RELEASE NOTES FOR *groov* I/O MODULES FIRMWARE

Document Updated: December 21, 2022

Note: Some bug fixes may require a corresponding groov EPIC firmware update. In these situations, the description will list the corresponding version of groov EPIC firmware required to complete the fix.

Installing a Module Firmware Update

For instructions on installing module firmware, see "Applying a module firmware update" in the *groov* EPIC User's Guide, form 2267.

groov SIMPLE MODULES

groov simple modules are the following modules:

- GRV-IACDCTTLS-24
- GRV-IACHVS-24
- GRV-IACIHVS-12

- GRV-IACIS-12
- GRV-IACS-24
- GRV-IDCIS-12

- GRV-IDCS-24
- GRV-OACIS-12
- GRV-OACS-12

- GRV-ODCIS-12
- GRV-OMRIS-8

Version 1.6f

Released: January 20, 2020

Enhancement

groov simple, GRV-CSERI-4, and GRV-CCANI-2 modules now have Watchdog capabilities.

Version 1.6e

Released: January 9, 2019

Bug Fixes

KB87956 - GRV simple and GRV-CSERI-4 modules auto-identify as being in the wrong position on the chassis

Version 1.4b

Released: May 18, 2018

Initial release.

GRV-IAC-24, GRV-IACI-12 MODULES

Version 1.3b

Released: May 21, 2021

Bug Fixes

- KB88556 - Digital input period measurement feature reports inaccurate value
- KB88608 - Get and Restart Measurement commands don't restart measurement correctly
- KB89055 - Discrete (digital) input channels may not detect on or off latches

Version 1.3a

Released: February 13, 2019

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0k

Released: May 18, 2018

Initial release.

GRV-IACDCTTL-24 MODULES

Version 1.3b

Released: May 21, 2021

Bug Fixes

- KB88556 - Digital input period measurement feature reports inaccurate value
- KB88608 - Get and Restart Measurement commands don't restart measurement correctly
- KB89055 - Discrete (digital) input channels may not detect on or off latches

Version 1.3a

Released: February 13, 2019
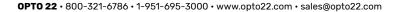
Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0k

Released: May 18, 2018

Initial release.

GRV-IACHV-24, GRV-IACIHV-12 MODULES

Version 1.3b

Released: May 21, 2021

Bug Fixes

- KB88556 - Digital input period measurement feature reports inaccurate value
- KB88608 - Get and Restart Measurement commands don't restart measurement correctly
- KB89055 - Discrete (digital) input channels may not detect on or off latches

Version 1.3a

Released: February 13, 2019

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0k

Released: May 18, 2018

Initial release.

GRV-IDC-24 MODULES

Version 1.3b

Released: May 21, 2021. Section updated: May 17, 2022.

New Feature

A new channel type was added to GRV-IDCI-12 modules: 10—25 VAC. To configure this new channel type, you need firmware 3.3.0 or higher on your GRV-EPIC-PR1 or GRV-EPIC-PR2. To select this channel type in:

- PAC Control, you need PAC Control R10.4 or higher.
- CODESYS, you need Library Package for CODESYS Development System 2.0.3.0 or higher.

Bug Fixes

- KB88556 - Digital input period measurement feature reports inaccurate value
- KB88608 - Get and Restart Measurement commands don't restart measurement correctly
- KB89055 - Discrete (digital) input channels may not detect on or off latches

Version 1.3a

Released: February 13, 2019

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0k

Released: May 18, 2018

Initial release.

GRV-IDCI-12 MODULES

Version 1.3c

Released: December 12, 2022

Enhancement

Updates due to changes in internal hardware.

Version 1.3b

Released: May 21, 2021. Section updated: May 17, 2022.

New Feature

A new channel type was added to GRV-IDCI-12 modules: 10—25 VAC. To configure this new channel type, you need firmware 3.3.0 or higher on your GRV-EPIC-PR1 or GRV-EPIC-PR2. To select this channel type in:

- PAC Control, you need PAC Control R10.4 or higher.
- CODESYS, you need Library Package for CODESYS Development System 2.0.3.0 or higher.

Bug Fixes

- KB88556 - Digital input period measurement feature reports inaccurate value
- KB88608 - Get and Restart Measurement commands don't restart measurement correctly
- KB89055 - Discrete (digital) input channels may not detect on or off latches

Version 1.3a

Released: February 13, 2019

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0k

Released: May 18, 2018

Initial release.

GRV-IDCIFQ-12 MODULES

Version 1.3d

Released: December 21, 2022

Enhancement

Updates due to changes in internal hardware.

Version 1.3c

Released: December 8, 2021

Bug Fixes

KB90069 - Erratic GRV-IDCIFQ-12 frequency readings

Version 1.3b

Released: May 21, 2021

Bug Fixes

- KB88556 - Digital input period measurement feature reports inaccurate value
- KB88608 - Get and Restart Measurement commands don't restart measurement correctly
- KB89055 - Discrete (digital) input channels may not detect on or off latches

Version 1.3a

Released: February 18, 2019

Initial release.

GRV-IDCSW-12 MODULES

Version 1.3b

Released: May 21, 2021

Bug Fixes

- KB88556 - Digital input period measurement feature reports inaccurate value
- KB88608 - Get and Restart Measurement commands don't restart measurement correctly
- KB89055 - Discrete (digital) input channels may not detect on or off latches

Version 1.3a

Released: October 31, 2019

Initial release.

GRV-IICTD-12 MODULES

Version 1.3b

Released: April 18, 2019

Bug Fixes

KB88228 - GRV-IV-24, GRV-IMA-24, GRV-IICTD-12: Readings may spike

Version 1.3a

Released: February, 2019

Initial release.

GRV-IMA-24 MODULES

Version 1.3c

Released: August 31, 2022

Updates due to changes in internal hardware.

Version 1.3b

Released: April 18, 2019

Bug Fixes

KB88228 - GRV-IV-24, GRV-IMA-24, GRV-IICTD-12: Readings may spike

Version 1.3a

Released: February 13, 2019

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0l

Released: May 18, 2018

Initial release.

GRV-IMAI-8 MODULES

Version 1.3e

Released: October 5, 2022

Enhancement

Updates due to changes in internal hardware.

Version 1.3d

Released: August 13, 2020

Bug Fixes

KB89178 - GRV-IMAI-8 Module Refreshing at Incorrect Rate

Version 1.3c

Released: February 5, 2020

Enhancement

Minor changes to improve calibration at manufacturing time.

Version 1.3b

Released: April 19, 2019

Initial release.

GRV-IRTD-8 MODULES

Version 1.3e

Released: October 7, 2022

Enhancement

Updates due to changes in internal hardware.

Version 1.3c

Released: December 29, 2021

Bug Fix

KB89041 - GRV-IRTD-8 channels may randomly return QNANs

Version 1.3b

Released: October 28, 2019

Initial release.

GRV-ITM-12 MODULES

Version 1.3f

Released: October 31, 2022

Enhancement

Updates due to changes in internal hardware.

Version 1.3e

Released: June 23, 2021

Bug fixes

KB89681 - GRV-ITM-12: Type K thermocouple channels read about 300 degrees C at room temperature.

KB89802 - GRV-ITM-12 module disconnects and reconnects at random times.

Version 1.3c

Released: February 19, 2021

Enhancement

For ITS-90 Type B thermocouples, the module will report the temperature from 0 °C to 90 °C. Previously, the module would report QNAN for temperatures falling within this range. Temperatures below 0 °C will continue to report QNAN. Please note that the accuracy and resolution specifications stated in the specification table have not changed.

Version 1.3b

Released: December 9, 2019

Initial release.

GRV-ITMI-8 MODULES

Version 1.4f

Released: November 15, 2022.

Enhancement

Updates due to changes in internal hardware.

Version 1.3c

Released: February 19, 2021

Enhancement

For ITS-90 Type B thermocouples, the module will report the temperature from 0 °C to 90 °C. Previously, the module would report QNAN for temperatures falling within this range. Temperatures below 0 °C will continue

to report QNAN. Please note that the accuracy and resolution specifications stated in the specification table have not changed.

Version 1.3b

Released: May 29, 2020

Bug Fixes

KB88652 - Configured for type B, provides mV instead of temperature

Version 1.3a

Released: February 13, 2019

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.2d

Released: May 18, 2018

Initial release.

GRV-ITR-12 MODULES

Version 1.4d

Released: November 15, 2022.

Enhancement

Updates due to changes in internal hardware.

Version 1.4c

Released: March 4, 2022.

Bug Fix

KB90167 - GRV-ITR-12: Channels configured as "Thermistor" or "0–400k Ohms (auto-range)" may show "Invalid Value"

Version 1.4b

Internal beta.

Version 1.4a

Released: September 1, 2021.

Enhancements

Two new channel types have been added to help decrease data refresh time and step input response time:
- You can choose a *FastADC* channel type on channel 0 to double the analog-to-digital conversion rate for the entire module. (Note that this reduces accuracy by 0.5%.)
- You can specify the Disabled channel type on unused channels to disable analog-to-digital conversion for that channel to decrease data refresh time.

Version 1.3d

Released: May 19, 2021. Updated: May 28, 2021.

Bug Fix

KB89749 - A channel with no input connected changes reading of next channel in the group with valid resistive input connected

Version 1.3c

Released: June 25, 2020

Bug Fix

KB88909 - groov Manage Shows "Server Offline" When Configuring GRV-ITR-12

Version 1.3a

Released: May 29, 2019

Initial release.

GRV-IV-24 MODULES

Version 1.3c

Released: September 14, 2022

Enhancement

Updates due to changes in internal hardware.

Version 1.3b

Released: April 18, 2019

Bug Fixes

KB88228 - GRV-IV-24, GRV-IMA-24, GRV-IICTD-12: Readings may spike

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Version 1.3a

Released: February 13, 2019

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0l

Released: May 18, 2018

Initial release.

GRV-IVAPM-3 MODULES

Version 1.3d

Released: November 30, 2022.

Bug Fixes

Updates due to changes in internal hardware.

Version 1.3c

Released: May 31, 2022.

Bug Fixes

KB90307 - GRV-IVAPM-3 not always recognized after hot swap

Version 1.3b

Released: October 29, 2021.

Initial Release

GRV-IVI-12 MODULES

Version 1.3e

Released: October 5, 2022

Enhancement

Updates due to changes in internal hardware.

Version 1.3c

Released: February 5, 2020

Enhancement

Minor changes to improve calibration at manufacturing time.

Version 1.3b

Released: October 28, 2019

Initial release.

GRV-IVIRMS-24 MODULES

Version 1.3c

Released: February 17, 2020

Initial release.

GRV-MM1001-10 MODULES

Version 1.3d

Released: October 14, 2022

Enhancement

Updates due to changes in internal hardware.

Version 1.3c

Released: February 9, 2022

KB90158 - *groov* Manage reports error when selecting 4–20 mA on GRV-MM1001-10 module

GRV-OAC-12, GRV-OACI-12 MODULES

Version 1.3c

Released: July 20, 2021

Bug Fixes

KB88962 - TPO Channel's State Does Not Change With Percentage (Duty Cycle) of 100%, 0%, or Less Than 0%

Version 1.3b

Released: October 14, 2019. Section updated: May 31, 2022.

Bug Fixes

KB88434 - Pulses may not start for *groov* digital output channels configured for TPO. You need to apply the *groov* EPIC firmware update 1.4.3-b130 (or higher) to completely fix this bug. See the *groov* EPIC Firmware readme.

Version 1.3a

Released: February 13, 2019

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0l

Released: August 2, 2018. Section updated: May 31, 2022.

Bug Fixes

KB87499 - The TPO feature on *groov* digital output modules behaves inconsistently. (You need to apply the *groov* EPIC Firmware Update 1.1.0-b47 (or higher) to completely fix this bug. See the *groov* EPIC Firmware readme.)

KB87618 - groov EPIC AC output digital modules briefly show quality code 9

Version 1.0k

Released: May 18, 2018

Initial release.

GRV-ODCI-12 MODULES

Version 1.3d

Released: July 20, 2021

Bug Fixes

KB88962 - TPO Channel's State Does Not Change With Percentage (Duty Cycle) of 100%, 0%, or Less Than 0%

Version 1.3c

Released: October 14, 2019. Section updated: May 31, 2022.

Bug Fixes

KB88434 - Pulses may not start for *groov* digital output channels configured for TPO. You need to apply the *groov* EPIC firmware update 1.4.3-b130 (or higher) to completely fix this bug. See the *groov* EPIC Firmware readme.

Version 1.3b

Released: June 17, 2019

Enhancement

Optimized TPO performance.

Version 1.3a

Released: August 2, 2018

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0l

Released: August 2, 2018. Section updated: May 31, 2022.

Bug Fixes

KB87499 - The TPO feature on *groov* digital output modules behaves inconsistently. (You need to apply the *groov* EPIC Firmware Update 1.1.0-b47 (or higher) to completely fix this bug. See the *groov* EPIC Firmware readme.)

Version 1.0k

Released: May 18, 2018

Initial release.

GRV-ODCSRC-24 MODULES

Version 1.3d

Released: July 20, 2021

Bug Fixes

KB88962 - TPO Channel's State Does Not Change With Percentage (Duty Cycle) of 100%, 0%, or Less Than 0%

Version 1.3c

Released: October 14, 2019. Section updated: May 31, 2022.

Bug Fixes

KB88434 - Pulses may not start for *groov* digital output channels configured for TPO. You need to apply the *groov* EPIC firmware update 1.4.3-b130 (or higher) to completely fix this bug. See the *groov* EPIC Firmware readme.

Version 1.3b

Released: June 17, 2019

Enhancement

Optimized TPO performance.

Version 1.3a

Released: August 2, 2018

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0n

Released: August 2, 2018. Section updated: May 31, 2022.

Bug Fixes

KB87499 - The TPO feature on *groov* digital output modules behaves inconsistently. (You need to apply the *groov* EPIC Firmware Update 1.1.0-b47 (or higher) to completely fix this bug. See the *groov* EPIC Firmware readme.)

Version 1.0k

Released: May 18, 2018

Initial release.

GRV-OVMAILP-8 MODULES

Version 1.3c

Released: November 8, 2022

Enhancement

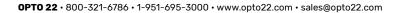Updates due to changes in internal hardware.

Version 1.3b

Released: May 17, 2018

Bug Fixes

KB88290 - GRV-OVMAILP-8: If hot-swapped, could cause continuous resetting of PR1

Version 1.3a

Released: April 16, 2018

Initial release.

GRV-OVMALC-8 MODULES

Version 1.3b

Released: August 31, 2022

Updates due to changes in internal hardware.

Version 1.3a

Released: August 2, 2018

Enhancements

Optimized communication with GRV-EPIC-PR1.

Version 1.0f

Released: May 18, 2018

Initial release.

GRV-CCANI-2 MODULES

Version 1.0c

Released: March 18, 2020

Bug Fix

KB89594 - CODESYS May Not Recognize GRV-CCANI-2 Ports After Power-Up

Version 1.0b

Released: January 20, 2020

Enhancement

groov simple, GRV-CSERI-4, and GRV-CCANI-2 modules now have Watchdog capabilities.

Version 1.0a

Released: December 18, 2019

Initial release.

GRV-CSERI-4 MODULES

Version 1.6f

Released: January 20, 2020

Enhancement

groov simple, GRV-CSERI-4, and GRV-CCANI-2 modules now have Watchdog capabilities.

Version 1.6e

Released: January 9, 2019

Bug Fixes

KB87956 - GRV simple and GRV-CSERI-4 modules auto-identify as being in the wrong position on the chassis

Version 1.6b

Released: May 18, 2018

Initial release.

HOW TO GET HELP

If you have any questions about the groov I/O modules, you can call, fax, or e-mail Opto 22 Product Support:

Phone: 800-TEK-OPTO (800-835-6786 toll-free in the U.S. and Canada)
              951-695-3080
              Monday through Friday, 7 a.m. to 5 p.m. Pacific Time

E-mail: support@opto22.com

Website: www.opto22.com

When calling for technical support, be prepared to provide the following information about your system to the Product Support engineer:

- Version information for *groov* EPIC, PAC Control Engine, *groov* View, *groov* Manage, and, if applicable, Node-RED and Ignition Edge.
- A description of your system equipment:
  - Computer CPU type, speed, memory, and operating system
  - *groov* EPIC processor model and firmware version
  - *groov* I/O module types and their firmware versions
  - A description of your Setup and Configuration: how it is connected, the purpose of each device, external connections, and networks
  - Specific error messages or other diagnostic indications

Finding *groov* I/O Module Firmware Version Number

You can find the version numbers for the *groov* I/O module firmware by:

1. Logging into your *groov* EPIC processor as a user with system administrator permissions.
2. Click or tap on I/O.
3. Click or tap on the module.
4. Click or tap on the Info tab, then Details. The firmware version is listed on the Firmware field.

OPTO 22 · www.opto22.com
43044 Business Park Dr. Temecula, CA 92590-3614

SALES · sales@opto22.com
800-321-6786 • 1-951-695-3000

SUPPORT · support@opto22.com
800-835-6786 • 1-951-695-3080

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