Slate Firmware 3.20 Release Notes

The 3.20 update is classified as an incremental update to the SLATE system with some improvements that are clearly visible to the user, but many more enhancements "behind the scenes". The revisions codes in this firmware release includes;

- Annunciator - 0102
- Burner Control - 0105
- Fuel Air Ratio - 0104
- Analog I/O - 0104
- Digital I/O - 0102
- Limit - 0104
- Base Module - 0105

Revision numbering overview

Slate module IDs have three parts separated by dots, for example **BCp.0102.01**

BCp – this identifies the module type: BC = Burner Control. ("p" is always present in released modules, it indicates "product".)

0102 – **parameter/data compatibility and revision code**, described below.

01 – version number. This is changed when software is updated without affecting parameters or design compatibility. Examples are an improvement in signal conditioning or fixing a bug.

The **middle number** is the important one for the design. It is advanced when the module definition is changed in a way that affects module configuration or data reporting. Examples are:

- a new parameter is added
- a new choice is added to an existing parameter
- a new event and its event message is added

The major features added to this system release are:

Base Module Updates

The Base Module has had a notable amount of changes to provide additional resources for user wiresheet programming.

- Increased BACnet binding registers from 20 to 40
- Increased wiresheet data registers from 5 to 10
- Added 10 non-volatile wiresheet data registers
- Minor built-in web page enhancements
- Improved ModBus TCP reliability
- General system performance improvements to web responsiveness

Expanded Analog Cell Functions

All modules that include Analog Cell functionality (Analog I/O, Limit, and Fuel Air Ratio) have a few enhanced features:

- Added type R and S thermocouples
- Expanded range of PT-100 sensor to measure up to 850C

Burner Control Updates

Additional configuration options have been added to the Burner Control to cover additional Legacy EC78xx sequences.

- Ability for LCI to cause lockout in Standby
- Option for Dynamic Check on LPP and PPP inputs

Annunciator Dual Path Fixed

Dual Path Annunciator configurations have been improved to properly determine the first out cause.

General System Enhancements and Fixes

Numerous "behind the scenes" enhancements have taken place to improve system stability, security and usability.

Incremental module modifications from the previous revision

Base Module modifications from SBp.0104.01 to SBp.0105.01

Additions and changes:

- Doubled BACnet binding registers from 20 to 40
- Doubled wiresheet register data registers from 5 to 10
- Added 10 new registers for non-volatile wiresheet data
- Added calendar registers for Month, Day and Year
- Optimizations to improve web page responsiveness and performance
- Improved Modbus TCP reliability
- Updated web certificate to address Chrome security warning; Chrome Compatibility service pack no longer required

New Registers

```
r151  - Date month
r152  - Date day
r153  - Date year
r462  - Wiresheet data 6
r463  - Wiresheet data 7
r464  - Wiresheet data 8
r465  - Wiresheet data 9
r466  - Wiresheet data 10
r467  - NV wiresheet data 1
r468  - NV wiresheet data 2
r469  - NV wiresheet data 3
r470  - NV wiresheet data 4
r471  - NV wiresheet data 5
r472  - NV wiresheet data 6
r473  - NV wiresheet data 7
r474  - NV wiresheet data 8
r475  - NV wiresheet data 9
r476  - NV wiresheet data 10
r700  - BACnet bind 21 setup
r701  - BACnet bind 21 status
r702  - BACnet bind 21 data
r703  - BACnet bind 22 setup
r704  - BACnet bind 22 status
r705  - BACnet bind 22 data
r706  - BACnet bind 23 setup
r707  - BACnet bind 23 status
r708  - BACnet bind 23 data
r709  - BACnet bind 24 setup
r710  - BACnet bind 24 status
r711  - BACnet bind 24 data
r712  - BACnet bind 25 setup
```

```
r713  - BACnet bind 25 status
r714  - BACnet bind 25 data
r715  - BACnet bind 26 setup
r716  - BACnet bind 26 status
r717  - BACnet bind 26 data
r718  - BACnet bind 27 setup
r719  - BACnet bind 27 status
r720  - BACnet bind 27 data
r721  - BACnet bind 28 setup
r722  - BACnet bind 28 status
r723  - BACnet bind 28 data
r724  - BACnet bind 29 setup
r725  - BACnet bind 29 status
r726  - BACnet bind 29 data
r727  - BACnet bind 30 setup
r728  - BACnet bind 30 status
r729  - BACnet bind 30 data
r730  - BACnet bind 31 setup
r731  - BACnet bind 31 status
r732  - BACnet bind 31 data
r733  - BACnet bind 32 setup
r734  - BACnet bind 32 status
r735  - BACnet bind 32 data
r736  - BACnet bind 33 setup
r737  - BACnet bind 33 status
r738  - BACnet bind 33 data
r739  - BACnet bind 34 setup
r740  - BACnet bind 34 status
r741  - BACnet bind 34 data
r742  - BACnet bind 35 setup
r743  - BACnet bind 35 status
r744  - BACnet bind 35 data
r745  - BACnet bind 36 setup
r746  - BACnet bind 36 status
r747  - BACnet bind 36 data
r748  - BACnet bind 37 setup
r749  - BACnet bind 37 status
r750  - BACnet bind 37 data
r751  - BACnet bind 38 setup
r752  - BACnet bind 38 status
r753  - BACnet bind 38 data
r754  - BACnet bind 39 setup
r755  - BACnet bind 39 status
r756  - BACnet bind 39 data
r757  - BACnet bind 40 setup
r758  - BACnet bind 40 status
r759  - BACnet bind 40 data
```

New Events

```
53 - Curve set %s NOT loaded into m%d
```

Burner Control Module modifications from BCp.0104.01 to BCp.0105.01

Additions and changes:

- New dynamic check configuration options for both LPP and PPP
- New LCI option to Lockout if open in Standby
- Enhanced flame status troubleshooting with combination flame sensing systems

New Registers

```
r246  - FlameAmp1StatusHistory
r247  - FlameAmp2StatusHistory
r268  - LPP dynamic check enable
r269  - PPP dynamic check enable
```

Changed Register Values

```
r143  LCI/F1 enable
         ValueMax changed to: 4    (Was: 3)

r144  LCI/F2 enable
         ValueMax changed to: 4    (Was: 3)
```

New Events

```
136 - LPP dynamic check failure
137 - PPP dynamic check failure
138 - IR flame amplifier Low 18V
139 - Flame amplifier 1 fault status is %s
140 - Flame amplifier 2 fault status is %s
```

Fuel Air Module modifications from FAp.0103.01 to FAp.0104.01

Additions and changes:

- Improved behavior when using a VFD for Trim
- Added R and S type thermocouples (when using general purpose Analog I/O)
- Improved PT-100 range to 850C (when using general purpose Analog I/O)

Changed Register Values

```
r103  Position confirm
        Name changed to: Reserved 103        (Was: Position confirm)
        DataType changed to: U16             (Was: EnumSingle)

r117  Confirmation enable
        Name changed to: Reserved 117        (Was: Confirmation enable)
        DataType changed to: U16             (Was: EnumSingle)
```

Analog I/O Module modifications from IOA1p.0103.01 to IOA1p.0104.01

Additions and changes:

- Added R and S type thermocouples
- Improved PT-100 range to 850C

Limit Module modifications from LMp.0103.01 to LMp.0104.01

Additions and changes:

- Added R and S type thermocouples
- Improved PT-100 range to 850C