and **Lockout** state because of a Protection or Automatic Sectionalizing event. Status Point = 0x1F02. |
| 111 | **Disregard First Overcurrent Active—**On when the **Disregard First Overcurrent** setpoint is set to the **Yes** state on the *Setup>Restoration>IntelliTeam SG* screen, or the **Enable DIFF** control point has been received. Otherwise, off. |
| 112 | **SW1 Normal Current Direction—**On when the device is properly configured and power is flowing through the circuit in the normal direction. Status Point = 0x167. |
| 113 | **SW1 Reverse Current Direction—**On when the device is configured incorrectly or circuit conditions cause the direction of current flow to reverse, possibly because of distributed generation on the circuit. Status Point = 0x168. |
| 114 | **SW2 Normal Current Direction—**On when the device is properly configured and power is flowing through the circuit in the normal direction. Status Point = 0x167. |
| 115 | **SW2 Reverse Current Direction—**On when the device is configured incorrectly or circuit conditions cause the direction of current flow to reverse, possibly because of distributed generation on the circuit. Status Point = 0x168. |
| 116 | **Transfer Trip Prohibit Restoration Initiated—**On when an **Initiate Transfer Trip** control point (Control Point 32 or 33) has been received and executed. Off when the **Prohibit Restoration** mode is no longer active and the control will be allowed to close by an automatic or manual operation. **Note:** This status point only applies to devices not teamed with a distributed generation source. When teamed with distributed generation, this status point will not get activated, even if a **Transfer Trip** command is initiated and executed. Status Point = 0x021C. |
| 117 | **Remote Prohibit Restoration Enabled from Local—**On when the **Enable Remote Transmit from Local P.R.** setting is enabled on the local device. Status Point = 0x1F03. |

*TABLE CONTINUED* ▶

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 118 | **Remote Prohibit Restoration Enabled from SCADA**—On when the **Enable Remote Transmit from SCADA P.R.** setting is enabled on the local device by a SCADA **Latch-On** command.. Status Point = 0x1F04. |
| 119 | **Local Sw 1 is Closed Loop Center**—On when this switch control is the configured closed-loop center-point switch. Otherwise, off. |
| 120 | **Local Sw 2 is Closed Loop Center**—On when this switch control is the configured closed-loop center-point switch. Otherwise, off. |
| 121 | **DG Reconnect Delay Terminated**—The **DG Reconnect Delay** timer is aborted because of an abnormal system condition. The **Transfer Trip Prohibit Restoration** mode remains active on the device and reconnecting the distributed generation source back on the grid must be performed manually. |
| 122 | **Switch 1 Close Operation Blocked**—On when the User-Defined Input is also set to block operation (block **Close** or block both **Open** and **Close** operations) and they go active. The status will then clear when the **User-Defined Input** status points go inactive. |
| 123 | **Switch 1 Open Operation Blocked**—On when the User-Defined Input is also set to block operation (block **Open** or block both **Open** and **Close** operations) and they go active. The status will then clear when the **User-Defined Input** status points go inactive. |
| 124 | **Switch 2 Close Operation Blocked**—On when the User-Defined Input is also set to block operation (block **Close** or block both **Open** and **Close** operations) and they go active. The status will then clear when the **User-Defined Input** status points go inactive. |
| 125 | **Switch 2 Open Operation Blocked**—On when the User-Defined Input is also set to block operation (block **Open** or block both **Open** and **Close** operations) and they go active. The status will then clear when the **User-Defined Input** status points go inactive. |
| 126 | **Transfer Declined Excess Load**—Applies to all active teams configured within a control. Active when a transfer attempt has been declined because of load within the team(s) to be restored that exceeds the present capacity of the alternate source. Otherwise, off if another reason for the declined transfer occurs at the same control, if the transfer stops because of a **Prohibit Restoration** or other error condition at any team member of this team, if the transfer succeeds at any team member of this team, or 5 minutes passes at this control with no further transfer declined conditions as a result of excessive loading. |
| 127 | **Transfer Declined Segment Limit**—Applies to all active teams configured within a control. Active when a transfer attempt has been declined because of the number of teams being requested for restoration exceeding the line segment limit associated with the alternate source. Otherwise, off if another reason for the declined transfer occurs at the same control, if the transfer stops because of a **Prohibit Restoration** or other error condition at any team member of this team, if the transfer succeeds at any team member of this team, or 5 minutes passes at this control with no further transfer declined conditions as a result of the line segment limit. |

*TABLE CONTINUED* ▶

**Table 7. 6802/3 Status Points—Continued**

| Code # | Name—Definition |
|---|---|
| 128 | **System Voltage Unrecognized—**Active when the local system voltage is not recognized as a supported system voltage. It remains active until the issue is resolved through correct configuration of the system voltage setting. |
| 129 | **Xfer Trip PR Initiated (DG POI)—**Active when the DG POI device has received a **Transfer Trip** message and has initiated a **Prohibit Restoration** state on the POI IntelliTeam system device. Otherwise, off when the DG POI device is in any other state. |
| 130 | **NET: Missing Runners in Adjacent FeederNet—**Active when a missing runner condition exists in any adjacent FeederNet in an IntelliTeam system. Otherwise, off if there are no missing runner conditions in any adjacent FeederNet in an IntelliTeam system. |
| 131 | **Transfer Trip Sent—**Active when a device sends a **Remote Transfer Trip** message via the Remote Transmit list after it has opened and locked out because of a protection or automatic sectionalizing event. It is cleared when the device is closed and in the **Ready** state. |
| 132 | **PR Due To Load Shed—**On when a Load Shedding event occurs at a team with a **Load Priority** setting configured in the do-not-restore range 20 to 25, activating a **Prohibit Restoration** state for that team. This point will be off when the source circuit returns to normal allowing the **PR Due To Load Shed** status point to clear, or when the **Prohibit Restoration** state is cleared by local command or SCADA command. |
| 133 | **GPS Not Active Time Source—**On when the **GPS** feature is not the active time source. Otherwise, off. |
| 134 | **Switch 3 Disabled/External Local Mode—**On when switch operation is in the **Disabled** state. This is a summary point that reports for the **Battery Maintenance Required** status point (Status Point 17). Only this point reports when the LOCAL/REMOTE switch in the motor operator cabinet is set to the **Local** position. Otherwise, off. The 6802/6803 switch control has no ability to command switch operation when the motor operator LOCAL/REMOTE switch is set to "Local." |
| 135 | **Shots To Lockout Status Switch 1—**On when **Shots to Lockout** feature for switch 1 is active. Otherwise, off. |
| 136 | **Shots to Lockout Status Switch 2—**On when **Shots to Lockout** feature for switch 2 is active. Otherwise, off. |
| 137 | **Open/Close Indication is Inconsistent, Switch 3—**On when both contacts are closed or open. Otherwise, off. |

# 6802/3 Double-bit Status Points

**Table 8. 6802/3 Double-bit Status Points**

| Code # | Name—Definition | |
|---|---|---|
| 1 | **Switch 1**—The value of the double-bit input describes the present switch state. | |
| | **State Value** | **Description** |
| | 0 | Travel or transition |
| | 1 | Switch is open |
| | 2 | Switch is closed |
| | 3 | Indeterminate |
| 2 | **Switch 2**—The value of the double-bit input describes the present switch state. | |
| | **State Value** | **Description** |
| | 0 | Travel or transition |
| | 1 | Switch is open |
| | 2 | Switch is closed |
| | 3 | Indeterminate |
| 3 | **Switch 3**—The value of the double-bit input describes the present switch state. | |
| | **State Value** | **Description** |
| | 0 | Travel or transition |
| | 1 | Switch is open |
| | 2 | Switch is closed |
| | 3 | Indeterminate |

**Table 9. 6802/3 Analog Input Points**

| Code # | Name—Definition |
|---|---|
| 1 | **90% Voltage Reference Standard—**This is a constant representing 90% of the full-scale value. |
| 2 | **0% Voltage Reference Standard—**This is a constant representing the zero value. |
| 3 | **Neutral Current of Switch 1—**Taken as the vector sum of the phase currents on Phases A, B, and C. Current is measured using true RMS techniques. Each count equals one ampere. |
| 4 | **Current, Phase A Switch 1—**Single-phase true RMS current measured on Phase A. Each count equals one ampere. |
| 5 | **Current, Phase B Switch 1—**Single-phase true RMS current measured on Phase B. Each count equals one ampere. |
| 6 | **Current, Phase C Switch 1—**Single-phase true RMS current measured on Phase C. Each count equals one ampere. |
| 7 | **Neutral Current of Switch 2—**Taken as the vector sum of the phase currents on Phases A, B, and C. Current is measured using true RMS techniques. Each count equals one ampere. |
| 8 | **Current, Phase A Switch 2—**Single-phase true RMS current measured on Phase A. Each count equals one ampere. |
| 9 | **Current, Phase B Switch 2—**Single-phase true RMS current measured on Phase B. Each count equals one ampere. |
| 10 | **Current, Phase C Switch 2—**Single-phase true RMS current measured on Phase C. Each count equals one ampere. |
| 11 | **Neutral Current of Switch 3—**Taken as the vector sum of the phase currents on Phases A, B, and C. Current is measured using true RMS techniques and reported in units of one count equals one ampere. |
| 12 | **Current, Phase A Switch 3—**Single-phase true RMS current measured on Phase A. Each count equals one ampere. |
| 13 | **Current, Phase B Switch 3—**Single-phase true RMS current measured on Phase B. Each count equals one ampere. |
| 14 | **Current, Phase C Switch 3—**Single-phase true RMS current measured on Phase C. Each count equals one ampere. |
| 15 | **Voltage, Phase A Switch 1—**Single-phase voltage measured on Phase A of Switch 1. Voltage is measured using true RMS techniques and scaled to yield a nominal value of 120 Vac. Configuration of the switch control at installation provides the scaling factors such as voltage transformer turn ratio, etc. In cases where loads are connected in a Delta (phase-to-phase) configuration, the switch control sensor conditioning module is jumpered to yield phase-to-phase voltage readings. Voltage is reported in units of one sensor count equals 0.1 Vac RMS. |
| 16 | **Voltage, Phase B Switch 1—**Phase-to-ground or phase-to-phase voltage (depending on setup) measured on Pole B, Switch 1. Each count equals 0.1 Vac RMS. |
| 17 | **Voltage, Phase C Switch 1—**Phase-to-ground or phase-to-phase voltage (depending on setup) measured on Pole C, Switch 1. Each count equals 0.1 Vac RMS. |
| 18 | **Voltage, Phase A Switch 2—**Phase-to-ground or phase-to-phase voltage (depending on setup) measured on Pole A, Switch 2. Each count equals 0.1 Vac RMS. |

**Table 9. 6802/3 Analog Input Points—Continued**

| Code # | Name—Definition |
|---|---|
| 19 | **Voltage, Phase B Switch 2**—Phase-to-ground or phase-to-phase voltage (depending on setup) measured on Pole B, Switch 2. Each count equals 0.1 Vac RMS. |
| 20 | **Voltage, Phase C Switch 2**—Phase-to-ground or phase-to-phase voltage (depending on setup) measured on Pole C, Switch 2. Each count equals 0.1 Vac RMS. |
| 21 | **Phase Angle, on Phase A Switch 1**—Each count equals 0.125 degree. |
| 22 | **Phase Angle, on Phase B Switch 1**—Each count equals 0.125 degree. |
| 23 | **Phase Angle, on Phase C Switch 1**—Each count equals 0.125 degree. |
| 24 | **Phase Angle, on Phase A Switch 2**—Each count equals 0.125 degree. |
| 25 | **Phase Angle, on Phase B Switch 2**—Each count equals 0.125 degree. |
| 26 | **Phase Angle, on Phase C Switch 2**—Each count equals 0.125 degree. |
| 27 | **Single-Phase kvars, Phase A Switch 1**—Kvars (volt-amperes, reactive) are calculated from single-phase true RMS voltage and current sensor values and the respective voltage-current phase angle. Each count equals one kvar. |
| 28 | **Single-Phase kvars, Phase B Switch 1**—As noted in Analog Input Point 27. |
| 29 | **Single-Phase kvars, Phase C Switch 1**—As noted in Analog Input Point 27. |
| 30 | **Single-Phase kvars, Phase A Switch 2**—As noted in Analog Input Point 27. |
| 31 | **Single-Phase kvars, Phase B Switch 2**—As noted in Analog Input Point 27. |
| 32 | **Single-Phase kvars, Phase C Switch 2**—As noted in Analog Input Point 27. |
| 33 | **Cabinet Temperature**—In units of degrees Fahrenheit. |
| 34 | **Battery Voltage**—Nominally 24 Vdc. If ac power is on, this value is updated only during battery testing. If ac power is off, this value is continuously updated. One count equals 0.035 Vdc. |
| 35 | **Single-Phase kW, Phase A Switch 1**—Calculated using instantaneous voltage and current, and the respective voltage-current phase angle. Each count equals one kW. |
| 36 | **Single-Phase kW, Phase B Switch 1**—Calculated using instantaneous voltage and current, and the respective voltage-current phase angle. Each count equals one kW. |
| 37 | **Single-Phase kW, Phase C Switch 1**—Calculated using instantaneous voltage and current, and the respective voltage-current phase angle. Each count equals one kW. |
| 38 | **Single-Phase kVA Phase A Switch 1**—Each count equals one kVA. |
| 39 | **Single-Phase kVA Phase B Switch 1**—Each count equals one kVA. |
| 40 | **Single-Phase kVA Phase C Switch 1**—Each count equals one kVA. |
| 41 | **Single-Phase kW, Phase A Switch 2**—Calculated using instantaneous voltage and current, and the respective voltage-current phase angle. Each count equals one kW. |
| 42 | **Single-Phase kW, Phase B Switch 2**—Calculated using instantaneous voltage and current, and the respective voltage-current phase angle. Each count equals one kW. |

**Table 9. 6802/3 Analog Input Points—Continued**

| Code # | Name—Definition |
|---|---|
| 43 | **Single-Phase kW, Phase C Switch 2**—Calculated using instantaneous voltage and current, and the respective voltage-current phase angle. Each count equals one kW. |
| 44 | **Single-Phase kVA Phase A Switch 2**—Each count equals one kVA. |
| 45 | **Single-Phase kVA Phase B Switch 2**—Each count equals one kVA. |
| 46 | **Single-Phase kVA Phase C Switch 2**—Each count equals one kVA. |
| 47 | **Total kvars Switch 1**—Sum of kvar Phase A, kvar Phase B, and kvar Phase C. Each count equals one kvar. |
| 48 | **Total kvars Switch 2**—Sum of kvar Phase A, kvar Phase B, and kvar Phase C. Each count equals one kvar. |
| 49 | **Total kW Switch 1**—Sum of kW Phase A, kW Phase B, and kW Phase C. Each count equals one kW. |
| 50 | **Total kW Switch 2**—Sum of kW Phase A, kW Phase B, and kW Phase C. Each count equals one kW. |
| 51 | **Total kVA Switch 1**—Sum of kVA Phase A, kVA Phase B, and kVA Phase C. Each count equals one kVA. |
| 52 | **Total kVA Switch 2**—Sum of kVA Phase A, kVA Phase B, and kVA Phase C. Each count equals one kVA. |
| 53 | **Average Three-Phase Current Switch 1**—Average of Phase A Current, Phase B Current, and Phase C Current. Each count equals one ampere. |
| 54 | **Average Three-Phase Current Switch 2**—Average of Phase A Current, Phase B Current, and Phase C Current. Each count equals one ampere. |
| 55 | **Fault Magnitude, Pole 1 Switch 1**—Single-phase peak RMS current measured on Phase A that is over the **Phase Fault Detection Current Level** setting. |
| 56 | **Fault Magnitude, Pole 2 Switch 1**—Single-phase peak RMS current measured on Phase B that is over the **Phase Fault Detection Current Level** setting. |
| 57 | **Fault Magnitude, Pole 3 Switch 1**—Single-phase peak RMS current measured on Phase C that is over the **Phase Fault Detection Current Level** setting. |
| 58 | **Fault Magnitude, Neutral Switch 1**—Taken as the vector sum of the phase currents on Phases A, B, and C, that is over the **Ground Fault Detection Current Level** setting. |
| 59 | **Fault Magnitude, Pole 1 Switch 2**—Single-phase peak RMS current measured on Phase A that is over the **Phase Fault Detection Current Level** setting. |
| 60 | **Fault Magnitude, Pole 2 Switch 2**—Single-phase peak RMS current measured on Phase B that is over the **Phase Fault Detection Current Level** setting. |
| 61 | **Fault Magnitude, Pole 3 Switch 2**—Single-phase peak RMS current measured on Phase C that is over the **Phase Fault Detection Current Level** setting. |
| 62 | **Fault Magnitude, Neutral Switch 2**—Taken as the vector sum of the phase currents on Phases A, B, and C, that is over the **Ground Fault Detection Current Level** setting. |

**Table 10. 6801/2/3 Analog Output Points**

| Code # | Name—Definition |
|---|---|
| 1 | **Application Layer Confirmation Retry Time**—Time (100 to 65,535 ms.) the switch control will wait for an application layer confirmation to an event response message before resending the request for confirmation.① |
| 2 | **Application Layer Confirmation Retry Count**—Number of times (0 to 10) the control will send an event response message if a confirmation is not received. This number includes the initial response. The retry count is only in effect when the confirmation process is enabled. |
| 3 | **Control Point Select Time**—During a **Select-Before-Operate** procedure, the time (10 to 1000 tenths of a second) allowed to elapse between receiving the select function for a point and receiving the operate function for it. If an **Operate** function is not received within this period, the point is de-selected; another **Select** function is required before the point will operate. |
| 4 | **Real-Time Feeder Loading**—Total averaged three-phase feeder loading (10 amperes to maximum source capacity minus 10 amperes), measured at the source breaker. This value is used to determine whether the load can be transferred to another source. Each count equals one ampere. |

① Set and read the **Application Layer Confirmation Retry Time** setpoint based on the required range:

| Application Layer Confirmation Retry Time Range | Set Analog Output Value | Read Analog Output Value |
|---|---|---|
| 100 to 32,737 ms. | Group 41 variation 2 (16-bit) | Group 40 variation 2 (16-bit with flag) |
| 32,738 to 65,535 ms. | Group 41 variation 1 (32-bit) | Group 40 variation 1 (32-bit with flag) |

Class 0 will always report group 40 variation 2 and will report negative value for 32-bit values. Use group 40 variation 1 to read values between 32,738 to 65,535 ms.

The object type must be configured on the *Setup>Point Mapping>Controls* screen for each control point when it is mapped. Only the configured object type will be accepted and acted on for that control point. Some control points will not work with all object types. The available and default object types are listed for each control point.

Control points related to **Open** or **Close** commands: 1-5.

Control points related to the IntelliTeam SG system: 11-14.

**Table 11. 6801/2/3 Control Points**

| Code # | Name—Definition |
|--------|-----------------|
| 1 | **Open or Close Switch 1—SCADA—**This command opens or closes the switch. |
| 2 | **Open or Close Switch 2—SCADA—**This command opens or closes the switch. |
| 3 | **Open or Close Switch 3—SCADA—**This command opens or closes the switch. |
| 4 | **Issue the Shots-to-Lockout command to Switch 1—**Only a **Close** operation is valid for this point. This command is ignored and returns an error if the switch is not open or the **Automatic Operation** mode is not enabled. |
| 5 | **Issue the Shots-to-Lockout command to Switch 2—**Only a **Close** operation is valid for this point. This command is ignored and returns an error if the switch is not open or the **Automatic Operation** mode is not enabled. |
|  | Note: (Codes 1–5): These commands are ignored and return an error if a **Bad Battery** condition is active and the **Failure Override** command has not been issued or the external LOCAL/REMOTE switch in the motor operator cabinet associated with the intended position is set to "Local." These commands are ignored if the LOCAL/REMOTE switch is not in the **Remote** position. |
| 6 | **Clear any outstanding Overcurrent Fault conditions present—**This command must be issued using a **Pulse On** request. The fault condition otherwise remains active until cleared by the **Fault Indicator Reset Strategy** feature selected on the *Setup>General>Fault Detection* screen or until the REMOTE/LOCAL switch is toggled. |
| 7 | **Enable/Disable Failure Override status—**This command must be issued using the **Latch On/Off** request in the control relay output block. This allows **Open** and **Close** commands to be processed even if the **Switch Not Ready** condition is active. |
| 8 | **Enable/Disable Automatic Operation—**This command must be issued using the **Latch On/Off** request in the control relay output block. In **Automatic** mode, the switch control automatically opens the switch if a preconfigured recloser sequence is recognized after a detected fault.<br>Note: The **Automatic Operation** mode is not disabled when the faceplate REMOTE/LOCAL switch is set to **Local** operation. |
| 9 | **Enable/Disable Automatic Operation, Switch 1—**This command must be issued using the **Latch On/Off** request in the control relay output block. As noted in Control Point 8. |
| 10 | **Enable/Disable Automatic Operation, Switch 2—**This command must be issued using the **Latch On/Off** request in the control relay output block. As noted in Control Point 8. |
| 11 | **IntelliTeam Clear Manual Operation status—SCADA—**A **Pulse-On** or **Latch-On** command is used to clear a manual operation. This allows the IntelliTeam system to return to the **Ready** state, provided the switches are in their IntelliTeam **Normally Open** or **Normally Closed** state. |

**Table 11. 6801/2/3 Control Points—Continued**

| Code # | Name—Definition |
|--------|-----------------|
| 12 | **Set Alternate/Regular Reclose Counts**—Reserved for future use. |
| 13 | **IntelliTeam Prohibit Restoration**—This command must be issued using the **Latch On/Off** request in the control relay output block. When in the **Latched** state, this command prevents the local switch and any switches in any team in which this switch control participates from automatically closing to restore load under any circumstances. |
| 14 | **Netlist Propagation Enable/Disable**—In the **Enabled** state, allows new Netlist requests and Netlist transmissions. In the **Disabled** state, multiple downloads of a Netlist can be sent to a local control. (Starting with version 7.1.x, the **Netlist Propagation** mode is always in the **Enabled** state; therefore, this control point does not operate.) |
| 15 | **Wi-Fi Enable/Disable**—This command enables or disables local Wi-Fi communication. |
| 16 | **Start Battery Test—SCADA**—Command may be issued using a **Pulse-On** or **Latch-On** DNP command, and "Pulse" is the default object type. If ac power is available, the battery charger is disconnected for several minutes during the test. If ac power is not available, a brief impedance test is used to evaluate battery condition. |
| 17 | **Wi-Fi Disable**—This command disables local Wi-Fi communication. |
| 18 | **Wi-Fi Enable**—This command enables local Wi-Fi communication. |
| 19 | **Wi-Fi Test**—This command activates the Wi-Fi beacon transmitter for troubleshooting purposes. |
| 20 | **Clear Wi-Fi Intrusion Alarm**—This command clears an active **Wi-Fi Intrusion** alarm. |
| 21 | **Clear Errors**—This command clears all error flags. Alarms and warnings are not affected. |
| 22 | **Clear Warnings**—This command clears all warning flags. Errors and alarms are not affected. The **Active Warnings** function will reassert in approximately one second. |
| 23 | **Clear Alarms**—This command clears all alarm flags. Errors and warnings are not affected. The **Active Alarms** function will reassert in approximately one second. |
| 24 | **Clear OC Faults Switch 1**—This command clears the **Overcurrent Fault** state for Switch 1. |
| 25 | **Clear OC Faults Switch 2**—This command clears the **Overcurrent Fault** state for Switch 2. |
| 26 | **Manual Operation Status Switch 1**—This command clears the **Manual Operation** state for Switch 1. |
| 27 | **Manual Operation Status Switch 2**—This command clears the **Manual Operation** state for Switch 2. |
| 28 | **Clear IntelliLink Intrusion**—This command clears the **IntelliLink Intrusion** status point. |
| 29 | **Clear Remote Prohibit Restoration Status**—This command clears the **Prohibit Restoration Remotely Transmitted** status point. Control point = 0x1F00. |
| 30 | **Clear Remote Enable Restoration Status**—This command clears the **Enable Restoration Remotely Transmitted** status point. Control point = 0x1F01. |

**Table 11. 6801/2/3 Control Points—Continued**

| Code # | Name—Definition |
|---|---|
| 31 | **Remote Transmit Enable Restoration—**When this command is received, the device clears the **Prohibit Restoration** mode locally (only if **Hot Line Tag**, **Frequency Trip**, or **Manual Operation** modes are not active) and then sends a command to clear the **Prohibit Restoration** mode to all devices in the Remote Prohibit Restoration Transmit List table. The **Enable Remote Transmit from SCADA P.R.** setting must be enabled to perform this action. Control point = 0x1F02. |
| 32 | **Initiate Transfer Trip Switch 1—**This command sets the **Transfer Trip** state on a single device. The device issues a command to **Open the switch in Automatic** mode (not a manual operation) and verifies the operation. If an **Open** state is confirmed, the device then activates the **Prohibit Restoration** mode on the team facing the distributed generation source (unless it's a distributed generation team) to prevent restoration of that line segment. For the **Prohibit Restoration** mode to be set, the receiving device must be an S&C switch control that is part of an IntelliTeam SG system. SW1 = 0x202, SW2 = 0x203. |
| 33 | **Initiate Transfer Trip Switch 2—**This command sets the **Transfer Trip** state on a single device. The device issues a command to **Open the switch in Automatic** mode (not a manual operation) and verifies the operation. If an **Open** state is confirmed, the device then activates the **Prohibit Restoration** mode on the team facing the distributed generation source (unless it's a distributed generation team) to prevent restoration of that line segment. For the **Prohibit Restoration** mode to be set, the receiving device must be an S&C switch control that is part of an IntelliTeam SG system. SW1 = 0x202, SW2 = 0x203. |
| 34 | **Acknowledge User Defined Input 1—**When User-Defined Input 1 has been configured to require a SCADA acknowledgement it will be held active after the physical input state has gone inactive until this control point is received. |
| 35 | **Acknowledge User Defined Input 2—**When User-Defined Input 2 has been configured to require a SCADA acknowledgement, it will be held active after the physical input state has gone inactive until this control point is received. |
| 36 | **Acknowledge User Defined Input 3—**When User-Defined Input 3 has been configured to require a SCADA acknowledgement, it will be held active after the physical input state has gone inactive until this control point is received. |
| 37 | **Enable/Disable Transfer Trip—**When enabled, the local device sends an **Initiate Transfer Trip** command to all non-zero RTU addresses in the Remote Transfer Trip Transmit List table following an **Open** and **Lockout** state because of a protection or automatic sectionalizing event. When disabled, no condition will result in sending an **Initiate Transfer Trip** command to remote devices. Control point = 0x1F03. |
| 38 | **Enable/Disable DIFF—**This command enables or disables the **Disregard First Overcurrent** mode. |
| 39 | **Enable Remote Prohibit Restoration from Local—**When enabled, a local **Prohibit Restoration** command (via the front panel or IntelliLink software screen) will place the device in a **Prohibit Restoration** mode and then transmit a **Prohibit Restoration** command to all devices in the Remote Prohibit Restoration Transmit list. Control point = 0x1F04. |
| 40 | **Enable Remote Prohibit Restoration from SCADA—**When enabled, the device will enter a **Prohibit Restoration** mode and then transmit a **Prohibit Restoration** command to all devices in the Remote Prohibit Restoration Transmit list if any the following states are active: **Hot Line Tag**, **Frequency Trip**, **Manual Operation**, or the **Prohibit Restoration** state is activated from a SCADA command. Control point = 0x1F05. |

**Table 11. 6801/2/3 Control Points—Continued**

| Code # | Name—Definition |
|--------|-----------------|
| 41 | **Clear Manual Operation Any State Switch 1—**When executed, the manual operation on a device is cleared and the device goes into the **Ready** state. The device can be in an **Abnormal** state (i.e. abnormally open or abnormally closed) or in its **Normal** state (normally open or normally closed). |
| 42 | **Clear Manual Operation Any State Switch 2—**When executed, the manual operation on a device is cleared and the device goes into the **Ready** state. The device can be in an **Abnormal** state (i.e. abnormally open or abnormally closed) or in its **Normal** state (normally open or normally closed). |

**Table 12. 6801/2/3 Counter Points**

| Code # | Name—Definition |
|---|---|
| 1 | **Close Operation Count Switch 1**—This is the number of switch operations. The counter is incremented on each **Close** operation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 2 | **Close Operation Count Switch 2**—This is the number of switch operations. The counter is incremented on each **Close** operation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 3 | **Close Operation Count Switch 3**—This is the number of switch operations. The counter is incremented on each **Close** operation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 4 | **New Coach Generated on Team**—This is the number of coach generations on the team. The counter is incremented on each coach generation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 5 | **Team Communication Problem**—This is the number of communication problems. The counter is incremented on each communication problem. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 6 | **Unexpected State Change**—This is the number of unexpected state changes. The counter is incremented on each unexpected state change. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 7 | **Rebuilding Coach**—This is the number of **Coach Rebuild** operations. The counter is incremented on each **Coach Rebuild** operation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 8 | **Error Putting Coach on the Task List**—This is the number of errors putting coach on the task list. The counter is incremented on each error. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 9 | **Error Putting Communication Entry on Task List**—This is the number of errors putting a communication entry on the task list. The counter is incremented on each error. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 10 | **Error Putting Event on the Task List**—This is the number of errors putting an event on the task list. The counter is incremented on each error. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 11 | **Error Putting Member on the Task List**—This is the number of errors putting a member on the task list. The counter is incremented on each error. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 12 | **Resynchronize Sequence Number**—This is the number of sequence number resynchronizations. The counter is incremented on each resynchronization operation. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 13 | **Compact Flash Issue**—This is the number of flash memory issues. The counter is incremented on each flash memory issue. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 14 | **Logging Overflow**—This is the number of log overflows. The counter is incremented on each log overflow. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 15 | **Disk Problem**—This is the number of disk problems. The counter is incremented on each disk problem. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |
| 16 | **Wi-Fi Intrusion Attempt**—This is the number of Wi-Fi intrusion attempts. The counter is incremented on each Wi-Fi intrusion attempt. This is a 32-bit counter and will overflow back to zero at 4,294,967,295. |

**Table 12. 6801/2/3 Counter Points—Continued**

| Code # | Name—Definition |
|--------|-----------------|
| 17 | **IntelliLink Intrusion Attempt—**This is the number of IntelliLink software log-in attempts that failed three times, after which all users are locked out for 15 minutes. |

**Table 13. 6801/2/3 Group 0 Objects**

| Variation | Variation Name | Definition |
|---|---|---|
| 204 | Device location longitude | This is the longitude of the control provided by GPS in decimal degree based on the WGS84 reference. A value of zero is returned when a GPS signal is not available, the **Fix Quality** setting is in the **Invalid** state, or no GPS module is installed. When the GPS module is installed the present position is always returned, even when **GPS** mode is not selected for the **Time Source Synchronization** setpoint on the *Setup>General>Time* screen. |
| 205 | Device location latitude | This is the latitude of the control provided by GPS in decimal degree based on the WGS84 reference. A value of zero is returned when a GPS signal is not available, the **Fix Quality** setting is in the **Invalid** state, or no GPS module is installed. When the GPS module is installed the present position is always returned, even when **GPS** mode is not selected for the **Time Source Synchronization** setpoint on the *Setup>General>Time* screen. |
| 242 | Device manufacturer's software version | The S&C Electric Company implementation will return a string containing the MCU Application and MCU EOS. The following is an example of the string that will be returned: "003.003.004.003 060.001.021.043," representing MCU Application 3.3.4.3, MCU EOS 60.1.21.43. |
| 248 | Device serial number | The S&C Electric Company implementation will return a string containing the 6800 Series control serial number. The following is an example of the string that will be returned: "6802-0017-000001 62-0017001," representing a 6802 Automatic Switch Control serial number. |

# DNP Implementation

This implementation of DNP and this section of documentation conform to the document "DNP V3.00 Subset Definitions, Version 2.00," available from the DNP Users Group.

Table 14 describes the compatibility of S&C's implementation of DNP with other devices.

**Table 14. Device Profile Description**

```
                              DNP 3
                       DEVICE PROFILE DOCUMENT

                 Vendor Name:  S&C Electric Company

            Device Name:  6800 Series Automatic Switch Control

    Highest DNP Level Supported:              Device Function:
          For Requests  - Level  2              _ _ Master    X Slave
          For Responses - Level  2

    Notable objects, functions, and/or qualifiers supported in addition to the Highest
       DNP Levels Supported (the complete list is described in the attached table):
                       8-Bit Unsigned Integers

    _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
    _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
    _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
    _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

    Maximum Data Link Frame Size (bytes)      Max Application Fragment Size (bytes)
             Transmitted - 292                         Transmitted - 249
             Received    - 292                         Received    - 249

    Maximum Data link Re-tries:               Maximum Application Layer Re-tries:
              X    None                                 _ _    None
      _ _ Fixed at _ _ _ _ _ _ _ _            _ _ Fixed at _ _ _ _ _ _ _ _
      _ _ Configurable, range 1 to 25           X   Configurable, range 1 to 25
                                                                    and infinite

                      Requires Data Link Layer Confirmation:
                              X    Never
                              _ _  Always
                    _ _ Sometimes      If "Sometimes," when?
                    _ _ Configurable   If 'Configurable," how?
```

**Table 14. Device Profile Description—Continued**

```
                  Requires Application Layer Confirmation:
                              _ _ Never
                         _ _ Always (not recommended)
                    _ _ When reporting Event Data (Slave devices only)
                 _ _ When sending multi-fragment responses (Slave devices only)
                     _ _ Sometimes     If "Sometimes," when?
                     X _ Configurable   If "Configurable," how?
```

```
                        Timeouts while waiting for:
    Data Link Confirm          X  None  _ _ Fixed  _ _ Variable  _ _ Config
    Complete Appl. Fragment  X  None  _ _ Fixed  _ _ Variable  _ _ Config
    Application Confirm       _ _ None  _ _ Fixed  _ _ Variable  X  Config
    Complete Appl. Response  X  None  _ _ Fixed  _ _ Variable  _ _ Config
Others _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
                     _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
              Attach explanation if "Variable" or "Configurable" was checked
                        (see Note 1 for explanation)
```

```
                     Sends/Executes Control Operations:
    Write Binary Outputs     X  Never  _ _ Always  _ _ Sometimes  _ _ Config
    Select/Operate           _ _ Never  _ _ Always  X  Sometimes  _ _ Config
    Direct Operate           _ _ Never  _ _ Always  X  Sometimes  _ _ Config
    Direct Operate - NO ACK  _ _ Never  _ _ Always  X  Sometimes  _ _ Config

    Count > 1                X  Never  _ _ Always  _ _ Sometimes  _ _ Config
    Pulse On                 _ _ Never  _ _ Always  X  Sometimes  _ _ Config
    Pulse Off                X  Never  _ _ Always  _ _ Sometimes  _ _ Config
    Latch On                 _ _ Never  _ _ Always  X  Sometimes  _ _ Config
    Latch Off                _ _ Never  _ _ Always  X  Sometimes  _ _ Config

    Queue                    X  Never  _ _ Always  _ _ Sometimes  _ _ Config
    Clear Queue              X  Never  _ _ Always  _ _ Sometimes  _ _ Config

        Attach explanation if "Sometimes" or "Configurable" was checked
                        (see Note 2 for explanation)
```

*TABLE CONTINUED* ▶

**Table 14. Device Profile Description—Continued**

| FILL OUT THE FOLLOWING ITEM FOR MASTER DEVICES ONLY: | |
|---|---|
| Master Expects Binary Input Change Events:<br>_ _ Either time-tagged or non-time-tagged for a single event<br>_ _ Both time-tagged and non-time-tagged for a single event<br>_ _ Configurable (attach explanation) | |
| FILL OUT THE FOLLOWING ITEMS FOR SLAVE DEVICES ONLY: | |
| Reports Binary Input Change Events when no specific variation requested:<br><br>_ _ Never<br>_ _ Only time-tagged<br>X   Only non-time-tagged<br>_ _ Configurable to send both | Reports time-tagged Binary Input Change Events when no specific variation requested:<br>_ _ Never<br>X   Binary Input Change with Time<br>_ _ Bin In Change Relative Time<br>_ _ Configurable (explain) |
| Sends Unsolicited Responses:<br><br>_ _ Never<br>X   Configurable (explain)<br>_ _ Only certain objects<br>_ _ Sometimes (explain)<br>_ _ Enable/Disable Unsolicited<br>Function codes supported<br>(see Note 3) | Sends Static Data in Unsolicited Responses:<br>_ _ Never<br>_ _ When Device Restarts<br>X   When Status Flags Change<br><br>No other options are permitted.<br>(see Note 3) |
| Default Counter Object/Variation:<br>_ _ No Counters Reported<br>_ _ Configurable (explain)<br>X   Default Object - 20<br>Default Variation - 5<br>_ _ Point-by-point list attached | Counters Roll Over at:<br>_ _ No Counters Reported<br>_ _ Configurable (explain)<br>_ _ 16 Points<br>X   32 Points<br>_ _ Other Value _ _ _ _ _ _ _ _ _ _<br>_ _ Point-by-point list attached |
| Sends Multi-Fragment Responses (Slave Only):   X  Yes   _ _ No | |

### Note 1: Timeouts While Waiting for Confirmations

For an unsolicited response when an application layer response confirmation is requested, the switch control waits before sending another response/confirmation attempt (if the retry number has not been reached) or stopping the **Confirmation** process.

Set the **Time Delay Between Retries** function with the setup software or via SCADA. See S&C Instruction Sheet 1045-530, "6800 Series Automatic Switch Controls: *Setup*" for more information.

### Note 2: Control Operations Executed

For all **Binary Output Relay (g12)** operations and **Analog Output (g41)** operations, the supported application layer function codess are:

- **Select (3)**
- **Operate (4)**
- **Direct Operate (5)**
- **Direct Operate No Ack (6)**

The control codes supported for **Binary Output Command** operations are:

| Control Code | TCC Field | Op Type Field |
|---|---|---|
| 0x01 | NUL | PULSE_ON |
| 0x03 | NUL | LATCH_ON |
| 0x04 | NUL | LATCH_OFF |
| 0x41 | CLOSE | PULSE_ON |
| 0x81 | TRIP | PULSE_ON |

For **Binary Output Command** operations, set the **Count** value to "1," **Queue** and **Clear** fields to "0," and **On-Time** and **Off-Time** fields to any valid values. The control will ignore the **On-Time** and **Off-Time** fields in the request. For the **Select** and **Operate** command sequence, the value of the **On-Time** and **Off-Time** fields must match between **Select** and **Operate** requests otherwise the command will not be executed.

For a **Binary Output Command** requests with the **Clear** field set to "1," the control will return a status code 4 [NOT_SUPPORTED] in its response and the operation will not be executed.

For more details on **Binary Output Command** operations, see the "Control Relay Output Block" section in the Object library section of "IEEE std 1815TM-2012."

### Note 3: Unsolicited Responses

The switch control returns unsolicited responses to the configured master station address when a change occurs in any mapped status point or when the device is restarted.

Unsolicited responses must be enabled and disabled in the IntelliLink software. Enable data-filled unsolicited responses from SCADA with function code 20 or disable data-filled unsolicited responses with function code 21.

# DNP Implementation

Table 15 describes which objects and requests this implementation accepts and which responses are returned. **Object**, **Variation**, and **Qualifier** codes in the request must exactly match what is expected; otherwise, the switch control flags an error. All application layer responses use the standard response function code 129.

| Table 15. Implementation | | | | | |
|---|---|---|---|---|---|
| OBJECT | | | REQUEST | | RESPONSE |
| Obj | Var | Description | Func Code (dec) | Qualifier Codes (hex) | Default Var. (hex) |
| 1 | 0 | Binary Input - All Variations | 1 | 06 | |
| 1 | 1 | Binary Input | | | 00 |
| 2 | 0 | Binary Input Change - All Variations | 1 | 06,07,08 | |
| 2 | 1 | Binary Input Change without Time | 1 | 06,07,08 | 17 |
| 2 | 2 | Binary Input Change with Time (see Note 4) | 1 | 06,07,08 | 17 |
| 2 | 3 | Binary Input Change with Relative Time (null response) | 1 | 06,07,08 | |
| 3 | 0 | Double-bit Binary Input - All Variations | 1 | 06 | |
| 3 | 1 | Double-bit Binary Input - Packed Format | | | 00 |
| 4 | 0 | Double-bit Binary Input - All Variations | 1 | 06,07,08 | |
| 4 | 1 | Double-bit Binary Input - Sent without time | | 06,07,08 | 17 |
| 4 | 2 | Double-bit Binary Input - With absolute time | | 06,07,08 | 17 |
| 4 | 3 | Double-bit Binary Input Event - With relative time (null response) | | 06,07,08 | |
| 10 | 0 | Binary Output - All Variations | 1 | 06 | |
| 10 | 2 | Binary Output Status (See Note 5) | | 00,01,06 | 00,01 |

**Table 15. Implementation—Continued**

| Obj | Var | Description | Func Code (dec) | Qualifier Codes (hex) | Default Var. (hex) |
|---|---|---|---|---|---|
| | | OBJECT | REQUEST | | RESPONSE |
| 12 | 1 | Control Relay Output Block | 3,4, 5,6 | 17,28 | echo of request |
| 20 | 0 | Binary Counter - All Variations | 1,7, 8,9,10 | 06 | |
| 20 | 5 | 32-bit Binary Counter without Flag | | | 00 |
| 21 | 0 | Frozen Counter - All Variations | 1 | 06 | |
| 21 | 9 | 32-bit Frozen Counter without Flag | | | 00 |
| 22 | 0 | Counter Change Event - All Variations | 1 | 06,07,08 | |
| 22 | 1 | Counter Event - 32-bit with flag (Note 4) | | 06,07,08 | 17 |
| 22 | 5 | Counter Event - 32-bit | | 06,07,08 | 17 |
| 30 | 0 | Analog Input - All Variations | 1 | 06 | |
| 30 | 4 | 16-bit Analog Input without Flag | | | 00 |
| 32 | 0 | Analog Change Event - All Variations | 1 | 06,07,08 | |
| 32 | 2 | Analog Input Event - 16-bit without time (Note 4) | | 06,07,08 | 17 |
| 32 | 4 | Analog Input Event - 16-bit with time | | 06,07,08 | 17 |
| 40 | 0 | Analog Output Status - All Variations | 1 | 06 | |
| 40 | 2 | 16-bit Analog Output Status | | | 00 |
| 41 | 2 | 16-bit Analog Output Block | 3,4, 5,6 | 17,28 | echo of request |

*TABLE CONTINUED* ▶

## DNP Implementation

**Table 15. Implementation—Continued**

| | OBJECT | | | REQUEST | | RESPONSE |
|---|---|---|---|---|---|---|
| Obj | Var | Description | Func Code (dec) | Qualifier Codes (hex) | | Default Var. (hex) |
| 50 | 1 | Time and Date - Absolute Time | 2 | 07 limited quantity = 1 | | IINs only |
| 50 | 3 | Time and Date - Absolute time at last recorded time | 2 | 07 limited quantity = 1 | | IINs only |
| 60 | 1 | Class 0 Data | 1 | 06 | | |
| 60 | 2 | Class 1 Data | 1 | 06,07,08 | | |
| 60 | 3 | Class 2 Data | 1 | 06,07,08 | | |
| 60 | 4 | Class 3 Data | 1 | 06,07,08 | | |
| 80 | 1 | Internal Indications | 2 | 00 index=7 | | IINs only |
| 102 | 0 | 8-Point Unsigned Integer | 1 | 04 | | 04 |
| 102 | 1 | 8-Point Unsigned Integer | 1,2 | 03,04,05 | | 04 |
| | | No Object | 13 | | | |
| | | No Object | 23 | | | |
| | | No Object | 24 | | | |

### Note 4: Change Event Objects

This is the default object returned in the unsolicited report by exception (if enabled) and the default object for any event data request.

### Note 5: Binary Output Status

In a response to a **Binary Output Status** request, the switch control returns a status byte for each control point available. In this implementation of the **Binary Output Status** object, only the **Online** bit is used. All other bits, including the **State** bit, should be ignored.

The state of all digital bits (controlled and not controlled) can be inspected by using the **Binary Input** object.

### Note 6: Polling Class

DNP points are assigned to polling classes. S&C automation controls implement Class 0 for static data, and Classes 1, 2, and 3 for event data. The Class 0 poll response contains all DNP points that have been assigned to Classes 0, 1, 2 or 3 and their most recent static value. The Class 1, 2 or 3 polls return event data, any DNP point whose value has changed since the last event response message was transmitted. Polling frequency is an aspect of the user's SCADA system and is user selectable.

DNP point mapping is user-configurable, and all points do not need to be mapped. DNP points can be customer assigned to any of the DNP Event Classes 1, 2, and 3.