

## 140CPU65xx0 firmware history



| Version #        | Enhancement |            |  |
|------------------|-------------|------------|--|
|                  | OPR/PCR #   | bFO Case # | Description  |
| V3.53<br>(05/19) | PEP0533044R | 52433757   | Fixes the disable of the Time Stamping of BMXERT when there are more than 16 ERTs on the whole system. |

| Version #        | Enhancement |            |  |
|------------------|-------------|------------|--|
|                  | OPR/PCR #   | bFO Case # | Description  |
| V3.52<br>(11/18) | PEP0432697R | 42543071   | Fixes the fail to initial the action variable of SFC after the upgrade of CPU from SV < 3.50 to SV3.50. Note that this issue only appears with SV3.50. |
|                  | PEP0439147R | 44108698   | Fixes the Quantum CPUs crashed due to HMI Vijeo Designer write to located variables.   |
|                  | PEP0439440R |            | Improves cybersecurity features regarding Run/Stop input and reservation mechanism management.   |
|                  | PEP0447659R |            | Improves cybersecurity regarding CPU memory robustness   |

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|------------------|-------------|------------|---|
|                  | OPR/PCR #   | bFO Case # | Description   |
| V3.50<br>(05/17) | PEP0314683R | 23707243   | Fixes a situation where some variables are staying at 0 value and this not possible to modify them by application. This situation might appear if those variables are set in a SFC step and when an initialization of this SFC is done by "INITCHAR" FB . |
|                  | PEP0363240R | 32447233   | Improvement: in the LCD menu, "PLC" term (Programmable Logic Controller) is now replaced by "PAC" (Programmable Automation Controller)  |

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|                  | OPR/PCR #   | bFO Case # | Description  |
| V3.42<br>(08/16) | PEP0328304R |            | Robustness improvement versus random communication requests cyber security stress tests. |

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|           | OPR/PCR #   | bFO Case # | Description   |
| V3.41     | PEP0294163R | 18824515   | Fixes the exception controlled state ("EC02") that might result if a fragmented application (more than 15%) is packed in the Standby PLC memory.                                  |
|           | PEP0309130R | 22735165   | Using a Unity Pro V7.0 or lower with "forced bit" table (not in animation table), the exception controlled state ("EC02") that could appear after a CPU power cycle is now fixed. |
|           | PEP0319151R | 22520641   | Robustness enhancement in regards with corrupted packet received  |
|           | PEP0318698R | 23324931   | Fixes the fact that some data of the Ethernet MBP_MSTR function bloc buffer might appear invalid if several are used consecutively.   |
|           | PEP0329060R | 26986997   | Fixes the connection issue with UPV7.0 on a SV3.40 PLC Quantum .  |

- Note that the version SV3.40 is no more available in "Schneider Electric - Shopping Kiosk" and on "Schneider-electric.com" due to the fact that it is not usable with Unity Pro version 7 (impossible to connect)

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|-----------|-------------|--------------------------|--|
|           | OPR/PCR #   | bFO Case #               | Description  |
| V3.30     | PEP0138835R | 03281341                 | Fixes the failure of the application download when PCMCIA flash memory card configured                             |
|           | PEP0258046R | 07192522                 | Fixes the "EC0E"error code during MOL (online modification) in a very specific complex application from a customer |
|           | PEP0286815R |                          | Quantum CPU support for local specific module dedicated to Chinese market (140NOP)                                 |
|           | PEP0283873R | <a href="#">Internal</a> | Implement the ANYBOOL function supported by Unity V10  |
|           | PEP0292401R | 17004912                 | Fixes the abort function of MBP_MSTR that did not work as expected.  |
|           | PEP0294104R | 18712784                 | Fixes the wrong running of the Unity Pro DFB icon .  |

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|           | OPR/PCR #   | bFO Case # | Description   |
| V3.22     | PEP0264587R | 08027628   | New system bit %S84 in help of %S83 for RIO management on HSBY with S908 or /and QEIO .Have a look either on FA234890 or on the attached document , this, waiting for documentation implementation in Unity Pro help. |

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|-----------|-------------|------------------------------------|---|
|           | OPR/PCR #   | bFO Case #                         | Description   |
| V3.21     | PEP0265389R | <u>09498729</u><br><u>07859551</u> | Fixes a problem of Ethernet explicit communication frozen through module <b>140NOE771x1</b> |

V3.20 version is no more available because of troubles on a Hotstandby system (\*), Primary and Secondary PLCs in Run, we observe that MBP\_MSTR, and other communication blocks (read\_reg, write reg, cread\_reg, cwrite reg \_ ....), get stuck when used with Quantum HSBY via 140NOE771X1

|       | Enhancement                |            |   |
|-------|----------------------------|------------|---|
|       | OPR/PCR #                  | bFO Case # | Description   |
| V3.20 | PEP0203953R                | 04842069   | Avoid a "reserved by empty" message due to legacy concept request before a connection with UPro.  |
|       | PEP0173584R                |            | Fixes the V0.00 wrong Quantum HSBY copro display .  |
|       | PEP0062131R                | V-1430851  | Fixes the Update Init values with current ones not reported in the secondary CPU of a Quantum HSBY.   |
|       | PEP0057845R                | 00695885   | Fixes the problem of Connection reserved by empty because of too much access requested .  |
|       | PEP0177547R                | 04319197   | Avoid the multiple retries on primary to standby application transfer.  |
|       | PEP0228786R<br>PEP0167264R | 04050983   | Implementation of the %S83 allowing the Quantum Hot Standby to remain primary on ERIO loss .<br>Please have a look on addendum in section "Description of System Bits %S80 to %S97" |
|       | PEP0171422R                | 0418801    | Fixes a dead code using MBP_MSTR with a lenght of 125.  |

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| Version # | Enhancement |            |   |
|-----------|-------------|------------|---|
|           | OPR/PCR #   | bFO Case # | Description   |
| V3.13     | PEP0199427R | 05192315   | Fixes a regression in the HotStandby data transfer introduced in V3.12. |

V3.12 version is no more available and should not be used anymore on hot standby system due to unexpected behaviour of the application after a switch over, on a specific case. This regression is fixed by V3.13.

| Version # | Enhancement |                 |   |
|-----------|-------------|-----------------|---|
|           | OPR/PCR #   | Vantive Case #  | Description   |
| V3.12     | PEP0103677R | 1469159         | Fixes the ERR65 that randomly happens during transfer of application from Primary to Stdbby.  |
|           | PEP0106342R | 1480762         | Allows the Modification On Line with a EPROM PCMCIA on board.   |
|           | PEP0084889R |                 | Add of run/stop protection mode on HE CPU Quantum, no run/stop command allowed while key switch is locked ( memory protection is ON). |
|           | PEP0131286R | 1508221         | Fixes a problem of HALT happening on synchronous starts.  |
|           | PEP0136431R | 1511026         | Fixes a problem of address switching for the NOM21200.  |
|           | PEP0106590R | 1481524         | Fixes the problem of IO system word in case of S800 used, %S118 is correctly managed.   |
|           | PEP0089135R | 1463382         | Slightly Improves the Hot Standby scan time comparing to V3.10 in case of massive use of unlocated data.                              |
|           | PEP0122880R | bFO<br>02973973 | Fixes the application transferring from Primary to Stdbby even if OS versions are different.  |

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|-----------|--------------------------|--------------------|---|
|           | OPR/PCR #                | Vantive Case #     | Description   |
| V3.10     | 20048372/PE<br>P0047851R | Vantive<br>1326796 | Fix DiagViewer that does not display messages and symbols for instances bigger than 254 in a single section                           |
|           | PEP0048301R              | None               | Fixes the problem of display of copro version : 00.00 instead of actual version number .  |
|           | PEP0065713R              | bFO<br>00918452    | Fixes the ERR65 seen on the Standby PLC after a swap by stopping the Primary PLC.   |
|           | PEP0068930R              | bFO<br>01307949    | Fixes the problem of the management of the four words dedicated to the MBP_MSTR function block diagnostic using the function code 9 . |
|           | PEP0071600R              | bFO<br>01223706    | Fixes the lost of IO during switchover while disconnecting the coax on CRP.   |
|           | PEP0073093R              | Vantive<br>1451850 | Fixes the lost of digital input of RIO drop during several cycles after a stop/run of the Primary CPU.                                |
|           |                          | 06972745           | Fixes a CPU stop with "EC0X" error code linked to the use of the list of forced bits !  |

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| Version # | Enhancement |   |  |
|-----------|-------------|---|--|
|           | OPR/PCR #   | Vantive Case #  | Description  |
| V3.00     | None        | -   | Increases the data exchanges up to 1.5 Mbytes for 140 CPU 67261 HSBY PLC.                      |
|           | None        | -   | Status of the remote PLC is displayed on the LCD screen.                                       |
|           | None        | -   | New features and improvements for Data Dictionary.   |
|           | None        | -   | Integration of the Quantum Ethernet IO offer   |
|           | 20047829    | 1295210   | Fixes error code "EC0E" when build changes is done after refining a DFB.                       |
|           | PEP0023023R | -   | Adds new operation code 15 (Modbus request) in the use of MSTR bloc function.                  |
|           | PEP0023785R | 1158549.  | Allows A/B assignment using Keypad.  |
|           | PEP0029147R | -   | Improves the capacity for Modbus client messaging up to 125 registers.                         |
|           | PEP0029275R | 1208026   | Fixes MAC address display issue on the LCD screen.   |
|           | PEP0033350R | 1239056   | Fixes the impact of CCOTF option on TMAST duration.  |
|           | PEP0035044R | 1247495   | Fixes NOE reboot issue on stop/run transition.   |
|           | PEP0035176R | 1253065   | New option in Unity Pro V6.0 to reset %M after a warm start and a stop/run transition.         |
|           | PEP0036399R | -   | Fixes a refresh problem in Data Dictionary for variable names starting by a number e.g.: 1_XX. |
|           | PEP0036615R | 1267934   | Fixes an issue on DDO outputs after a switchover.  |
|           | PEP0037384R | 1274986   | Fixes the Standby to Offline mode transition issue when the watchdog is reached.               |
|           | PEP0038276R | 1250784   | Fixes a CPU error following a on line modification of a DDT variables.                         |
|           | PEP0038570R | 1283576   | Fixes flickering leds on DDO36400 configured on main rack.                                     |
|           | PEP0036196R | 1262855   | Fixes a temporary loss of RIO drops after a switchover following a CPU primary issue.          |
|           | PEP0041011R | 1307217   | Fixes a Standby CPU HALT issue because of overruns.  |
|           | 00053358    | -   | Fixes a file generation issue when uploading Quantum Copro Hot Standby firmware via OSLoader.  |
| 00055304  | -           | Fixes an issue on DDO Fallback mode after a CCOTF modification. |  |

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|-----------|-------------|----------------|---|
|           | OPR/PCR #   | Vantive Case # | Description   |
| V2.80     | PEP0014257R | -              | Fixes a display of coprocessor version 00.00 on power on.   |
|           | PEP0019824R | 1127963        | Fixes the problem of duplicate IP address on NOE (and also on MB and MB+) in case of some separate power cycle between Primary and Standby when Optic Fiber is disconnected |
|           | PEP0023525R | -              | Add bit status register %SW61.6 to improve HSBY diagnostic  |
|           | PEP0026068R | 1181411        | Improves the CPU robustness in case of wrong OFS requests (bad size of the requests)  |
|           | 20045638    | -              | Improves NOE's performances with OFS Server (up to 12 messages of 1024 bytes per PLC scan) (needs synchronization with Unity Pro V 5.0 and NOE V4.60)                       |
|           | PEP0027709R | 1191284        | Fixes a random error (code 04FE) after an application transfer from Primary to Standby  |
|           | PEP0014175R | 1094809        | Fixes the %SW61.4 toggles once a build change is downloaded to the CPU  |
|           | PEP0024446R | 1164695        | Improves the CPU robustness in case of a corrupted Unity Application  |
|           | PEP0026311R | 1179797        | Fixes a randomly non update of %SW50 to %SW53 time and date words via %S50  |
|           | PEP0012604R | 1082663        | Improves the Init command to allow the CPU to run on line after a CRP error   |

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|-----------|-------------|--|---|
|           | OPR/PCR #   | Vantive Case #   | Description   |
| V2.70     | None        | -  | Allows configuration changes on the fly (CCOTF) on Quantum Hot Standby PLC (needs synchronization with Unity Pro V4.1, CRP firmware version 2.0 and CRA firmware version 2.0) |
|           | PEP0017168R | 1113564  | Improves the operating mode of XXMIT block, especially after XXMIT block parameter changes  |
|           | PEP0015872R | -  | Prevents the application transfer from Primary to Standby CPUs, when the Standby CPU is reserved by Unity Pro   |
|           | PEP0015874R | 1106879  | Avoids a temporary offline state of the Standby PLC after an application transfer from Primary to Standby PLCs  |
|           | PEP0015691R | -  | Fixes a random bad display of the Mac Address on Quantum LCD display after a power on in No Conf state  |
|           | PEP0015477R | 1046800  | Fixes a CPU issue due to the use of a memory size of structured type instances higher than 1Mbytes  |
|           | PEP0014985R | 1097690  | Enables MBP_MSTR with Function Code 23 for TCP/IP on NOE modules  |
|           | PEP0013040R | -  | Improvement of the application transfer from Primary to Standby PLCs in presence of more than two communication modules   |
|           | PEP0011826R | 1070110  | Displays the correct status bytes of the local IO modules in a Standby Rack, under Unity Pro  |
|           | 20044842    | 1072807  | Improves signal management (RTS/CTS) when XXMIT is used with modems   |
|           | 20044469    | -  | Fixes an unexpected disconnection of Unity Pro when a lot of sections are open (in synchronization with Unity Pro 4.1)  |
|           | 20040480    | 994155   | Possibility to perform a cold start instead of a warm start through a new option in Unity Pro V4.1  |
|           | 20043798    | -  | Solves an issue where after a cold start, warm starts behave as cold starts, when the "automatic start in Run" option is checked  |
|           | 20043371    | -  | Fixes a bad display of the data in the PLC Screen under Unity Pro after the creation of a Fast or Aux task in online mode   |
|           | 00045413    | -  | Fixes a bug in the change of a 140HLI34000 configuration parameter after a Build Changes in stop mode   |
|           | 00046537    | -  | Fixes a bug of erasing the forced bits table when user unforces an input  |
| 00044114  | -           | Improves the robustness of XXMIT block during switchover |   |



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|           | OPR #                | Vantive Case #  | Description  |
| V2.61     | 20043797             | 1081706<br>1055139  | Improves the robustness of the CPU against Scada wrong requests through OFS.   |
|           | 20043584             | -   | Solves an issue of LCD freeze in initializing phase at start up.   |
| V2.60     | 20043584             | -   | Enhancement of the LCD Display behaviour during the initializing phase of the CPU  |
|           | 20043452             | 1047309   | Stabilizes the Primary CPU state in case of a Standby CPU defect   |
|           | 00040858             | -   | Copro Version displayed in %SW150 of the Standby Processor   |
|           | 20043283             | 1046165   | Avoids Halt state of the Standby Processor after power on  |
|           | 20043322             | 1047786   | Improve the data exchange between Primary and Standby CPUs   |
|           | 00024503             | -   | Improve the behaviour of Application Mismatch System word (%SW61.4)  |
|           | 20043400             | 1050503   | Improve the behaviour of the %S16 bit to detect a failure of an IO Module  |
|           | 20043384             | 1049610   | Improve the forcing of 140DDI35300 inputs  |
|           | 20042778             | -   | Improve the behaviour of the ERT_854_10 function block in case of HSBY switchovers                                       |
|           | 20042555             | -   | Improvement of remote IO management while the PLC is in offline mode   |
|           | 20043016             | 1044682   | Improvement of the application transfer in a HSBY System   |
|           | 00039401             | -   | Improves the fallback management when "Maintain Value" is chosen in a MB+ Peercop configuration                          |
|           | 20037280             | -   | Fix duplicate IP addresses issue on NOE modules in a HSBY System (requires also synchronisation with NOE firmware V4.30) |
|           | 20037814             | 1044908<br>959450   | Improvement of the HSBY system IO management after a switchover  |
|           | 20042220             | 1022853   | Avoids an Offline State of the Standby CPU when both CPU are powered on at the same time.                                |
|           | 00038547<br>00039226 | -   | Improve the monitoring of RIO communication through System Words in case of Hot Standby System without Rio Drop          |
|           | 20040961             | 1002625   | Improves the behaviour of the CPU if drop address above 65 is used on the 140NOG11100                                    |
| 20041806  | -                    | Implementation of Data Management (requires also synchronisation with Unity Pro V4.0 and application level 2.6) |  |
| 20041892  | -                    | Improvement of the behaviour of the CPU when PCMCIA is inserted   |  |

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|           | OPR #       | Vantive Case #    | Description   |
| V2.50     | 00039336    | -                 | Memory management improvement when duplication of instance of EFB during change on line   |
|           | 20034692    | 1020418<br>914874 | Displays correctly the Copro version on LCD display   |
|           | 20037920    | 960780            | New %S79 system bit: enables/disables to change value of forced bits through Modbus SCADA requests                                      |
|           | 20039015    | 975816            | New message displayed on LCD to wait for the complete HSBY application transfer: "Retry - please wait"                                  |
|           | 00037660    | -                 | Creation of two new system words %SW64 and %SW65 automatically transferred from Standby to Primary at each scan for diagnostic purpose. |
|           | 20039855    | 999812<br>984355  | Allows to configure a HSBY system without RIO drop (requires also synchronisation with Unity Pro V3.1 application level)                |
|           | 20040555    | 997002            | Corrects the behaviour of TON Function Block after a cold start   |
|           | 20040552    | 996429            | Avoids PLC to HALT in case of particular combination of SFC steps (MSTEP, Pjoint, OutStep)  |
|           | 20039885    | 984839            | Stabilises application when executing imbrication of XOR logic  |
|           | 20036685    | 939744            | RTS/CTS control available by setting bit 5 in XXMIT command word using new RTS/CTS cables   |

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|           | OPR/PCR #   | Vantive Case #  | Description  |
| V2.42     | 20041525    | 1011099   | Fixes an issue when upgrading a Hot Standby firmware (without stopping the process) to v2.40 or v2.41 and using forced bits and timers |
| V2.41     | 20040658    | 993991  | Keypad and LCD driver synchronisation  |
| V2.40     | 20034798    | 910764<br>935452  | %SW50 updated every 200ms rather than every 1s   |
|           | 00034773    | -   | Corrects Force/Unforce behaviour in Unity Pro monitoring application mode  |
|           | 20036312    | 925187  | Avoid double alarm display in the Magelis alarm viewer   |
|           | 20034622    | 926593<br>906907  | Synchronize NTP time and PLC RTC clock   |
|           | 20032373    | 941265<br>851738  | Modbus function codes 05 and 15 guarantee responses and avoid communication issues   |
|           | 20034692    | 914874  | HSBYCopro version displayed on LCD   |
|           | 00032767    | -   | %SW48 counts the events generated by counting modules  |
|           | 20037348    | 958360<br>952198  | Allows the refreshment of Unity Pro animation table when deploy ComNS DDT  |
|           | 00033354    | -   | RUN/STOP input is checked even when a RUN command is issued from Unity Pro PLC Screen  |
| 20036432  | -           | %S21 set to 1 after power restart when Autostart option is configured |  |

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|           | OPR #                            | Vantive Case #   | Description   |
| V2.32     | 20024171                         | -                | Firmware change according to new kind of RAMs   |
| V2.31     | 20036980                         | 945578           | Increase robustness if on line modification is intensively used   |
|           | 20036868                         | 943932           | DFB / EFB diagnostic messages enhancement for special logic in edges  |
|           | 20037460                         | 954868           | Corrects behaviour of "TON" function block during switchover  |
| V2.30     | 20024362                         | -                | Xmit function available on Quantum Unity CPU  |
|           | 20026019<br>20033593<br>20033607 | 894657<br>906522 | Stabilizes CPU during the first scan cycle after PLC is powered on.   |
|           | 20026097                         | -                | Improves downloading project via Modbus+ through NOM module   |
|           | 20030123                         | 939780<br>878810 | Avoids PLC to HALT in case of use of SFC when MACRO combining parallel branches and simultaneous conditions (stop code SW125 = 0x93F4). |
|           | 20030402                         | 881604           | Temperature value provided by 140ARI03010 in a RIO rack is expressed according to the selected resolution.                              |
|           | 20031058                         | -                | The MAC address returned by MBP_MSTR with code request 3 (read local statistic) is the right one.                                       |
|           | 20032027                         | 893240           | Avoids untimely loss of I/O Interrupts when using 140HLI34000 module  |
|           | 20032618                         | 898878           | Improves on-line modification in Primary CPU in HSBY configuration  |
|           | 20032767                         | 901322           | Correct Watchdog overrun of the standby CPU during application transfer in HSBY configuration.  |
|           | 20033358                         | 904997           | Allows to insert modules in a random order in the backplane   |
|           | 20033647                         | 903545           | 'Update Init Values with Current Values' reduces the scan time increase.  |
| V2.23     | 20033892                         | 911081<br>912272 | Corrects a diagnostic function issue causing bits forced  |
|           | 20033974                         | 911810           | Correction of wrong memory area initialization issue  |

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|           | OPR #       | Vantive Case #   | Description   |
| V2.11     | 20026103    | -                | HSBY Copro version accessible from Keypad display   |
|           | 20029657    | 885109<br>874027 | CPU Modbus plus port accepts more than 12 modules in a DIO drop.  |
|           | 20028238    | 858833           | OS loader allows to upload exec (OS) from Quantum PLC to PC   |
|           | 20030379    | 883390<br>882652 | Improves robustness of CPU when many variables are added on EF in very complex logic and just after a the build change                  |
| V2.10     | 20023502    | -                | Improve application change in Standby CPU in a HSBY configuration   |
|           | 20023521    | -                | CPU now restarts after sending the init command from the keypad   |
|           | 20026039    | -                | Limits the possibility of writing according to the configured size (Data storage)   |
|           | 20026212    | 839732           | Correct display value for MODBUS serial address (bridge mode) in Standby PLC  |
|           | 20026692    | -                | Allows many viewers to be connected to PLC Diag Buffer  |
| V2.03     | 20026957    | 847627           | Corrects Health status for 140CPS12420 redundant power supply (that was staying in state 1 when the module was unpowered or has failed) |
| V2.02     | 20026602    | 844139           | Corrects Modbus write function (code 05d)   |
| V2.01     | 20026055    | -                | Allows connexion to a RS485 MODBUS network including other PLCs   |
|           | 20026077    | 811510           | Corrects bad behaviour of Standby RIO disconnection.  |
|           | 20026104    | -                | Corrects reset of %SW60.1 and %SW60.2 (cause the CPU to go standby rather than Off-line)  |
| V2.0      |             |                  | <b>Initial version</b>  |