

=> PXP028rev186(Firmware MPS system ck=34FB-AE04)(scma,201025,scma).zip
Including PXP028.. and PXP2-028..

- A delay of a few seconds has been added to the rectifier shutdown when the local/remote EPO command is activated, while the UPS output shutdown remains immediate.

That delay is used to extend the duration of the battery disconnect switch "command OFF" on "UL" UPSs and also is useful on other UPSs that use the optional battery disconnect switch.

- In parallel systems with "UPS OFF" command propagation enabled with code 421721, when the remote "EPO" command is present only on the master, the "SYSTEM OFF COMMAND ACTIVE; (EPO)" message is activated on the slave units as well.

Furthermore, the panel reset command is blocked on all units when the remote/local EPO command remains present, even on just one master or slave unit.

- Two new custom UPSs type n.35 and n.36

=> PXP028rev185(Firmware MPS system ck=7117-AC58)(scma,040925,scma).zip
Including PXP028.. and PXP2-028..

- Correction battery charge calculation when installed battery with very low capacity compared with ups nominal power.
- Correction on some custom ups when setting the output voltage from 230 to 220V.

=> PXP028rev184(Firmware MPS system ck=0B85-63FE)(scma,0907,scma).zip
Including PXP028.. and PXP2-028..

- New alarm n.126="BMS Warning" and new alarm n.127= "BMS requires "Full charge""
- The system operating with Supercharge does not switch off the rectifier when it reaches 100% charge.
- Added new commands from Energy manager useful when the ups is used as load.

=> PXP028rev183(Firmware MPS system ck=2410-B8DF)(scma,12525,scma).zip
Including PXP028.. and PXP2-028..

- added remote command n.48: Disable the forced battery charging from external BMS.

=> PXP028rev182(Firmware MPS system ck=15BD-B1C3)(scma,090525,scma).zip
Including PXP028.. and PXP2-028..

- added converter in type ups n.16

=> PXP028rev181(Firmware MPS system ck=8A67-DFB5)(scma,140325,scma).zip
Including PXP028.. and PXP2-028..

- Added the possibility to deactivate the bypass line with OFF command from the control panel, even when the command cod.471263 "Bypass Off Disablement" to disable the bypass line shutdown when the EPO "Emergency Power OFF" command is activated.

=> PXP028rev180(Firmware MPS system,ck=597A-958D)(scma,060325,scma).zip
Including PXP028.. and PXP2-028..

- Fixed incorrect resetting of date/time setting menu
The incorrect resetting was present in revisions 178-179.
- New number "Service" = "800 725020" in the "Dial" field only for Italian.
In other languages, just enter the string "?".
The "Dial" field is updated only if it contained the previous number "848.."
With different content, the customization made is maintained.
The content is retained even in the event of subsequent customization.
- Fix battery charging block caused by firmware update on old 2032 system boards

=> PXP028rev179(Firmware MPS system 2032,ck=47A6)(scma,230125,scma).zip
Including PXP028.. and PXP2-028..

- Updates on commands for HBS with lithium batteries.
- new cod.713467 that shows " Rectifier ON with command bypass ON = 0 ".
In MHT and NXE, by setting the value "1", it disables the rectifier shutdown
when the Bypass command is present with the battery charged to 100%.

=> PXP028rev178(Firmware MPS system ck=8941-D58F)(scma,121224,scma).zip
Including PXP028.. and PXP2-028..

- Added action no.47 for remote relay command when receiving signal no.125
Which is Set by remote input, and also generates panel message
"Circuit breakers ALARM on distrib. panel"
- In parallel MPT systems with a common battery, the level of return from floating charge
to fast charge is changed from 100%->99% to 100%->97%.
This is to avoid unwanted switching between floating charge and fast charge,
following small oscillations in the battery charge current measurement,
due to the exchange current between rectifiers,
which changes the charge state between 100%-99%-100%
- To avoid incorrect battery discharges,
the inverter block is activated for minimum battery voltage even when the rectifier is active.
The block comes into action due to a low battery voltage
that could occur due to an anomaly in the rectifier
that is active with low charging voltage.

=> PXP028rev177(Firmware MPS system ck=29B2-7828)(scma,111124,scma).zip
Including PXP028.. and PXP2-028..

- Added action from remote n.46 valid only for HBS.

=> PXP028rev176(Firmware MPS system ck=CDC1-BE0E)(scma,141024,scma).zip
Including PXP028.. and PXP2-028..

- Correction on battery start of a SLAVE UPS in a parallel system.
The slave unit remained isolated even after consent with button "8" and SWOUT closed.
- Fixed excessive memory usage with "SUPERCAP" setting from version 28 rev.171
- Added two custom UPS.

=> PXP028rev175(Firmware MPS system ck=93F2-3FDE)(scma,110924,scma).zip
Including PXP028.. and PXP2-028..

- version used only on a custom ups

=> PXP028rev174(Firmware MPS system 2032,ck=C4A1)(scma,310724,scma).hex

- version used only on a custom ups

=> PXP028rev173(Firmware MPS system ck=6A93-A10B)(scma,240724,scma).zip

including:

- PXP028rev173(Firmware MPS system 2032,ck=6A93)(scma,240724,scma).hex
- PXP2-028rev173(Firmware MPS system 2143,ck=A10B)(scma,240724,scma).hex
(Attention the "PXP2-..." firmware requires the use of MSFLASH 10.0 or later)
- Added one custom UPS.

=> PXP028rev172(Firmware MPS system,ck=821A-B2A4)(scma,120624,scma).zip

including:

- PXP028rev172(Firmware MPS system 2032,ck=821A)(scma,120624,scma).hex
- PXP2-028rev172(Firmware MPS system 2143,ck=B2A4)(scma,120624,scma).hex
(Attention the "PXP2-..." firmware requires the use of MSFLASH 10.0 or later)

- correction on form corrector to avoid oscillations with 2143 board
on some sizes of MPT/MPM 10-80kVA ups.

=> PXP028rev171(Firmware MPS system,ck=F9DB-8972)(scma,150524,scma).zip

including:

- PXP028rev171(Firmware MPS system 2032,ck=F9DB)(scma,150524,scma).hex
- PXP2-028rev171(Firmware MPS system 2143,ck=8972)(scma,150524,scma).hex
(Attention the "PXP2-..." firmware requires the use of MSFLASH 10.0 or later)
- Correction of the discharge autonomy calculation with lithium batteries.
- Fix for continuously repeating the battery test every minute
with "Battery alarm" message in case of battery absence.
Present from version 28 rev.153.
It returns to only 3 repetitions in case of missing battery.
- Added some custom UPS.

=> PXC8028rev171(MPS system 400Hz,2032,ck=FD3A-F08F)(scma,150524,scma).zip

including:

- PXC8028rev171(MPS system 400Hz,2032,ck=FD3A)(scma,150524,scma).hex
- PXC2-8028rev171(MPS system 400Hz 2143,ck=F08F)(scma,150524,scma).hex
- Alignment with system firmware at rev.171

=> File PXP028rev170(Firmware MPS system,ck=FE87-4F2F)(scma,290324,scma).zip

including:

- PXP028rev170(Firmware MPS system 2032,ck=FE87)(scma,290324,scma).hex
- PXP2-028rev170(Firmware MPS system 2143,ck=4F2F)(scma,290324,scma).hex
(Attention the "PXP2-..." firmware requires the use of MSFLASH 10.0 or later)
- Corrected the functioning of the "Brake" in MHT/MHE with 2143 board
- Added extended messages for the following alarms.

Alarm 81: "	EnergyManager Communication lost	"
Alarm 82: "	Power meter Communication lost	"
Alarm 83: "	BMS Alarm	"
Alarm 84: "	BMS Warning	"
Alarm 85: "	BMS Communication Lost	"

Versions not used on standard production:

PXP028rev169(Firmware MPS system 2032,ck=C1FA)(scma,190124,scma).hex

PXP2-028rev169(Firmware MPS system 2143,ck=D100)(scma,190124,scma).hex

- Added alarm in case of low input current (< 10%) of the "Master" bridge
compared to the "Slave" bridge in twelve-phase rectifiers.
- Increased the range that can be set for the bypass input voltage up to +/-30%.
- Disabled "Stby-ON" when manual battery charging is activated.

=> File PXP028rev168(Firmware MPS system,ck=93FA)(scma,011223,scma).zip

including:

- PXP028rev168(Firmware MPS system,ck=93FA)(scma,011223,scma).hex
- PXP2-028rev168(Firmware MPS system 2143,ck=D313)(scma,011223,scma).hex
- (Attention the "PXP2-..." firmware requires the use of MSFLASH 10.0 or later)

- 1- Added firmware provision to get all the same control functions as MPS systems with the new system board "2143" instead of the previous "2032".

On all MPS: MPM, MPT, MHT and MHE, the new "2143" card can be used perfectly equivalent in operation and connections.

For this purpose, the firmware compiled in 2 versions is provided:

- PXP.. for the "2032" system board
- PXP2-... for the new "2143" board

The UPS containing the "2143" card programmed with the "PXP2-..." firmware externally shows the version number preceded by the letter "N" on the bottom LCD line, and shows "Sys.2143" instead of "System" on the information page of the graphic panel.

The UPS containing the "2032" card programmed with the "PXP.." firmware externally shows the version number preceded by the letter "V" on the bottom LCD line, and shows "Sys.2032" instead of "System" on the information page of the graphic panel.

- 2 - Added new size of 300kVA for special UPS type=22..

=> File PXC8028.rev168(MPS system 400Hz,ck=3E0D)(scma,011223,scma).zip

including:

- PXC8028.rev168(MPS system 400Hz,ck=3E0D)(scma,011223,scma).hex
- PXC2-8028.rev168(MPS system 400Hz,ck=A747)(scma,011223,scma).Hex
- (Attention the "PXC2-..." firmware requires the use of MSFLASH 10.0 or later)

- 1- Alignment with system firmware at rev.168. (PXC8028..) versions PXC8028.rev158 to PXC8028.rev167 are not used.

- 2- System firmware for the "2143" board ("PXC2-8028..")

=> PXP028rev167(Firmware MPS system,ck=B490)(scma,241023,scma).hex

- Fix to avoid false low battery alarm due to brief drops in the inverter input VDC voltage in MHT/MHE during repeated variations from low to very high load.
- Correction on the command "Disable bypass OFF from remote EPO: = 0" from code 471263 From version 28 rev.139, this command, in addition to disabling the bypass line, it also disabled the output shutdown from the EPO remote contact and also from the "UPS OFF" command from the panel.

=> PXP028.rev166(Firmware MPS system,ck=9137)(scma,240723,scma).hex

- New fix to avoid incorrect "Fail 77" alarm The previous fix in PXP028rev165 does not always work.

=> PXP028rev165(Firmware MPS,ck=936D)(scma,260623,scma).hex

- In the MPT/MPM with cyclical charge set, during system start-up, it was removed the incorrect activation of the battery scr, as it was activated before connecting the battery.
- For MHT, alarm no.77 "(Vdc Booster and Vdc Inverter) Unmatch" is delayed by 1 min. to overcome normal temporary measurement differences due to large load variations.

=> PXP028rev164(Firmware MPS,ck=AD70)(scma,050623,scma).hex

- Added some custom UPS.

=> PXP028rev163(Firmware MPS,ck=2C2B)(scma,170523,scma).hex

- HBS management update
 - Energy Manager management update
 - Correction on "BYPASS COMMAND NOT STORED" with action from remote command num.43.
When the command is active, an incorrect return on the inverter is disabled due to a subsequent lack of the bypass input voltage.
-

=> PXP028rev162-03(Firmware MPS,CK=5C0A)(scma,280423,scma).hex

- new code "555555" [Enable BEEP any time starts one alarm: 1]
to activate the audible alarm at each new alarm
corresponding to the storage of an event.
The alarm sound is silenced with key 5,
and reactivates automatically with each new alarm.
-

=> PXP028rev162-01(Firmware MPS,CK=5A85)(scma,170423,scma).hex

- Added some custom UPS.
-

=> PXP028rev161-16(Firmware MPS,CK=6008)(scma,060423,scma).hex

- Added some custom UPS.
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=> PXP028rev161(Firmware MPS,CK=AD3E)(scma,240323,scma).hex

- Correction on the updating of the variables related to the battery test.
By updating the system board with firmware PXP028rev.160
it could happen that the battery test was not terminated automatically.
 - In Standby_ON mode, the alarm delay on output voltage error is disabled.
This is the delay on switching to bypass set with code 436777
In this way there is always a fast return on the inverter
when using the Standby_ON mode.
 - Enabled the "Power circulation with SCR" mode also in the slave units of the parallel systems.
The "Power circulation" mode is activated with a code on the master unit
and all the slave units activate the same menu
and execute the same SCR command activated on the master.
 - Added some custom UPS.
-

=> PXP028rev160(Firmware MPS,CK=022C)(scma,220223,scma).hex

- Added custom ups type n.33 "UPS Sh.690/400 60Hz30B"
 - Added custom ups type n.34 "Conv. MHT 480/400 50Hz"
-

PXP-v28r159(Firmware MPS,ck=0C19)(scma,080223,scma).hex

- Added the possibility to activate a message on the panel also
for battery state of charge below levels 3 and 4, settable with code 321776
-

PXP-v28r158(Firmware MPS,ck=BB2F)(scma,200123,scma).hex

- Correction of a wrong alarm Fail 28 on some MHT with firware v28 rev.157.
- for the MHT/MHE the restart from the battery with reset command is enabled
on a UPS switched off with command OFF without having disconnected the battery.
- Added the management of the "CST4" optional card to obtain
the supplementary measures of 3 battery currents during the battery test.
To be used in case of a battery composed of 2 to 3 strings
to get a string failure alarm in case one of the strings deliver
much less current than expected.
 - . The function is activated with code 326113.
 - . Added the actions 122 and 123 for command of the CST4 optional card.
 - . Added action 124 to report a battery string failure.

 => PXP028rev157(Firmware MPS,CK=A930)(scma,011222,scma).hex

- Added the setting of n+2 redundancy in the "Energy save" function with the menu code 765432.
- Fixed incorrect available unit count in parallel systems.
 A unit off with the UPS OFF command inserted with SWOUT SWBY closed it was declared active although with the inverter off and the bypass deactivated. In this case there was an incorrect return from bypass to inverter in case of overload, due to incorrect counting of active units.
- In systems with battery parallel, during battery discharge, the master with load > 50% switches off, due to minimum battery voltage first, and controls the shutdown of the other units to prevent their overload.
- The standard remote input "Inverter OFF" (already programmed with action n.11) turns the inverter off and on again and also in battery mode without mains input. Previously, in battery operation for MHT/MHE, it was necessary also press key 8 to restart the inverter.

 => PXP028rev156(Firmware MPS,CK=D0FD)(scma,041022,scma).hex

- The update activates the alarm n.6, "LOW BATTERY CHARGE or CLOSE FBAT" also for the case of the MHT500-800 with interrupted battery fuses on the IGBT modules. In the presence of blown fuses, the alarm is activated during the battery test and also in ups in parallel operation as a slave.
 The alarm is detected with the Vdc voltage at the inverter input lower than 30 V respect to that correct .
 Example, if those fuses are blown, the inverter input Vdc drops because there is no current from the battery but in any case it does not reset because supported by the slave inverter which absorbs from the parallel output consequently there was no alarm.
 This also happened with the battery test.
 By updating, in the case of slave ups and also by performing a battery test. if the Vdc voltage drops by 30 Volts below the normal value alarm n.6 "LOW BATTERY CHARGE or CLOSE FBAT" is activated
 This alarm clears automatically only with a correct result battery test.
 - Disabled automatic storage of UPS shutdown when SWOUT opens in battery operation (SWIN open) while SWBY remains closed with bypass mains voltage present and with manual bypass closed.
 This is to avoid the zeroing of the output voltage when the manual bypass is reopened without having canceled with key 8, on the panel, the internal memorized block activated by opening SWOUT.
 With the update the internal block indicated is reset.
 While the inserted one, voluntarily inserted from panel or from contact EP0, remains and is not reset.
 - Added function in code 446123 "Remote alarm for load higher than programmed threshold"

| Set alarm for load over level: 80% VA / W |
 | Adjustment: 4 = En.Mesg. = 0 7 = -, 8 = + |
- with key 4, the enabling to show the overload message is added on the panel as well as remote signaling with contact.

=> PXP028rev155(Firmware MPS, CK=B86E)(scma,270722,scma).hex

- The "LOW BATTERY CHARGE or CLOSE FBAT" alarm is generated and stored, only once at the end from the battery test.
Excessive repetition of the alarm during a discharge has been disabled caused by a very low battery voltage compared to standard values.
- To start the automatic battery test on the first time the system is switched on, it waits for the transition to the state "on inverter", this conditioned to the presence of battery voltage
This is to avoid a wrong start of the test in the bypass state.
- Added programmable alarm # 121 to indicate that it has been applied remote control no.18 for limiting the input current, see code 121217.
- Added ups type 31
for the management of a special MHT400 with 480Vin. and 480Vout 50Hz
Note that the "ups type = 31" selection only applies to MHT400
- Added ups type 32
for the management of a special FPT25 with 690Vin. and 400Vout 50Hz
Note that the "ups type = 32" selection only applies to FPT25
- Note that the "ups type = 29" selection applies only to MHT500.

=> PXP028rev154(MPS firmware MPS, CK=FC98)(scma,090622,scma).hex

- correction on remote command n.38 for "UPS OFF without saving"
This is because the ups slave did not turn on again by removing the command.
- corrected the manual battery test command without interruption, started with menu cod. 423531
This is because the test ended in each case after 127 sec.
- Added the remote action n.45 to interrupt the output voltage.
This by turning off the inverter and the bypass, and leaving the rectifier active.
- Correction of the autonomy calculation to avoid value differences between mains and battery operation.
- Change of the delay applied in the calculation of the autonomy time from the battery
The time constant is reduced from 10 sec. about 1sec.
- On MHT / MHE The activation of the battery test is delayed by a few seconds.
This is to await the confirmation of the "OK" conditions by the DSP

=> PXP028rev153(MPS firmware MPS, CK=2095)(scma,210322,scma).hex

- Added Action n.44 to disable the STANBY_ON
when the action is present with closed or open contact

=> PXP028rev152(MPS firmware MPS, CK=BB09)(scma,100322,scma).hex

- Used for one custom ups.

=> PXP028rev151(MPS firmware MPS, CK=93BF)(scma,070322,scma).hex

- Added "SPS" function for 480V 60HZ "UL" ups.

=> PXP028rev150(MPS firmware MPS, CK=B289)(scma,020322,scma).hex
- Added the management of some special ups

=> PXP028rev149(firmware MPS,CK=5B36)(scma,220204,scma).hex
- used for testing only.

=> PXP028rev148(firmware MPS,CK=227E)(scma,021221,scma).hex
- corrected precharge error for special ups type = 30 "440/440V"

=> PXP028rev147(firmware MPS,CK=3463)(scma,261121,scma).hex
- Correction of operation with external battery for MPT/MPM (cod.321116)

=> PXP028rev146-15 (firmware MPS, CK = DF5A) (scma, 161121, scma)
- Corrected the peak current value, shown on the panel of MSB units (central bypass)

- Eliminated the wrong message "Inverter TA not connected."
shown on MHT600 with a small inductive load of less than 6% VA

- Eliminated the wrong message "Central bypass: SWOUT OFF"
in the master inverter unit in systems with centralized bypass,
present in versions ver.28-rev.144 and ver.28-rev.145

- Eliminated the wrong connection of the "view options" menu (keys 7-4)
between the master unit and slave units.
This connection caused incorrect modifications of some parameters on the slave units.

- Added the vision of the menu "Recover load power to mains:" in the menu "keys 7-4"
when a value other than the standard is set.

=> PXP028rev145-05(firmware MPS,CK=9041)(scma,041021,scma).hex

- increased the time allowed for overload in some oversized special ups
- In the menu cod.436777 "Delay on output voltage alarm"
From ver.28 rev.145 enabled the value "2" with key 3
to increase the output control voltage gain in parallel system
to be used only with electro medical loads having high peak power demand.

- In the menu cod.457667 "Changing input control regulation mode MHT/MHE"
The key 4 can reset also on bypass operation without open SWOUT.

=> PXP028rev144-10(firmware MPS,CK=A615)(scma,090921,scma)

- For parallel systems in BYPASS state,
the return to the inverter is blocked when the average output power,
calculated with the number of inverters available, it is > 100%..
This while the average output power,
calculated with active bypass lines it is <100%.
In that case the message "TRANSITIONAL BYPASS, WAIT", alarm n.11,
change to "BYPASS for n .. Inverters overload: ...%", alarm n.75.
The values shown are:
n. = number of inverters available, overload% = average power on inverter.
(The message is in English only).

- Correction of the "serial number" shown on the panel
with insertion of the zero character, missing in position 12

- added ups type n.29 "UPS CE 480V / 480V 60Hz"
to be used only on special custom MHT.

- added ups type n.30 "UPS MHT 440V/440V 50Hz"
to be used only on special custom MHT

=> PXP028rev143-14(firmware MPS,CK=D814)(scma,020921,scma)

- Correction of a wrong output switching off, in parallel systems when in bypass state with zero active output power ($W\% = 0$) while the apparent power is greater than 4% ($VA\% > 4\%$).
- Correction on a block of messages displayed on the panel, in normal operation. This error occurs only in the v28 rev.140..142 versions when one of the "SERVICE UPS" or "SERVICE BATTERY" messages is active.
- For MPT/MPM, added control of the conduction of the SCR to charge the battery. The "INTERNAL ANOMALY n.9" alarm is activated if the battery voltage result 15V lower than the rectifier output charge voltage.
- For the MHT / MHE the code 567567 allows to set a higher voltage in the internal Vdc bus. This is to be used in special cases for users with electro-medical devices or with high harmonic currents.

=> PXP028rev142,(firmware MPS,CK=C90F)(scma,140721,scma)

- Added new ups type n.28 = "UPS_28_400V400V60HZ34B"
Only for special ups ship Italy input/output= 400/400V3ph,60Hz 34 batt.

=> PXP028rev141(firmware MPS,CK=7D58)(scma,080621,scma).hex

- added enabling of battery start when the remote control "action n.11 = Inverter block" is released
So with mains not present and battery connected activating command n.11 the inverter stops, and by deactivating the same command, the inverter starts with battery power only.
- Correction of the inverter voltage in "Smart Active" mode in the event of a power failure, the inverter. in that case the inverter started with low output voltage for 0.5 sec.

- In the ups set as CSS running in parallel it was corrected an incorrect counting of the overload time

=> PXP028rev140(firmware MPS,CK=F6ED)(scma,030521,scma).hex

- change of the delay time to execute the bypass command from the panel it goes from 16 sec.fixed, to a number of seconds dependin on the difference between the inverter voltage and the bypass input voltage. Eg with 230V inverter and 235V bypass there are 5 sec. of delay.
- For MHT / MHE with parallel battery it has been improved the balancing of the rectifiers input currents.
- Restored the "Battery Service" message not shown in version 28 rev139.
- Removed the incorrect delay on the bypass command applied in the event of the alarm of insulation loss in MPS with "Kit without Neutral"
The delay was present from versions 28 rev.132 to rev.139

=> PXP028rev139(firmware MPS,CK=675D)(scma,180321,scma).hexx

- Correction of the indication of the percentage value of the active output power, which was incorrect in some sizes, eg. MHT400 UL.
- Correction of the indication of the reactive power output value which was not correct with values higher than 9999VA
Eg 12500VA was indicated as 1255kVA instead of 12.5kVA
- In parallel systems with several units, the master calculates the average power of the system and only the master counts the time spent in overload to execute the switching commands on bypass or return on the inverter. This is to compensate for any small differences between the various units in bypass operation. Also, the master remains in the bypass state if not available a sufficient number of inverter units to support the present load. In case of overload, the master shows on the panel the percentage power of the system preceded by the abbreviation "SYS"
- addition of programmable remote action n. 43 to achieve switching from inverter to bypass and back by position of a remote contact. when the action is set with normally open contact, with closing, switching to bypass is obtained immediately and the bypass status is maintained. By opening the contact, it is possible to return to the inverter. NOTE: the bypass command is executed only if the bypass line is present and the inverter is synchronized.
- Made immediate the switching command to bypass through action n.9 Note that this action is stored, so the return to the inverter requires a reset from the panel or remotely using action n.10
- The disabling of external synchronism with UGS has been added when the UPS is in bypass. This is to have the synchronized return on the inverter without interruptions.
- Added the management of the new card "UGS2" with revision "D" or later the new card adds the possibility of having the "UGS LINK FAIL" alarm when there is no connection with "UGS control BOX". To activate the alarm, the value "2" must be set, (..UGS2 = 2); in the menu cod. 426622 "Enable UPS synch. To UGS2" The settable values are:
0 = Synchronism from external not priority, active only if bypass absent
1 = Priority external synchronism enabled, type "UGS2"
2 = synchronism as point "2" + alarm "UGS LINK FAIL"
- Activated the signal to indicate the positive result of the battery test. available via MOD-BUS and can be set as a remote signal with alarm n.75 The signal present active indicates the success of the last automatic or manual battery test.
- In special "Ship" type ups, the "Battery Service" alarm appears only on the panel and does not change the remote alarm n.64 "Normal Operation"
- Added alarm n.118: "Loss of communication with external power meter" with the optional "Energy manager" card

=> PXP028rev138-04 (firmware MPS, CK = 53EE) (scma, 120121, scma) .hex
- battery management enabled in the UPSs
 set as frequency converters with 440 and 460V output voltage

=> PXP028rev137(firmware MPS,CK=0633)(scma,171220,scma).hex

- Disabled the external synchronism signal with UGS2 when the UPS is on bypass.
 This is to obtain the return from bypass to inverter without voltage interruptions.

=> PXP028rev136(firmware MPS,CK=89A5)(scma,111120,scma).hex
- enabled the setting PF = 0.9 with cod. 732675
 on MPT 220Vdc with 19 battery blocks.

- correction of an incorrect "Fail 8" alarm
 on some UPS 12-pulse input, custom, with low output load.

=> PXP028rev135-07(firmware MPS,CK=A2DF)(scma,091120,scma).hex

- correction of some messages in Russian language

- added selection of ups type= n.27: "UPS 400in 440/440 60Hz"

=> PXP028rev134(firmware MPS,CK=17EF)(scma,271020,scma).hex

- added custom MPT20 with 19 battery blocks in ups type =2

- correction of an incorrect "LOW BATTERY CHARGE or CLOSE FBAT" alarm
 in case of power failure with very low output load,
 in some special ups set with large capacity batteries.

=> PXP028rev133(firmware MPS,CK=6259)(scma,061020,scma).hex

- Correction of some messages shown on LCD panel in Russian language.

- Correction on the calculation of autonomy in normal operation from main line.
 From ver.28rev.99, the calculated value was low.

- Modified threshold to avoid "Internal anomaly n.8" alarm, with low output load,
 in the case of MPT with derated nominal power

- For MHT / MHE, correction of forced "Low gain" setting on DSP,
 which was done with the firmware update ver.28 rev.130..132
 Realignment should be considered if an update has been made
 with the firmware indicated.

 => PXP028rev132(firmware MPS,CK=9C71)(scma,220720,scma).hex

- Correct incorrect indication of measurements for bypass input and output in the Chinese menu "phase-phase voltages" of single-phase ups
- Corrected the language change mode from the master parallel UPS panel. When accessing the language change menu on the ups master panel that unit became a slave so multiple attempts had to be made to get the desired language.
- Added 14 seconds delay to execute the bypass command inserted on ups panel or received from remote. The seconds delay count is also shown on the panel. This is to avoid overloading when switching from inverter to bypass adapting the inverter output voltage to the bypass voltage.
- correct the inverter output voltage when on "Standby_ON". This because in version v028 rev.131, the inverter voltage remained the same to that of the bypass line also during inverter operation.
- Added the message "REMOTE inverter off" in addition to the one already shown "REMOTE BYPASS COMMAND: ACTIVE" when switching to bypass due to inverter shutdown from remote input.
- Corrected the calculation of the autonomy in battery operation, in case of battery with large capacity, to avoid overflowing.
- Fixed some messages from the Panel when the EnergyManager card is present or external BMS.
- Various corrections in operation such as "SPS"
- added code 567567 to increase the Vdc voltage from 720 to 760Vdc for MHT 480V UL This is to improve the dynamic response in the case of electromedical users menu Cod. 567567

 Internal VDC_BUS: Increase = 1
 Adjustement: 7 = -, 8 = +

 => PXP028rev131(firmware MPS,CK=6F64)(scma,110520,scma).hex

- Added standard MPM120 size.
- Added "Standby_OFF" function with power supply only from the main line without the bypass input connected
 In code 6413137,

 |Standby-OFF: Enabl.= 0; Line Check = ...|
1,8 = Esc.; Line: 5=Main; 6=Bypass; 7 = OFF

the value "..." is set with the keys 5, 6, 7.

- OFF = standard operation from online ups.
- Main = New Standby_OFF operation with input from main line only.
 The inverter is normally off and turns on with a delay of 0.5 sec. when the voltage to the rectifier input drops below the threshold set for the bypass line.
 The standard value is -20% and it is adjustable in the range -25 / -5% of the rated voltage
- Bypass = Standby_OFF operation with bypass line connection
 the inverter turns on only when the measured voltage at the bypass input it drops below the threshold, as above.

=> PXP028rev130(firmware MPS,CK=AD70)(scma,2300420,scma).hex

- added size 60kVA input 440V, for ups type = 16.
 - Added possibility to set pf = 0.8
 - on ups n. 2, 11, 16, 21, 19, 23, 26; with the code 732675
 - added the availability of more information related to historical and ram files, with 2 additional .RAM2 and .HIS2 files downloadable with Msflash 9.16.
Note that now these files are not managed by UCOM and can only be interpreted by R&D
-

=> PXP028rev129(firmware MPS,ck=BCC4)(scma,020320,scma).hex

- new compilation to avoid ram file download error with MSFLASH programs prior to MSFLASH version 9.16
 - no functional variation with respect to the PXP028rev128 version
-

=> PXP028rev128(firmware MPS,ck=B8B0)(scma,180220,scma).hex

- Insert the request to confirm execution with key 4 in the menus for BYPASS and UPS-OFF commands
 - added alarm n.114, programmable on remote contact, to indicate manual or monthly charge, to be used for fan control.
 - Correction of the battery current reading for a special MIM40 to avoid incorrect operation of battery discharge on mains
 - Correction of the indication of the phase 3 input voltage measurement, in the MHT / MHE; the value indicated was that of phase 1
 - Correction of battery autonomy calculation in case of very large capacities.
 - corrections on operation with lithium battery
 - added a new step in the calibration procedure to get the offset calibration in the input currents reading.
-

=> PXP028rev127(firmware MPS, ck=8873)(scma,011019,scma).hex

- correction on lack of "LOW BATTERY" alarm.
In versions PXP028 rev.124..126,
the battery test with battery disconnected or otherwise defective resets the charge status but does not display the "LOW BATTERY" alarm
- correction on the fast control of the output voltage set to a narrow range with respect to the voltage range set for the bypass voltage.
This fast check was activated in the PXP028rev125 version.
When active with narrow range it happened that the system could not return to bypass inverter if the bypass voltage was out of the restricted range.
Example with restricted field, menu 3572 "(Al.Vout = 5%), and system in bypass with voltage present at + 6%, as the inverter in the bypass state assumes the same voltage, it happened that immediately after switching the system gave error and then it was returned to bypass.
In conclusion, the restricted field is applied with a small delay necessary to wait for the inverter voltage to return to the nominal value.
- added the new alarm condition n.113,
to indicate a second one insulation loss alarm "INSULATION LOSS A.C.2"
this can be used only with special customized ups.

=> PXP028rev126,(firmware MPS,ck=BBD4)(scma,160919,scma).hex

- For MHT/MHE added an additional function to check the presence of the battery
The check is carried out every minute by a brief suspension of the charge.
In case of disconnection or absence of battery the alarm
"Battery not connected" is activated.
- Battery TA management changed to avoid
that an MPT / MPM set as a converter without a battery
can be blocked by a wrong signal from the battery TA.
- Correction of the "Auto OFF" function set with menu cod.754217
In versions from PXP028 rev.78 the "Auto OFF" time was equal to the pre-alarm time
instead of being twice the pre-alarm time as written in the IT-CODE ..
- Correction of the messages shown in the history consultation with the 4 key
on the ups panel
In versions PXP028rev.124, and rev.125 the message shown on the panel
did not correspond to the recorded event.
- correction of the messages shown in the consultation of the history with the key 4.
in versions PXP028rev.124, and rev.125 the message shown on the panel
did not correspond to the recorded event.
- Questo firmware disabilita la funzione di ritorno di energia verso rete
nei sistemi parallelo. La disabilitazione si ha nelle schede di sistema
in cui si carica il firmware la prima volta
oppure si aggiorna con questo firmware da una versione precedente.
Poi è possibile la riabilitazione con il cod.172123
- This firmware disables the energy return to main line function,
in parallel systems, when updating with this version from the previous ones.
This disabling is necessary in parallel systems with MHT / MHE
powered by generators or main line with low power
compared to that of the UPS system
However it is possible the rehabilitation with the cod.172123
if the inputent main line is of great power compared to that of the ups system.
- Per gli MHT/MHE,alla prima accensione dell'UPS,
viene sempre automaticamente acceso il carica batteria
Nelle versioni precedenti da PXP028rev58 era spento,
si accendeva solo collegando la batteria o con il tasto 5 nel menu con tasti 222.
Inoltre con carica batteria acceso, in caso di lettura della tensione dc di batteria
con valore inferiore alla tensione minima di batteria prevista,
si attiva l'allarme "FAULT 4" dopo un ritardo di 1 minuto
Questo può accadere a causa di un sovraccarico o cortocircuito
o guasto nel collegamento di "Feedback di tensione" nel circuito verso batteria
- For MHT / MHE, when the UPS is first switched on, the battery charger
is always automatically switched on. In previous versions from PXP028rev58 it was off,
it only turned on by connecting the battery or with the 5 key in the menu with keys 222.
Also with battery charger on, in case of reading of the battery dc voltage
with value lower than the minimum expected battery voltage,
the alarm "FAULT 4" is activated after a 1 minute delay
This can happen due to an overload or short circuit
or failure in the connection of "Voltage feedback" in the circuit to the battery

=> PXP028rev125,(firmware MPS,ck=9B2A)(scma,150719,scma).hex

- correction of an incorrect memorization of an event every step of the battery test (error present in versions PXP028 rev23/rev124)
for this reason 16 events were recorded during the test with duration 8 seconds.
- correction in the count of days for switching off the unit in systems with "Energy save"
The turn off was performed every 16 days. Now go back to 10 days.
- In menu cod.457667, added the function for reduction of the regulation gain,
to be used to avoid any oscillations
in case of taking power from a low power motor generator compared to the power of the UPS
The function is available only with DSP version PXM3001 rev.96 or higher.
- The action n.26 from remote, Force the inverter synch. to ext. line with UGS2=0.
and disable the inverter synch. to ext. line with UGS2=2.
It operates only on system with UGS interface.
- with this update, in correspondence of each memorized event,
there is also the storage of other variables related to the DSP input stage and system status

These new values will be downloaded automatically by the new MSFlash 9.16 program
with 2 new files (*.his2 and *.ram2) in addition to the files *.his and *.ram data.

NOTE: for now the contents of *.his2 and *.ram2 files are not visible with UCOM
and they can only be interpreted by R&D.

=> PXP028rev124,(firmware MPS,ck=6BAF)(scma,140519,scma).hex

- in the MHT / MHE increase in internal voltage from 650Vdc to 680Vdc
when the input voltage increases over 110% up to 120%
This is to obtain a better operation of the input rectifier with IGBT.
- correction of the missed activation of the red fault LED on the panel
when one or more "Internal Failure" alarms are present from n.28 to 37
and also for the fan fault.
This anomaly is present only in the PXP028 rev.123 version.
- For MHT / MHE added hysteresis on high input voltage control.
The input is disabled with Vin> 120% and is rehabilitated with Vin> 118%
This is to avoid oscillations with high input voltage.

=> PXP028rev123(firmware MPS, ck=64F2)(scma,090419,scma).hex

- Correction in parallel systems with MHT/MHE ups, having common battery .
The unit locked with the message "Fail 36" was not able to restart after mains return.
- correction of the alarm message storage mode.
This is because sometimes an incorrect "Alarm 28" message appeared.
Furthermore, there were also events stored without messages on the panel.

=> PXP028rev122(Firmware MPS,ck=B40D)(scma,280219,scma).hex
- correction of a wrong "Fail 4" alarm in MHT/MHE ups activated during any input stage restarting after main line fail.
The problem was present only in ver.28 rev119.
- added action n.42 to be used on MHT/MHE, in case of input feeding from GE to avoid energy return to GE.
- insert cod.321777 to set 2 battery voltage thresholds to activate a GE with the alarm/rele n.105 in addition to the same alarm set with battery capacity threshold
- insert management of an interface card to communicate with lithium battery BMS via RS485 or TCP/IP with MODBUS protocol, to be insert inside the "AUX" ups slot.
In this version are available only n.2 communication protocols, Yuasa, Gcasa.

=> PXP028rev121(Firmware MPS,ck=7A5A)(scma,180219,scma).hex
- correction in parallel systems with MHE ups operating with 60Hz output.
Those systems had problems of big oscillations in parallel output current balancing.

=> PXP028rev120(Firmware MPS,ck=B698)(scma,040219,scma).hex
- added management of central bypass system 2400 and 3000kVA
- correction of internal Vdc setting for MHT UL version.
The wrong voltage was present in version 28 rev119. 660V instead of 720Vdc.

=> PXP028rev119(Firmware MPS,ck=77AB))(scma,111218,scma).hex
- Correction of the calculation of battery autonomy and the percentage of charge during the battery discharge
This problem is present in the previous revision 118.

- Correction of an incorrect inverter restarting, after stopping because of a full discharge, while the input mains is not present (open SWIN) but with the presence of the bypass input voltage.
For this reason, restarting has been conditioned to the main input voltage OK.

- Correction for the MPT250-800. After a manual discharge test the Vdc voltage remains low and does not return to the correct value.
Thi problem is present from versions version 28rev.47.

- Added action from remote input n.41,to control the battery discharge on the mains.
To be used only on special MHT/MHE.

- Added management of special custom 200kVA 40 battery blocks, ups type=n.26.

- Added cod. 471236 for special MPT set as converter, in order to operate with 480V 60Hz input and 400V50Hz output.

=> PXP028rev118(Firmware MPS,ck=B8BB)(scma,240918,scma).hex
- added management of a special custom UPS with Yuasa lithium battery

- In the menu cod.467123, for the activation of the single battery in parallel sytems added parallel rectifier management, this only in case of special custom ups type = 1

-
- => PXP028rev117(Firmware MPS,ck=B8BB)(scma,240918,scma).hex
 - Added management of special custom 15kVA ups with n.19 12V battery blocks.
-
- => PXP028rev116(Firmware MPS,ck=88FC)(scma,120918,scma).hex
 - Correction of the calculation of the autonomy time, for ups with high battery current.
 Ex. In a MHE800 the indicated autonomy with 40% load was greater than that with 10%.
-
- => PXP028rev115(Firmware MPS,ck=3458)(scma,250718,scma).hex
 - Correction of the temperature value shown on the graphic panel close to "System Temperature".
 The battery temperature was shown on the panel and not the internal system temperature.
 So there was disagreement between the temperature of the system indicated on the UPS panel, and the one visible on the computer through the Browser.
- Correction of the calculation of the value "Total number of full battery discharge", visible with UCOM in the "Ups settings" menu.
 The indicated value can be lower than the real one in the case of 500kVA ups, with many discharge cycles.
- Added the energy exchange ability between the rectifier input and mains for MHT/MHE customized as SPS
-
- => PXP028.rev114(Firmware MPS, ck=C3C4)(scma,210518,scma).hex
 - not for standard production.
-
- => PXP028.rev113(Firmware MPS, ck=2474)(scma,200418,scma).hex
 - Fixed "Fault 8" during operation in "Energy Save or" Standby_ON ".
 For this it is increased the overvoltage value accepted on the Vdc voltage, without generating an alarm.
 The "Fault 8" is generated because when the inverter is switched off with battery fully charged, an overvoltage on the Vdc voltage is generated.
 After that the battery maintains it for many hours because it has not any load.
- Added a function to check the shutdown cycle in "ENERGY SAVE" with the rotation of the UPS OFF by the value of the units of minutes in place of the units of the days
 In the standard menu cod.765432, the "3" key activates the test mode with the minutes.
 The message "Cycl.with min.ON 3 = OFF" appears in the menu, pressing "3" again the writing disappears and the normal mode is reactivated with the days.
 The test mode is reset to zero every minute "59"
- Fixed "Fault 5" for MHT / MHE in case of installation with batteries of great capacity. This increases the threshold to generate the alarm of "backfeed with Fault 5".
 This is because there are many disturbances during the battery charge in installations with very large batteries that have batteries the value of Ah greater than 2/3 times of the value in kVA of the ups (eg for 400kVA -> 800 / 1200Ah)
 In that case the threshold is increased with the same proportion.
- Added additional conditions to generate "Alarm 88" for the purpose of controlling the opening of an external battery switch in case of faults.
 The alarm conditions are as follows
- Epo signal
 - Desaturation signal of an inverter module
 - Module temperature > 95 degrees
 - Continuous battery current > 5% f.s with inverter off
 - Internal Vdc voltage < min. battery voltage, with inverter off.
- "Fault 36" correction for MHT / MHE systems with battery parallel.
 Corrected block value of the input converter for high voltage Vdc.
 This value had been lowered in ver.28rev.106..108,
 in the case of operation as a converter without a battery,
 to avoid overvoltage Vdc when switching off the load
 Now the low value is used only when you set the operation as converter without battery.

=> PXP028.rev112(Firmware MPS, ck=4F7A)(scma,060318,scma).hex
- In case of MPT/MPM correction of delay to detect "High voltage on battery".
In ups with firmware from ver.28 rev.99 the delay was too short.
Therefore we had wrong "Faul4" alarm on ups operating on Standby_ON or "energy saving"
with low output load, big battery.

=> PXP028.rev111(firmware MPS ck=29CE)(scma,270218,scma).hex
- Handlig of a special "Brake" circuit installed in a special MHT ups,
able to dissipate the energy flowing back from the ups output.

=> PXP028.rev110(Firmware MPS,ck=EE03)(scma,130218,scma).hex
- added function "SPS" on special MHT/MHE

=> PXP028.rev109(Firmware MPS,ck=11BD)(scma,141117,scma).hex
- Only for some customs, not for standard production.

PXC8028.rev108(MPS system 400Hz,ck=74AD)(scma,121217,scma).hex
- Added handling of size 20kVA 400Hz frequency converter.

PXC8028.rev65....107
- never used and never completed.

=> PXP028.rev108(Firmware MPS,ck=8E99)(scma,151117,scma).hex
- Battery test correction when the cycling charging is activated.
When activating the battery test with a 100% charged battery
and the low load does not produce a discharge below 99%, the value is reset to 100%,
as a result the battery is not recharged to compensate the small battery test discharge.
- Added cod. 172123 (Ability to Power Recovery from Output load to input mains).

=> PXP028.rev107(Firmware MPS,ck=7902)(scma,241017,scma).hex
- Modified operation of MPT set with Supercap battery.

=> PXP028.rev106(Firmware MPS,ck=AD0A)(scma,051017,scma).hex
- When the display is off, the first press of a button on the panel,
it lights light but does not produce actions. This is to avoid pressing
incorrect buttons, as not visible, due to the light off panel.
- The MHT / MHE switches off the input converter even in case
of the absence of one of the 3 input currents with alarm "FAIL 6".

=> PXP028.rev105(Firmware MPS,ck=2CDB)(scma,260917,scma).hex
- Added alarm n.112 to indicate load condition fed by inverter with battery charging
above threshold 1 (set with code 321776).

=> PXP028.rev104(Firmware MPS,ck=EE5F)(scma,180917,scma).hex
- Changed cod.251553 to enable/disable the Debug mode.
The command will be activated after pushing the key "4"

=> PXP028.rev103(Firmware MPS,ck=BE17)(scma,070917,scma).hex
- Change in function cod. 471263 for disabling line bypass by EPO command
The bypass command propagation was disabled to all units in parallel systems
in the case of an EPO command on a single unit.
Setting "disable = 1", when the remote EPO command is activated,
the inverter and rectifier are switched off.
- In a single-unit system, the load is switched to bypass line.
- In a parallel system, only the unit receiving the EPO command is switched off,
while the other units continue to operate normally.
- Then to disable the output load in a single system,
it is also necessary to turn off the line at the bypass input.
- In a parallel system, you must also send the EPO command to all units.
- In parallel systems, you can activate and propagate the bypass command
with the function: "UPS_OFF propagation in parallel systems cod.421721".

=> PXP028.rev102(Firmware MPS,ck=C084)(scma,060917,scma).hex
- Disabled the bypass line shutdown in case of EPO signal,
caused incorrectly by internal fault n.7 (HF circuit failure on power supply).

- insert the code "471263" to disable the switching OFF of bypass line
when received the remote EPO command.
Setting "disable=1", when the EPO command is activated from remote,
the inverter is switched OFF and the load is switched to bypass line.
Therefore to switch OFF the load, it needs that the EPO command
is able to switch OFF also the input connected to bypass line.

- Correction of incorrect indication of the autonomy on the ups panel
during battery operation. The error occurs if set
cyclic recharging and it is in the floating charging during the charge extension.
This error is present in the revisions 98 to 101.

- Changed the percentage battery charge indication, from 100% to 99%
when in the floating charge operation that was added the cyclic charge,
from revision 98 to 101.

=> PXP028.rev101(Firmware MPS,ck=D12C)(scma,140717,scma).hex
- Corrected wrong activation of alarm "BYPASS LINE VOLTAGE FAIL.. "
also when the bypass was disabled with code 436555 or 753211
and the bypass line voltage is not present.

=> PXP028.rev100-02(Firmware MPS,ck=CBBA)(scma,220617,scma).hex
- Added a filter on desaturation signal from the inverter driver card
to the inverter interface card.
This to prevent a wrong inverter lock due to false desaturation signals.

- Added alarm n.111, that is activated in case of over temperature OR over load.

=> PXP028.rev99(Firmware MPS,ck=451F)(scma,060617,scma).hex
- Added custom ups with ups-type = 26.

- in cod.121212, addition of the function to have an input current limitation
that hold the input active power constant.

- Corrected a wrong short "battery low alarm" (only 0.5sec) that was present
in the history when starting the battery discharge from 100% charged status.

=> PXP028.rev98(Firmware MPS,ck=F60D)(scma,220517,scma).hex

- Changed the operation of the cyclic charge by adding a floating charge stay
of 1 to 10 hours before turning off the battery charger.
This is to have a better battery charging equalization.

- Correction buzzer alarm always activated, when one parallel unit
is switched off because it is active the "ENERGY_SAVE".

- For parallel system, correction on wrong operation of UPS-OFF command
sent from the master to other units, enabled with cod. 421721.
Slave units do not turn off, as they switched off and then turned on again.

=> PXP028.rev97(Firmware MPS, ck=76D2)(scma,170317,scma).hex
- corrected for MHT/MHE input stage, when on cyclic charging
The input stage does not switch off permanently when the battery is 100% charged.
Problem from PXP028.rev95

 => PXP028.rev96(Firmware MPS, ck=9E4E)(scma,130317,scma).hex

- For systems with central bypass, corrected the wrong message "Central Bypass: SWOUT OFF" shown on slave unit even in normal conditions.
- For systems with central bypass, correct wrong operation with output short circuit when are active two or more inverter units. The inverters switch off after 0.5 sec. instead of 1 sec. And also they restart after 0.5 sec. for the duration of 1 sec.
- For systems with central bypass, in the case of two or more active units, Fixed an incorrect bypass command activated by the master unit when opening its SWOUT.
- It will be activated the battery LED flashing, when it will be detected the optional signal from the open external battery switch.
- Added 2 settable actions from remote inputs (n.39 and 40), to get a reduction of the charging current. The action 39 reduces the charge current to 25% of standard value 0.1 Ah. The action 40 reduces the charge current to 50% of standard value 0.1 Ah. The cod. 324321 allows to customize those values.
- In the input currents adjusting menu for the MHT/MHE, it was added the possibility to adjust the offset when the input stage is switched off.

 => PXP028.rev95(Firmware MPS, ck=A6DF)(scma,220217,scma).hex

- published cod. 457667 to change the MHT/MHE Input control regulation mode the message is "Input control for Gen. Set.: Enable=2" The default is "Vectorial mode" (mode=2). It can be set down to "Current mode 1 or 0" (mode=1 or 0). The setting of (Current mode 0) was useful in case of input mains or input motor generator having lower power than UPS.
- When set the action 34 from remote, the battery charger will be always held ON. This is useful in some special application with Litio battery.

 => PXP028.rev94(Firmware MPS,ck=0D65)(scma,201216,scma).hex

- correction for a wrong disable of the switching on bypass in systems with centralized bypass. Error introduced in version PXP028.rev90.

 => PXP028.rev93(Firmware MPS,ck=AAB5)(scma,011216,scma).hex

- added custom frequency converter having 440 and 460V 60Hz output.

 => PXP028.rev92(Firmware MPS,ck=9DF3)(scma,221116,scma).hex

- Correction on the delay to be applied on actions from remote input. With previous firmwares, the programmed delay was applied only when the actions was programmed with remote contacts normally open. The delay was NOT applied on remote contacts programmed as normally closed.
- added custom ups 440/115V output.

 => PXP028.rev91(Firmware MPS,ck=0209)(scma,191016,scma).hex

- In case of MHT/MHE set to operate as voltage stabilizer without battery. it has been decreased down to -60%, the transitory minimum input voltage threshold to stop the input converter, and also increased the internal Vdc to 640Vdc. This is available only with DSP firmware PXM3001 rev.75
- In case of ups set as "SPS", upgraded the RS232 protocol to send also negative value for the output power.

=> PXP028.rev90(Firmware MPS,ck=E877)(scma,200716,scma).hex

- Correction for systems with Central bypass.
In systems with inverters not connected inside the "Central bypass".
The inverters were switched off when opening of the Central bypass SWOUT.
This problem is present from version PXP028.rev82
- Correction of input current soft_starting for ups MPT/MPM having SCR input rectifier. The input current loses the first steps of the current increase when set a sofstart time less than 20 sec.

=> PXP028.rev89(Firmware MPS,ck=34EB)(scma,290616,scma).hex

- Added custom ups 25kVA
- In standard serial binary message sent from UPS via RS232, it has been added the bit 0x08 in the byte n.100 in case of unit set as "Inverter for system with Central bypass" or "Inverter for frequency converter".
In the same byte the bit 0x04 will be added in case of unit set as "Central bypass".
- Upgraded rectifier commands on ups used in "SPS" mode.

=> PXP028.rev88(Firmware MPS,ck=116F)(scma,160616,scma).hex

- Added handling of special system composed by two ups synchronized with UGS2 but having two different bypass line input.

=> PXP028.rev87(Firmware MPS,ck=A17A)(scma,250516,scma).hex

- Only for testing.

=> PXP028.rev86(Firmware MPS,ck=31A1)(scma,120516,scma).hex

- correction of serial communication on serial port RS232-2 when upgrading system firmware from version 28 on previous UPS not having graphic panel, that had system card 2032..01.

=> PXP028.rev85(Firmware MPS,ck=51B3)(scma,042016,scma).hex

- In parallel systems correction of wrong activation of the Chinese language, error present in the previous firmware v28 rev.83, when upgrading a parallel ups while the other active units have a previous firmware lower than ver.28 rev.79
- In parallel systems disabled the inverter lock after switching in bypass because of a weighed overload.
This is to avoid that the system can return to the inverter operation with some units still OFF, after the load reduction.
- Disabled wrong "SERVICE BATTERY" alarm in the converters without battery (It is blocked the decrease of the set months to activate the alarm).
- Reduced the time to calculate battery fully charged, when connecting a new charged battery, while the UPS is indicating 0%Ah state of charge.
The previous required 20 hours to reach 100% because a charged battery absorb current a very low current.
Now, if the charging current remains very low, the time to increase the charge change from 0 to 40%Ah in 1 hour, from 40 to 80%Ah in 2 hours and from 80 to 100%Ah in 4 hours.
This happens because the calculation of the battery charge state is performed only according to the charging current.
The use of the voltage measurement is not reliable.
- In the case of set ups for operation with Flywheel, added the starting from the bypass line also with Flywheel not ready.
This is to allow the feeding of the flywheel logic cards from the ups output in the first starting and also when restarting after a deep discharge.

=> PXP028.rev84(Firmware MPS,ck=0DF5)(scma,250316,scma).hex
- Custom ups only.

=> PXP028.rev83(Firmware MPS,ck=A59E)(scma,110316,scma).hex

- 1-For parallel systems, correction of error introduced in PXP028.rev80
due to changing of language setting from master to slave units
The slave units had a wrong battery type value increasing,
when customizing battery on master unit
by accessing the menu 3 = Battery in the master unit.
- 2-For MPT / MPM with new gR battery fuses instead of Gg / Gl,
It was made and the correction of battery SCR switching on.
The fix is to avoid that sometimes the battery fuse burns when the battery test
is activated with low output load and with the cyclic charging is active.
The burn is because the battery scr is switched on when the inverter input
capacitors are charged with high voltage, while the inverter whit output low load
does not discharge them.
- 3-Reduction of battery charge from 100% to 99% in the case of battery disconnection
When the cyclic charging is active and the battery charger is off.
This get to allow battery charge switching on even without a battery connected.
- 4-In parallel systems,
the system continues to maintain active the unit that was "Master" before,
in the anomalous condition in which the signals cable connection loop is open,
therefore with the presence of the alarm "Link fail",
and also in case of presence of the signal "Master signal off",
(for example caused by a short circuit on the signal cable or by serious disturbances).
- 5-Correction of a wrong set for "UPS UL 400 / 400V 50Hz", custom ups type = 14.
It was set up as a frequency converter with 50Hz output and not as ups.
Consequently the bypass line was disabled.
- 6-Correction of wrong parameter setting of the battery
when activating the basic setting menu "151541".
Now the battery parameters are reset only changing the size of the ups.
- 7-added alarm n.108, programmable on remote contacts, to indicate
output frequency out of range.
- 8-In the customizing menu of the bypass voltage range
(Keys: 35, 7, 2 -> "By. Volt. Range 20%") is added "(Al.Vout = 20%)"

(Al.Vout=20%) By. Volt. Range 20%
Adjustement: (4-,5+) 7=-,8=+

The 20% is the default setting for the acceptance field of
the bypass voltage and also to the inverter output voltage.
With keys 4 and 5 it can be narrowed the control of
inverter output voltage referring to the nominal output voltage
with the min. value of 5%

=> PXP028.rev82(Firmware MPS,ck=0AD4)(scma,170216,scma).hex

- Custom ups only.

=> PXP028.rev81(Firmware MPS,ck=272B)(scma,041215,scma).hex

- Custom ups with special mod-bus messages.

=> PXP028.rev80(Firmware MPS,ck=3B3D)(scma,061115,scma).hex

- Correct setting languages in parallel systems from master unit panel.
Previously it was not possible remove Chinese language from master unit panel.
- added cod.532145 to decrease the duration of the inverter short circuit.
From standard 1 sec. down to 0.1 sec. with steps 0.1 sec.
- added special ups type n.22, 80kVA 400/230V 3ph. with high battery charging curr.

=> PXP028.rev79-02(Firmware MPS,ck=39C2)(scma,261015,scma).hex

- special ups 440V/230V single phase 19 battery blocks.

=> PXP028.rev79-01(Firmware MPS,ck=39C2)(scma,261015,scma).hex

- Added parallel systems function WITHOUT ENERGY SAVING REDUNDANCY
menu cod.765432 "Energy Save on parallel systems Enable = .."
 - .. By setting the value 1, it is shown (Redundancy = ON),
and it has the previous function that in a system with three or more units,
in case of low load, the exceeding units are turned off, while maintaining
at least two active units to maintain redundancy
The load level for switching off/on changes with the number of units.
With n.ups = 2,3,4,5,6,7,8 the off threshold is = 0,30,45,54,60,64,67% VA
With n.ups = 2,3,4,5,6,7,8 the on threshold is = 50,66,75,80,83,85,87% VA
 - .. Setting the value 2, is also shown (Redundancy = OFF)
then in a system with 2 or more units in parallel, in the case of low load,
the exceeding units are switched OFF up to have just one unit operating.
The load level for switching off/on changes with the number of units.
With n.ups = 2,3,4,5,6,7,8 the off threshold = 40,53,60,64,67,69,70% VA
With n.ups = 2,3,4,5,6,7,8 the on threshold = 85% VA (always the same)
- Added cod. 754217 "UPS-OFF after main fail with preal.*2 =0"
This option to turn off automatically the ups after a power failure
with a delay equal to 2 times the value set as prealarm.
After shut down, the UPS automatically restarts when the main line come back,
The automatic restarting can be disabled
with cod.446212 "System Autorestarting Disabled"

=> PXP028.rev78(Firmware MPS,ck=70BB)(scma,240915,scma).hex
- added cod. 512377 "Operation with SUPERCAP battery"
valid only on a special MPT unit.

=> PXP028.rev77(Firmware MPS, ck=7025)(scma,040915,scma).hex
-Correcting wrong measure active power in the menu
with Chinese language
- Correction failure to return on inverter from bypass
in parallel systems, when a slave does not have present
a correct bypass voltage input.
This problem is present from version 28 rev.46.

=> PXP028.rev76(Firmware MPS,ck=ADEB)(scma,010915,scma).hex
- MPT 80 special high battery charging current

=> PXP028.rev75(Firmware MPS,ck=37AC)(scma,170715,scma).hex
- Correction of wrong high battery charging voltage in the condition of ups
stopped on bypass by means of setting bypass command from panel
and holding SWOUT switch open.

- In case of inverter stop caused by Energy return from an output motor load,
added the command to switch on bypass, also when the bypass line voltage
is not present.
This to allow the motor braking by means of the input bypass line.

- Added alam n. 106 to command ON/OFF an input motor generator depending on
Battery voltage with values Vprealarm/VchargeMax.
The value "VchargeMax" Must be set with battery customizing menu
selecting battery type=0.
The same value is used also with battery type set =1..3.
- Added alarm n.107 to show "Insulation Loss A.C.+ D.C" when present
one of the alarms n.85 or n.86.
- Added command n. 38 to switch OFF the ups when the command is active
and to switch ON when the command is not active.

=> PXP028.rev74(Firmware MPS,ck=BC2D)(scma,090715,scma).hex
- Added special ups size of 10 and 15kVA in ups type = 2 "UPS Ship, 690/230"

=> PXP028.rev73(Firmware MPS,ck=0190)(scma,220515,scma).hex
- Added some custom ups 1.5kVA and 15kVA in ups type = 10 and 21.

=> PXP028.rev72(Firmware MPS,ck=C812)(scma,270415,scma).hex
- It will be avoided the reset of the state of charge of the battery
when the battery is disconnected with the rectifier and/or the battery charger off.
The decreasing of the state of charge of the battery or the reset is performed
only when the inverter is operating with SWOUT closed.
- Added a recording event, delayed 60 sec., after each input rectifier starting.
This is to get registration in the steady state after the return of the main line.
- Added a dynamic compensation of the output voltage in proportion
to the output current, for using with electromedical loads having
high peak power demand. Not usable on ups operating in parallel.
It is activated or deactivated with the "3" in menu cod.436777 (3=Comp.V=0).

=> PXP028.rev71(Firmware MPS,ck=18CE)(scma,200415,scma).hex
- Activated alarm "DISTUBANCIES ON BYPASS LINE" during switching from STBY_ON to INVERTER_ON due to a brief drop in output voltage coming from the bypass line. the system correctly commuted on inverter always showing only "Normal operation".
- Moved the fault alarm SCR bypass non-conducting when the system is on bypass, from Fault5 to Fault26. Previously this failure was reported incorrectly as Fault5 together with the incorrect conduction of bypass SCR during inverter operation.
- Disabled the Fail5 alarm when it is closed maintenance bypass switch. This is to avoid incorrect command the the input bypass switch, in case of use of the alarm FAIL5 (Backfeed) to trip the input bypass circuit breaker.

=> PXP028.rev70(Firmware MPS,ck=E465)(scma,040315,scma).hex
- Added special ups 10kVA single phase output, operating with 18 battery 12V

=> PXP028.rev69(Firmware MPS,ck=DBE0)(scma,180215,scma).hex
- Added special ups size of 330kVA in ups type = 2 "UPS Ship, 690/230"
- Correction of wrong battery charger disable on ups set with Flywheel
- Reduced delay to switch off the ups from EPO command.
The delay is not reduced in ups used as parallel unit.

=> PXP028.rev68(Firmware MPS,ck=6311)(scma,130114,scma).hex
- added ups 80kVA single phase output, with battery 220Vdc.

=> PXP028.rev67(Firmware MPS,ck=EBB2)(scma,271114,scma).hex
- added remote action n.37 to start battery charging in ups set as SPS.
- added message "ATICS Fehler" on special ups 3KVA

=> PXP028.rev66(Firmware MPS,ck=18CE)(scma,131114,scma).hex
- Added cod.446123 "Set alarm for load over level: 80% VA / W"
Change the power level of the load to activate the remote alarm 79.
With the upgrade, the alarm 79 remains at 80%,
then it can be changed from 10% to 110%

- Added cod.426622 "Enable UPS synch. UGS2 to = 1" to use the new card synchronizer external source (UGSI2, which uses a cable with a RJ45 connector in place of the flat cable 14pin. Also does not require the use of additional remote contacts, when using with the new box (UGSC2) for control with priority selector.

- Added 105 remote alarm that is activated according to the charge of the battery. It is activated if the charge is higher than level 1 (high) and it is deactivated when the charge is less than level 2 (low). The levels can be set with cod.321776.
It is used to run a motor generator to charge battery depending on the state of charge.

=> PXP028.rev65(MPS firmware,ck=3538)(scma,1010914,scma).hex
- Correction on battery test not operating, in parallel systems when operating in stby_ON.
- Correction on action n.4 from remote, used when set Stby_OFF operation.

=> PXP028-64(MPS firmware,ck=007A)(scma,0110914,scma).hex
Added special ups size of 35kVA in ups type = 16 "UPS Ship, 440V 30Batt."

=> PXP028-63(MPS firmware,ck=458F)(scma,310814,scma).hex
Tests on special MPT120 with pwm frequency set to 1.8kHz.

=> PXP028.rev62(Firmware MPS,ck=FFF3)(scma,180714,scma).hex
- Correction on input current balancing when operating with common battery in parallel system.
- Added action n.35, to enable/disable from remote the common battery operation in parallel system.
- Added new special ups type n.21 and new sizes with ups type =2.

=> PXP028.rev61(Firmware MPS,ck=72B3),(scma,150714,scma).hex
- Correction on ups used as "SPS"
- Correction on battery autonomy calculation on ups with reduced power

=> PXP028.rev60(Firmware MPS ,ck=BDD4)(scma,200614,scma).hex
- Correction of communication loss when installing Netman cards on both slots (it is required also the graphic panel upgrading to PXG2003.rev6)
- Upgraded handling of special ups named "SPS"
- Activated alarms n.82 and 83 to start alarms when the battery charge is lower than fixed levels customized by menu cod.321776.
- On action n.4, enabled the switching from STANDBY_OFF to ONLINE operation from an external remote contact.
- Added capability of current dynamic soft-starting with special setting and upgrading DSP firmware to PXM3001.rev63

=> PXP028.rev59(Firmware MPS ,ck=3550)(scma,090614,scma).hex
- Upgraded the Handling of MHE version.

=> PXP028.rev58(Firmware MPS,ck=FFD7)(scma,190514,scma).hex
- Correction on some Chinese panel messages.
- Added message " BATTERY CHARGER OFF " when starting the ups before connecting the battery.
This to allow the ups checking of battery voltage before switching on the battery charger.
In any case the battery charger can be switched on, before connecting the battery for testing, from battery voltage measuring menu (key 2,2,2).
The panel will show "5=Bat.Ch->ON", therefore, using the key "5" it is possible to switch on the charger.

=> PXP028.rev57(Firmware MPS,ck=D0D7)(scma,060514,scma).hex
- Customized alarm n.64 only for a special custom ups.

=> PXP028.rev56(Firmware MPS, ck=C26D)(scma,210314,scma).hex
- correction of operation with Flywheel
(the battery charger is off in the first starting)
- Correction of a delayed battery test starting on a slave unit in parallel systems with common battery

=> PXP028.rev55(Firmware MPS, ck=C7C0)(scma,110314,scma).hex
- Added alarm n.99 to drive an external battery contactor.

=> PXP028.rev54(MPS, ck=0598)(scma,280214,scma).hex
- Handling of special converters 480-60Hz/400V-50Hz
- Handling of special UPS customized as CSS
- Added new special ups type n.20.

=> PXP028.rev53(Firmware MPS, ck=B88D)(scma,180214,scma).hex
- correction on enabling battery charger when operating on calibration menu and measuring menu (using key 5) regarding the battery voltage

=> PXP028.rev52(Firmware MPS, ck=C656),110214.hex
- Correction wrong short inverter restarting on load after shutdown by the end of battery discharge on MHT UPS.
- Correction management of two new special converters 50 and 60kVA with exit 50 and 400Hz
- In the menu reading of the battery voltage, enabled the 5 key to force the switching on of the battery charger with battery not present or with low voltage .
- correct the step "Test Slot" in the base setting menu.
This is because the version 48 gave not the correct answer "Rx=1" during the "Test Slot ."
- Added new special ups type n.20.

=> PXP028.rev51-(Firmware MPS, ck=4931)(scma,230114,scma).hex
- Fixed messages in the Chinese language,
for this porpouse it needs also the version PXG2003 Rev.5

- Reduced the delay time to return from bypass to inverter after an extended overload.
The new values of delay as a function of the load are the following.
with 90 % there is a delay of 470 sec. 7.8 min.
with 80 % there is a delay of 214 sec. 3.5 min.
with 60 % there is a delay of 50 sec. 0.9 min.
-

=> PXP028.rev50(Firmware MPS, ck=F077)(scma,191213,scma).hex
- In system with central bypass, enabled firmware update holding SWOUT closed the opening the input SWIN
This is to allow the firmware update on bypass unit holding mentenedo the ouput load on inverter
- Correction of message sent to Netman UPS for use on special ups with Lithium battery

=> PXP028.rev49(Firmware MPS, ck=5113)(scma,101213,scma).hex
- Correction of bug in the setting menu when selection ups size

=> PXP028.rev48(Firmware MPS, ck=6A60)(scma,091213,scma).hex
- adding management of solar inverter connected on the UPS output

=> PXP028.rev47(Firmware MPS, ck=D6EC)(scma,191113,scma).hex
- correction of a wrong short output power failure when selected operation STBYON with Cycle charging, and the battery is fully charged to 100%.
The error is present in version 28 from rev.21 to rev 46.
- Upgraded CHINESE chars. To use chinese language it is required to upgrade also the graphic panel firmware to version 2003 rev.4.
- Added cod. 341155: For increasing sensitivity to errors on input voltage for the MHT ups.
This is to prevent over voltage on the converter output due to a sudden change of phase in the input voltage,
For example in the case of fast switching from the generator to the main line.
NOTE: This feature only available upgrading DSP firmware to PXM3001rev.59.
- Added the ability to switch on bypass line without interruption, also when using the UGS optional card to force the inverter syncro to an external source, when the ups detects the external signal is phase with the input bypass line voltage.
- Added programmable remote alarm n.102 to indicate phase correct between inverter output voltage and input bypass voltage
- Added programmable remote alarm n.103 to get over temperature prealarm when the temperature is close to max. value (4 degree less)
- Added programmable remote alarm n.104 to get alarm when the input feeding main line is out of the range 39..65Hz on MPT, 40..70Hz on MHT.
- Added two new custom ups type version n.17 and n.18

=> PXP028.rev46(Firmware MPS ,ck=CC9C)(scma,271013,scma).zip
- cod.156236 to enable frequency converter operation with 400V 50Hz output on special MHT UL with 480V 60Hz output
- cod.345516 to enable monitoring of external battery switch on special MHT UL with power up to 125kVA

=> PXP028.rev45(Firmware MPS,ck=DCA0)(scma,230713,scma).hex
- correction on cold starting from battery on parallel units.
- added normal operation time counting also on stby_on operation.
- added the disable of switching-on of the battery SCR or the battery charger,
in the first switching on of ups, this until it is detected
the battery connected with a minimum voltage of 1.8 V / cell.
This to detect a connected battery with reverse polarity or with a short circuit.
The SCR or the charger are anyway switched on when activated
the adjusting menu of the battery voltage.
- In parallel system with active the cod.cod.765432 "Energy save",
in case of low load, the units that will be switched off will be changed
with a cycle of 10 days. Each day at the time of battery testing
all units are switched on and after progressively switched off starting
from the units that has the ident number equal to day unit number.
The units ident number is selected automatically from the system when
switching on the control logic.
- added a customizing of the 3 standard remote contact
with cod.446712 per "Enable RL1..3 command for CSS".
This to get the driving of emergency lights groups with 3 different delay
from the failure of voltage at the input of bypass line.
The delay to switch the relays RL1, RL2, RL3 is 40, 160, 280msec.

=> PXP028.rev44(Firmware MPS,ck=3EFA)(scma,040713,scma).hex
- correction, ver.28 rev.43 does not store the changes of the calibration data.
- correction, from ver.28 rev.38, the central bypass had a message
of overtemperature with too low a temperature on the heat sink SCR.

=> PXP028.rev43(Firmware MPS,ck=7487)(scma,280613,scma).hex
- added custom operation with litio battery "Entek"
- Added remote action n.34, to stop the battery voltage increasing during constant
Current charging and holding the reached battery voltage .
- Added input converter disable when inserting bypass command from panel,
and after charging battery to 100%. This to save energy.

=> PXP028.rev42(Firmware MPS,ck=FA71)(scma,250613,scma).hex
- Correct wrong voltage dc increasing in the input converter output,
when setting ups utput voltage 240Vln and feeding the ups
with input higher than 400Vac.

=> PXP028.rev41(MHT LITIO,ck=4189)(scma,200613,scma).hex
- upgraded custom operation with litio battery "Enerdel"

=> PXP028.rev40(Firmware MPS ,ck=C733)(scma,090513,scma).hex
- on MHT, disabled input converter lock in case of Internal failure 8
- Added cod.753211 for single disabling of bypass and/or inverter synch.
- Added remote action n.33, to disable bypass holding inverter synch.
- Added ups type = 16 "UPS Ship, 440V 30Batt."
(Ups "Ship Italy", in/out 440/230V, 30 battery)

=> PXP028.rev39(Firmware MPS,ck=CF60)(scma,120413,scma).hex
- Added custom MSB1200 system

=> PXP028.rev38(Firmware MPS,ck=AEEE)(scma,100413,scma).hex
- Added custom MSB1600 system
- Added remote alarm signals 98..101

=> PXP028.rev37(Firmware MPS,ck=72AC)(scma,140313,scma).hex
- correction on self setting to 60Hz in case of parallel slave units.

=> PXP028.rev36(Firmware MPS,ck=50C6)(scma,120313,scma).hex
- added custom ups model FM5

=> PXP028.rev35(Firmware MPS,ck=B156)(scma,280213,scma).hex
- correction on wrong characters shown on modem menu.

=> PXP028.rev34(Firmware MPS,ck=B531)(scma,180113,scma).hex
- Increased the PWM frequency on MPT60-80 in case of overload.

=> PXP028.rev33(Firmware MPS,ck=35C2)(scma,101212,scma).hex
- Removed wrong storing events for each test battery, inserted in PXP028.rev31
- On graphic panel, correct graphic line output OFF, with presence of output voltage coming from the bypass line.
- Adding indication "Batt = OFF" in case of
- battery disconnect,
- when the battery charger is OFF in the MHT,
- when they battery SCR is OFF in the MPT and MPM,
- when the battery is 100% charged and is active cyclic loading.
In that case the battery charge is not reset and therefore if you reconnect the battery it does not loss the charge status.
- Added alarm no. 97, programmable on remote contact, as the sum of alarms 11,13,14,71 (Fail2 +4 +5, + disables charging).
- Insert to capability to force the state of charge from the ups panel. This by pressing a key during the battery test started with the keys 3 and 2. The keys 4, 5, 6, set the charge to 0%, 50% and 100% Ah
The keys 8 or 1, stops the test before of time programmed, this to avoid the update of the state of charge carried out by the test.

=> PXP028.rev32(Firmware MPS, ck=F122)(scma,281112,scma).hex
- Correction function of the delay on the alarm for error on output voltage set with cod.436777.
It did not work correctly in the case of strongly distorting load
- Insert cod.636232 ("Cycles to disable Fast Vout alarm: n = ...") to disable up to 255 cycles (20msec * 255 = 5sec.) the fast control of the inverter output voltage during the return from bypass to inverter. It can be used to obtain the return on inverter with loads highly distorting, without entering high permanent delay values with cod. 436777.

=> PXP028.rev31Firmware MPS,ck=0DCD)(scma,291012,scma).hex
- Correction of reading input current of UPS 30kVA trimono Fincantieri
- Insert cod. 512361 "Operation with Lithium Battery = .." for setting MHT300 special battery LITHIUM controlled by BMS EnerDel and special Netman2
- To MHT, disabled the wrong block of the converter input, with "Fault 6", in case of input voltages unbalanced more than 20%.

=> PXP028.rev30(Firmware MPS,ck=E866)(scma,051012,scma).hex
- Correction of wrong apparent power measurement in custom reduced power ups.
- Changed remote action n.31 to disable the inverter synch. to bypass line and to external line with UGS. Holding the possibility to switch on bypass line, with short interruption,in case of inverter stopping because of fault or permanent overload.
- Added code 441422 to enable "insulation loss AC" alarm in a custom ups equipped with signal input auto transformer to operate in systems without neutral wire in input and output.

=> PXP028.rev29(Firmware MPS,ck=4181)(scma,210912,scma).hex
- Changed Letter to identify model in a custom ups.
- Correction of alarm "Memory changed" in slave units when customizing system output voltage from master unit.
- Changed action n.9 from remote, to execute the bypass command also when the inverter is no sync. with bypass line, with short interruption.

=> PXP028.rev28(Firmware MPS,ck=20BE)(scma,110912,scma).hex
- Correction of 12 pulse slave rectifier input current measurement shown on computer debug view.
- In MHT ups it is hided the message "SWBAT open"while it is present. the message "WAIT starting: NOT connect the BATTERY".
- Added action n.32 from remote to be used only on special MHT.

=> PXP028.rev27(Firmware MPS,ck=D73A)(scma,100812,scma).zip
- Added 2 hours delay to detect high voltage on battery when switching back from quick to floating battery charging.
In MHT ups, the battery decreases its voltage very slow after quick charging because there is not any current discharging current.
Therefore the system with the cycle charging disabled stopped within 1 minute, with Fault4, because it measured a voltage higher than the fixed value to floating charging.
In systems with cycle charge enabled the alarm was not preset because after charging the charger is switched OFF.

=> PXP028.rev26(Firmware MPS,ck=BCD6)(scma,300712,scma).hex
- Added custom ups 30kW 690/220V single phase.

=> PXP028.rev25(Firmware MPS,ck=1B5B)(scma,300712,scma).hex
- Added the function "4=LCD_ON(1)" in the menu commands (3) to set always ON the graphic panel light. Available only after upgrading the firmware panel to ver. PXG2003 rev02.
- Added Chinese language selection (keys 11777). Available only after upgrading the firmware panel to ver. PXG2003 rev02.
- Correction of a wrong transitory alarm "Fail4" when switching OFF the ups by ups_OFF command from panel or from Remote EPO.
- Changed adjusting menu for input voltage on ups with SCR input stage. The correction value shown on panel is amplified 10 times to allow more adjusting precision.

=> PXP028.rev24(Firmware MPS,ck=7A00)(scma,040712,scma).hex
- Correction of wrong panel battery current indication with values over 1000A
- Increased the precision on input voltage setting procedure on MPT ups
- Added cod."716253" to operate with signal from external SWMB with n.o. contact on a Custom MHT600
- Added action 31 to synchronize the inverter to external line connected with UGS, by means of a remote contact.
- Added new custom ups type selection from 10 to 15.

=> PXP028.rev23(Firmware MPS,ck=1368)(scma,250612,scma).hex
- Custom MHT 200kW and 500kW "ENI" with "Stbyon_HE" operation.

=> PXP028.rev22-02(Firmware MPS,ck=F33B)(scma,150612,scma).hex
- Custom Converter 400-440V60Hz 600kVA with MHT600

=> PXP028.rev21(Firmware MPS,ck=41CD)(scma,020512,scma).zip
- Added new custom ups type selection n. 13 and 14
("UPS 480->400V50Hz UL" and "UPS UL 400/400V 50Hz ")

PXC8028.rev20(MPS system 400Hz,ck=FFD1)(scma,290212,scma).hex
- Frequency converter with output 400Hz WITH battery and new graphic panel

=> PXP028.rev20(Firmware MPS,ck=62C8)(scma,170412,scma).hex
- Added the output energy value to the message sent to serial ports RS232

=> PXP028.rev19(Firmware MPS, ck=93EF)(scma,140112,scma).hex
- Added selection of operation with 32 battery on custom MHT

=> PXP028.rev18(Firmware MPS ,ck=9AB8)(scma,100112,scma).hex
- Custom MPT120 with brake circuit to handle energy back feed from output.

PXC8028.rev17(MPS system 400Hz,ck=E69C)(scma,200112,scma).hex
- Frequency converter with output 400Hz without battery and new graphic panel

=> PXP028.rev17-(Firmware MPS,ck=2D8D)(scma,301211,scma).hex
- Correction power measurement on custom 30kW 690/230V ups

=> PXP028.rev17-(Firmware MPS,ck=7862)(scma,271211,scma).hex
- Added custom ups 8 kVA with input /output 690V 60Hz
- MHT300 customized to operate with 33 battery blocks

=> PXP028.rev16(Firmware MPS,ck=B908)(scma,211111,scma).hex
- Added cod. 154224 to show a custom serial number using the modem-send field.
- Added action 29 to execute UPS_OFF without sending command to switch off an external battery switch
- Added action 30 to reset a stored UPS_OFF command .

=> PXP028.rev15(Firmware MPS,ck=064C)(scma,241011,scma).zip
- Added action 28 from remote input, to start one STBY_ON cycle when bypass line is OK. The started STBY_ON set is erased when the bypass line is not correct.
- Added handling of a custom ups (Type=9).

=> PXP028.rev14(Firmware MPS,ck=083E)(scma,060911,scma).hex
- added handling of a custom ups IP41.

=> PXP028.rev13(Firmware MPS,ck=DE3D)(scma,300911,scma).hex
- Correct wrong message "Fly.." when upgrading system from ver.27 rev.34.
- Correct wrong SCR battery fast switching_ON at the starting of battery test with 100% charged battery and cycle charging active.
- Correct wrong battery test operation when selected Stby_OFF operation.
- Added action 27 to have a second EPO command from a remote "N.O." or "N.C." contact
- Activated alarm 63 also when the system is OFF because it is active the EPO signal or panel command to switch off the system.
This to have a signal when the output voltage is not present.

=> PXP028.rev12(Firmware MPS,ck=C8C4)(scma,070911,scma).hex
- Correct wrong Disable Sync. command in systems with UGS
- Correct wrong cold start (starting system from battery)in previous ver.28rev.01
- Corrent wrong Stby_On operation when battery 100% charged with cyclic charging.

=> PXP028.rev11(Firmware MPS,ck=A801)(scma,250711,scma).hex
- In ups "HP" correct the "Not self starting system" with the request to push key 8 after switching off the system, opening SWOUT while in battery operation.
- Correct the low dc voltage setting to normal dc voltage setting in the VDC adjusting setting step

=> PXP028.rev10(Firmware MPS,ck=EB1B)(scma,080711,scma).hex
- Insert cod. 732675 to reduce output P.F. from 0.9 to 0.8 on UPS with graphic panel.
- Correct wrong message "Overtemperature" on MPS 500kVA, using ver.28 rev.08
- Correct handling of MPS 10kVA
- Reset by default, the system starting from bypss line when it is available.
This default setting was not set on ver.28 rev.08

=> PXP028.rev09(Firmware MPS,ck=7EB0)(scma,280611,scma).hex
- On ups operating with 480V,changed command to close the rele on power supply card because some time it had blown the card feeding fuse when switching on the system.

=> PXP028.rev08(Firmware MPS,ck=0EAA)(scma,170611,scma).hex
- Correct wrong disable of cycle charging on HP500.

=> PXP028.rev07(Firmware MPS,ck=69EC)(scma,060611,scma).hex
- added handling of HP 80 and 100kVA UL (480V/480 60Hz).

=> PXP028.rev06(Firmware MPS,ck=E491)(scma,200511,scma).hex
- added handling of HP 125kVA UL (480V/480V 60Hz).

=> PXP028.rev05(Firmware MPS,ck=0C31)(scma,110511,scma).hex
- added HP 500kVA system.

=> PXP028.rev04(Firmware MPS,ck=C919)(scma,290411,scma).hex
- Added special system of 3 MPS300kVA with 600kVA centralized bypass unit.

=> PXP028.rev03(Firmware MPS,ck=E4E0)(scma,200411,scma).hex
- UPS with graphic panel
- added code 734273 to disable customizing codes.
When the customizing codes are disabled, the panel shows "PW3? ..." when inserting codes. It needs to insert the same code to unlock.
In case of using the previous disabling codes,
the panel shows "PW1? ..." for cod.111777 or "PW2? ..." for cod.111773
- added customizing code disable by password from RS232 port.
When locked the panel shows "PASSWORD RS232?".

=> PXP028.rev02(Firmware MPS,ck=E3D3)(scma,130411,scma).hex
- only for testing.

=> PXP028.rev01(Firmware MPS,ck=1AA8)(scma,160211,scma).hex
- only for testing.

=> PXP027.rev58(Firmware MPS,ck=73F5)(scma,080611,scma).hex
- Added the action 26 from remote input, to disable the synchronizing to the input bypass line when it is installed the "UGS interface".
When the action is active, the panel shows "SY.dis".
In this case, if the inverter stops, the output will be switched to bypass line with an interruption of about 100msec. in case of unit with inverter output contactor (HP up to 400kVA, MPS up to 200kVA) or with 20msec. in case of unit with inverter output static switch (HP 500, MPS 250..800kVA).
That time can be increased up to other 100 msec.(cod.214716).
- Correction of some wrong message when using the flywheel.

=> PXP027.rev57(Firmware MPS,ck=7405)(scma,240511,scma).hex
- only for testing.

=> PXP027.rev55(Firmware MPS,ck=A935)(scma,200411,scma).hex
- In parallel systems correct operation with Fail19 alarm.
When was present wrong signal "SWOUT open" and the power SWOUT was closed, the fail19 alarm was shown but the slave parallel unit was not disabled.

=> PXP027.rev54(Firmware MPS,ck=A98B)(scma,120411,scma).hex
- Changed battery discharging bit on special RS485 message
The bit is enabled when the input stage is off
- In The "HP" ups, increased delay to give "Fail 6" alarm from 5 to 20 sec. when the Input current is low because of input contactor fail.
With permanent fail6 alarm, the input stage is disabled after 60sec..

=> PXP027.rev53(Firmware MPS,ck=B12B)(scma,010411,scma).zip
- enlarged voltage range on manual battery charging by code 323277.

=> PXP027.rev52(Firmware MPS,ck=B443)(scma,300311,scma).hex
- Insert handling of custom MPM60 with high charging current
- added alarm 92: input rectifier operating

=> PXP027.rev51(Firmware MPS,ck=3661)(scma,0102111,scma).hex
- correction wrong input voltage range on UPS in/out 440V,60Hz.
- correction input current measure on MPS80
- Insert correct handling of FlyWheel unit in place of battery

=> PXP027.rev50(Firmware MPS,ck=28EA)(scma,180111,scma).hex
- correction of 3% error, on active output power measure.
- insert handling special 10 and 20kVA 220Vdc.

=> PXP027.rev49(Firmware MPS,ck=E39A)(scma,110111,scma).hex
- correction battery autonomy calculation and battery testing values in case low battery temperature.
- Insert "Fault 6" alarm in case of MPS-HP input contactor failure.

=> PXP027.rev48(Firmware MPS,ck=97E7)(scma,061210,scma).hex
- added cod.326666, Boost charging time increasing, available only with bat.type=0
- added cod.326665, Battery charging voltage Temperature coefficient adjustment, available only with bat.type=0

=> PXP027.rev47(Firmware MPS,ck=CE4C)(scma,241110,scma).hex
- Used on a MPS30 custom

=> PXP027.rev46(Firmware MPS,ck=5306)(scma,041110,scma).hex
- On MPS,(the MPS-HP are OK) Correction of autonomy, the autonomy result set to zero immediately after the main failure due to the battery discharging current reading delay.

- On MPS-HP, in case of return to main line operation from battery operation, with the presence of output overload, it happen that the battery continue to be discharged with full power because the input current is limited to a minimum value.

- In case of EPO command,it was too short, the command to switch_off an external battery switch with big size, (The command operated by using the remote contact programmed with action 88), To have longer command, it is increased the time to switch off the inverter from 1.5 to 3 sec.

- insert handling of a special MPS-HP 100kVA, 440V 60Hz input/output

=> PXP027.rev45(Firmware MPS,ck=2874)(scma,121010,scma).hex
- Correction of wrong slave operation on parallel units operating with output voltage 440 or 480V
- The return to standard panel operation after inserting locking codes 111777 and 111773 can be done only inserting again the same codes The standard customizing code (436215) does not operates. After locking by code 111777 or 111773. The panel shows PW1. or PW2. in place of Cod. to indicate witch one to insert.
- Added cod. 312126 to disable the repetition of the automatic battery test that is executed within 1 minute after a failed test. This in order to have a permanent alarm also in case of battery partially not efficient.

=> PXP027.rev44 used only for testing

=> PXP027.rev43 used only for testing

=> PXP027.rev42(Firmware MPS,ck=9540)(scma,220710,scma).hex
- The code "Panel key disable" disable only the commands (key 3) and allow the usage of other panel keys to get information about ups operation and measurement.
- Added handling of MPS sizes 30 and 40kVA

=> PXP027.rev41(Firmware MPS,ck=5DEE)(scma,090610,scma).hex
- added remote output alarm "91" to give the signal output voltage present and input bypass line voltage present and correct with synchro and switching to bypass enabled. This output was used to disable the bypass line in the slave group of a system with "UGS control card".

=> PXP027.rev40(Firmware MPS,ck=362B)(scma,200510,scma).hex
- Disable the daily decreasing of battery status of charge from 100% to 99%Ah in case of floating charge operation (cyclic charging disabled)
- Increased time delay to give "Internal fail 8" to avoid wrong alarm when the rectifier switches from quick charging to floating charging in case of high battery capacity and very low output load.

PXC8027.rev40(MPS system 400Hz,ck=CD3A)(scma,250510,scma).hex

- Enabled the 400Hz frequency converter 30kVA to operate with 500Vdc.

PXC8027.rev39(MPS system 400Hz,ck=411C)(scma,030310,scma).hex

- Enabled cod. 732453 to operate the 400Hz frequency converter 30kVA also without output contactor (TLI)

=> PXP027.rev39(Firmware MPS,ck=2A2F)(scma,080310,scma).hex

- Correct wrong current rectifier current limiting during battery test.
This to avoid the inverter switching off during the battery test, in case of battery not present or not good, and with output load over 30%.
- Added new signals to be used with MULTICOM 302, RS485 Modbus interface.
- Added remote input action "23", to receive signal status from an external input switch "SWBY"
- Added remote output alarm "89", to give alarm when received a signal from the external "SWBY" switch, (action "23")
- Added remote output alarm "90", to give "Low battery temperature" alarm

=> PXP027.rev38(Firmware MPS,ck=2997)(scma,050210,scma).hex

- Added sizes of 30 and 40kVA single phase output with 32 batt. blocks.
- Added a special version of MPS-HP 120 with pf.0.9.

=> PXP027.rev37(Firmware MPS,ck=1C5F)(scma,200110,scma).hex

- Added starting from battery on HP/HIP ups.
It requires the DSP upgrading to PXM3001 rev.19, the "Precharging kit" and a modification on power supply card "9..2120.." connection (on connector J2, it needs to change the connection from pin 7 to pin 4).

=> PXP027.rev36(Firmware MPS,ck=6A04)(scma,221209,scma).hex

- Correct battery testing voltage calculation used to check the battery voltage during battery testing and battery operation.
The error was introduced in ver.27 rev.13 by the action to decrease the voltage values to test the battery with battery type = 1..3.
The error gives wrong battery low alarm and reduces the displayed and transmitted autonomy time.
This error is more important with high discharging current (current bigger than battery capacity [Ah])
- Added cod. 327654 to customize the battery voltage reference level used for battery testing with battery type 1..3,
The display will show "Battery type=1..3, 'Vs' Customiz."
It will be possible to add a fixed voltage, from -99V to +99V, to the standard reference voltage.
When customized with some value the Prealarm menu will show (Custom.)
- In the adjusting procedure with cod. 151541 and cod 123451, it was added the step to adjust the input current reading.
The adjusting is enabled only with output load over 20%.
The adjusting has a single parameter that operates on all three values.
- The slave unit change to master when it is inserted by closing SWOUT after upgrading the firmware.
- Added alarm n.88 to be used for programming remote relays
This alarm is active from 1 sec. before the UPS_OFF command from EPO
It is intended to drive the tripping coil of external battery breaker by using the inverter output voltage 1 sec. before the ups swiching off.

=> PXP027.rev34(Firmware MPS,ck=C11B)(scma,261109,scma).hex

- On HP/HIP system the input converter was stopped when one of the three input current is not present in case of failure that is displayed as "Internal Failure 8".
- Correct the operation of "Manual" battery discharging with cod.423531 in case of parallel system with single battery operation.
In that case command insert in the master unit was not sent to the slave units.
- Added programmable remote action 22.

=> PXP027.rev33(Firmware MPS,ck=AE1C)(scma,021109,scma).hex

- In the HP/HIP ups, added the inverter lock when there is a failure in both input and battery booster.
- In the HP/HIP ups, after the switching-OFF due to the end of battery discharge The inverter restart only after the input booster restarting. This to avoid the inverter restarting due to the battery voltage recovering because the battery load is disconnected.
- When operating the mode "Energy saving" all units are switched-on when operating from battery and when the bypass line is not present.
- To the alarms "SERVICE UPS" and "SERVICE BATTERY" has been added the telephone number insert in the customizing menu Modem-Dial. The alarm message becomes "SERVICE UPS Tel.123456789012345"
- Correct wrong "LOW INPUT VOLTAGE or OUTPUT OVERLOAD [W]" alarm, in case of customizing with softstart delay > 30 sec.

PXC8027.rev33(MPS system 400Hz, ck=618E)(scma,301009,scma).hex

- Added parallel operation on 400Hz converters.

=> PXP027.rev32(Firmware MPS HP300,ck=7876)(scma,081009,scma).hex

- Added handling of HP300.
- Added programmable remote actions 19, 20 and 21.

=> PXP027.rev31(Firmware MPS,ck=5f67)(scma,280909,scma).hex

- aggiunta gestione HP300
- insert cod. 765432 to enable "Energy Saving" mode on parallel system

=> PXP027.rev30(Firmware MPS,ck=6EB1)(scda,290709,scma).hex.

- Insert Correct handling of a new HP/HIP 400.
- By default, in parallel systems it has been added the bypass command in case of fault in one static bypass switch (Internal Fault 5). It is always possible to disable that system bypass command by customizing with code 476312, and using the remote alarm "Fault 5" to open the bypass line by an external device.

=> PXP027.rev29(Firmware MPS,ck=6E64)(scma,240709,scma).hex

- added code 121217 to set an optional input current limitation level that will operates only when an external command will be applied on a "Remote" input that was programmed with action n.18.

=> PXP027.rev28(Firmware MPS,ck=BF6D)(scma,090709,scma).hex

- Changed the operation of the delay applied on remote alarm contact. Now the remote alarm contact is moved after the customized delay in both case, when the alarm start and also when the alarm stop.
- In parallel systems using a common single battery, when a unit operates from battery while the other units are operating from main line, because that unit the input rectifier off, for fail or because SWIN is open, a message of fail will be displayed with a delay of about 20 sec.
"Fail 36, Slave OFF by rectifier/SWIN OFF"
In the same unit, the inverter will be switched off after a further delay of 100 sec.
This operation avoid the battery discharging, because the other units have a limited battery charging current capacity and therefore are not able to charge the battery ad to feed an external inverter with load.

=> PXP027.rev27(Firmware MPS,ck=BF6D)(scma,090709,scma).hex

- insert code 311331 to enable the HP input booster operation with any input phase sequence.

=> PXP027.rev26(firmware MPS,ck=5E3C)(scma,190509,scma).hex
- Insert handling of a system with parallel ups units having an external central bypass cabinet.

=> PXP027.rev25(System firmware MPS,ck=B9DB)(scma,300409,scma).hex
- Insert code 147523 to decreasing the inverter voltage control gain to be used on parallel systems in case of output voltage oscillation due to high capacitive load

=> PXP027.rev24(Not used)

=> PXP027.rev23(Firmware MPS,ck=EDFD)(scma,220609,scma).hex
- Insert handling of a custom 125kVA three phase output model.

=> PXP027.rev22(Firmware MPS,ck=1BA6)(scma,190609,scma).hex
- Insert handling of a custom 25kVA single phase output model.

=> PXP027.rev21(Firmware MPS,ck=0DFE).(scma,040609,scma).hex
- Insert handling of a custom 20kVA single phase output model.

=> PXP027.rev20(System firmware MPS,ck=17E8)(scma,140509,scma).hex
- Correction of wrong output voltage limiting present on ver.027 rev.19 on frequency converter with 450V 60Hz output.
- Insert handling of 100kVA single phase output model.

=> PXP027.rev19(System firmware MPS,ck=8323)(scma,160409,scma).hex
- Correction of input current limitation on HP systems, to avoid input stopping in case of overload, it needs also the DSP upgrading to PXM3001.rev02.
- insert special ups with input and output 440V 60Hz.
- Added the selection of special type of ups with code 151451 from Debug
- Added the code "717273" to be used only on special custom converter.

=> PXP027.rev18(System firmware MPS,ck=6921)(scma,100409,scma).hex
- correct rectifier voltage control gain and alarm when operating with the inverter off, because is active the bypass command or the standby_ON operation
- insert special ups with input and output 480V 60Hz.

=> PXP027.rev17, not used on standard production.

=> PXP027.rev16(System firmware MPS,ck=FA1E)(scma,280209,scma).hex
- When inserting the bypass command (keys 3,6) the inverter switches off after 30 sec.. This to allow the inverter input dc capacitors discharging when there is some dc over voltage due to the switching on bypass with the inverter switching off in the same instant.
- added the programmable action 15 to execute the action 1 and 2 with only one contact input. This to disable charging an bypass line when feeding the UPS from a poor motor generator.

=> PXP027.rev15(System firmware MPS,ck=B209)(scma,190209,scma).hex
- correct the action 1 from remote (battery charging disable)
That action caused the rectifier stopping and FAIL4 alarm, with 2 min. delay

=> PXP027.rev14(System firmware MPS, ck=D8C8)(scma,070209,scma).hex
- correct letter shown on panel for converter having output 450V 60Hz on rev.13, from wrong "H400" to "C400".
- correct the delay setting when using the second optional signalas and commands expansion card. The value > 0 disabled the alarm/action.
- Insert handling of a special custom ups having 3 more alarms (aux 1, 2,3)
- Added 2 programmable actions (13,14) from remote to force the floating battery charging or the quick battery charging.

=> PXP027.rev13(system MPS-HP, ck=)(scma,210109,scma).hex

- correct the automatic setting of "REMOTE" to the standard function when upgrading firmware with ver.24 or lower.
It happened that upgrading system with ver.27 rev. 01..12 from previous ver. 24 or lower, the "REMOTE" (contacts and INV_OFF input command) became programmable and their e function (alarm/action) was set to 0 (not operating). In that case it needs to restore standard "REMOTE" using code 132344, menu 2 and 3 with key 2 = init.
- Decreased the voltage values to test the battery with battery type = 1..3, this to avoid battery low alarm with some other standard type of battery.
- Changed the battery testing values to test the battery with battery type=0. The values are customized by menu "prealarm" + key 4. The "Low battery" alarm start when the mesured battery voltage result lower then customized voltage values Vs, Vp and Vmin.
When the battery has a charge from 100% to 80% it used the value "Vs".
When the battery has a charge from 80% to 10% is used a value decreasing from Vs to Vp.
- Correct wrong alarm Fail4 and Fail8 in case of "Manual battery test" activated by code "423531"
- Added the decreasing of rectifier charging voltage to 90% of floating voltage when the command to disable the charging from remote, is present.
This, because it was required to reduce more the charging current.
The previous lower limit was 1% of battery current transformer.
- Correction on Action 11(Inverter OFF action) from REMOTE.
This because in case Frequency converters operating in parallel the command "inverter OFF" (input with action 11) given on one unit switched off all other units, and also those units were not able to restart when the command was cleared by opening the remote contact.
Now the command switch off the inverter only in the unit in which it is applied by a closed contact and it is cleared when the contact is opened.
- Linked the Output instantaneous voltage checking mask to the customized standby-ON voltage range, when setting the Standby_ON operation.
This to have a faster voltage fail detection by customizing the standby-ON voltage range value lower than bypass voltage range value.
- Insert the alarm "Fail 19" and the Slave disabling in case of failure on the SWOUT auxiliary contact. The alarm starts when the SWOUT auxiliary contact shows "SWOUT open" while it is measured ups output current higher than 12A%.
The alarm is cleared when the SWOUT come back to be detected as closed.
- Correct alarm n.71,72. They was not operating.

=> PXP027.rev12(system MPS-HP, ck=4D53)(scma,231208,scma).hex

- add handling of one special custom ups, selctable by "ups_type" menu with special alarms n.82, 83, 84(aux1, aux2, aux3).

=> PXP027.rev11(system MPS-HP, ck=A1BA)(scma,171208,scma).hex

- insert code 153211 to allow the operation with 33 x 12V battery blocks in place of the standard 40x12V blocks, only on MPS-HP from 100 to 200kVA with battery autonomy lower than 30 min. When active that option, the panel shows the option "o=2..". Note that this option code has also the meanings of option "timer_off active" like standard ups.

=> PXP027.rev10(Firmware sistema MPS, ck=1475)(scma,111208,scma).hex

- on parallel systems operating with single battery, correct the calculation of battery voltage for battery testing in case of discharging with high current rate compared with AH battery capacity.
- on MPS-HP, correct the ups switching off by opening all breakers SWIN, SWBY and SWOUT.

=> PXP027.rev09(system MPS, ck=40C9)(scma,281108,scma).hex
- On parallel systems, each unit will be able to command the switching
on bypass line, after counting an overload time, when the bypass line is correct.

=> PXP027.rev08(system MPS, ck=D005)(scma,11108,scma).hex
- Correct operation with custom code 461123 (redundancy check)
The alarm of "Parallel Redund. lost: High unit power" did not operate.
- Disabled the inverter autorestarting after igbt module desaturation,
to prevent possibility of further damage.
- In parallel systems with separated batteries, the automatic battery starting
is commanded by each unity, independently by the master.
This to have the possibility to set different time in which the units
execute the battery test, and therefore to avoid a big changing
in power taken from main line.
- In the new ups with firmware ver.27-rev.08, it will be enabled by default,
the system starting from bypass line when that line is present and correct,
without waiting the inverter starting.
The same operation could be enabled by code 447155 from ver.23.

=> PXP027.rev07(system MPS, ck=93F7)(scma,080908,scma).hex
- Enabled again the code 153146 to reset the customized settings
(the code was disabled from PXP027.rev01)

=> PXP027.rev06(system MPS, ck=AAC8)(scma,050908,scma).hex
- Correction of wrong alarm "Fail 8" (Low rectifier input current)
that was generated also when a load > 10%, was fed by the bypass line
for a time longer than 20 sec.

=> PXP027.rev05(system MPS, ck=2E42)(scma,250708,scma).hex
- Insert compensation of charging voltage with battery temperature
when using battery type=0 and when the optional battery temperature
sensor is connected, (compensation -2.6mV/element/degree).

=> PXP027.rev04(System MPS, ck=2E42)(scma,250708,scma).hex
- Used in special ups downgraded to 60kva

=> PXP027.rev03(System MPS, ck=A572)(scma,150708,scma).hex
- Correction: the PXP027.rev01 and rev02 do not execute the first battery
after starting the ups. The other automatic tests are correct.

=> PXP027.rev02(System MPS, ck=7916)(scma,090708,scma).hex
- Correction: the PXP027.rev01 has wrong output current measurement
on ups size 500,600 and 800kVA

=> PXP027.rev01(System MPS, ck=7916)(scma,090708,scma).hex
- Correction: on ver 22 and 24 is missed the exchange of the master unit to slave in case that the master unit has its input bypass line not present while the others units have good input.

- Changed some steps in the sequence for base calibration of a new system card.
- Changed the code to set the date of first installation and to clear all the memory.

- Insert the displaying of ups output currents with Ampere value with key 3 from measurements menu with keys 2,2 (total key sequence 2, 2, 3).
- Insert the displaying of ups output power with true Watt and VA value, with key 3 from "Ampere" menu, total key sequence 2, 2, 3, 3.

- Insert the displaying of ups output energy counter, with key 4 from "Watt" menu, total key sequence 2, 2, 3, 3, 4.
The code to reset the energy counter is 776611

- Insert code 461123 to enable the REDUNDACY checking in parallel systems, look "IT-COD.." file.
- Insert code 132344 to customize the Remote alarm contact and input, look "IT-COD.." file.

- Released the file:
"IT-COD-MPS-V27-English(MPS standard customizing, calibration and test codes), including the list of the previous and new available code to customize the ups operation, and the list of alarm ident. And action ident. to customize the standard Remote contacts and "INV.OFF" input and the optional extension I/O cards.
- The code 132341 allow programming of n.3 optional extension I/O cards, and it has the command to initialize the card 1 with the standard setting.
- Added to new alarm and actions on optional extension I/O card, now also available from standard Remote "Inv.OFF" Input

=> PXP026 - Not used on standard production.

=> PXP025 - Not used on standard production.

=> PXP024.rev03(Firmware MPS, ck=05A3)(scma,060208,scma).hex
- correct a too high sensitivity for locking the inverter, because of a some dc voltage increasing when inserting a slave ups in parallel with other already operating.

=> PXP024.rev02(Firmware MPS, ck=DEAE)(scma,050208,scma).hex
- correct wrong autonomy calculation in case of battery current higher than 600A

=> PXP024.rev01(Firmware MPS, ck=5ABA)(scma,181207,scma).hex
- insert action 9 and 10 from optional extension I/O card
 action 9 = input to start bypass command, it operates only when the bypass line is correct.
 action 10 = input to erase the bypass command (same of key 8 on panel)
- correct the action 4 from optional extension I/O card
(command to fix Standby-ON from remote contact by extension I/O card)

=> PXP023.rev.01(Firmware MPS, ck=2930.hex) 22/10/2007
- 454545, to be used only on special machines modified as frequency converter with output 450V 60Hz.
- 461123, to be used on power parallel system in order to set a minimum number of units that must be ready when starting to feed the output load.

=> PXP022: not used on standard production

=> PXP021(Firmware MPS, ck=755c)(scma,220607,scma).hex
- changed the menu 323234 to set the time to start the daily battery test, the days interval to and time duration of the battery test correct wrong alarm "internal Fail 8" when setting battery test duration longer than 20 sec.
- Insert code for a special version of 300kVA based on 400kVA.

=> PXP020.(system MPS, ck=31b8)(scma,080507,scma).hex
- In the first adjusting procedure added the test to check the connections to the optional card slot1 and 2.
- added cod. "616263" to fix the UPS operation at 60Hz.
It disables the automatic ups system frequency setting during the starting. This to avoid a wrong system setting to 50Hz during the starting, of a system that must be 60Hz.
This can happen in case of starting from a motor generator that has an high load and therefore it can have frequency lower than 55Hz.

=> PXP019.(system MPS, ck=3692)(scma,280307,scma).hex
- Added the handling of the 800kVA UPS
- correction of wrong battery charge capacity calculation when the battery capacity is bigger than 635Ah, during battery test.

=> PXP018(system MPS, ck=F1A0)(scd,270107,scma).hex
- Added the battery current zero offset adjusting in the adjusting procedure
- Added the handling of the 30 and 40kVA single phase with battery 220Vdc
- In the parallel systems, the unit that receive the UPS-OFF command received from RS232 or SNMP card, executes the command and does not transmit the command other units.
To re-enable transimition use code 421721 (the same code to transmit EPO)
- The UPS-OFF command received from RS232 or SNMP card, while main line is not present, (during battery discharging) is not stored, therefore when the main line will come back, the ups will restart.
To disable the autorestart use the code 446212

=> PXP017(system MPS, ck=7399)(scd,141206,scma)mps.hex
- Added the handling of the 600kVA UPS

=> PXP016(system MPS, ck=D883)(scd,301106,scma).hex
- enabled the operation with the optional UGS (Ups Group Synchronizer)


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=> PXP015(system MPS, ck=DF3A)(scma,261006,scma).hex
- Insert the handling of the optional UGS interface card
- Correct error on recording the event history
  (the alarm message shows the ups status of 0.5sec. before)
-----
=> PXP014(system MPS, ck=281D)(sced,280706,scma).hex
- insert special version: 80,60,40,30,20,10 kVA.
- Changed overload alarm level from 103 to 106%
  the i tempi di blocco rimangono invariati a 10min. per 125% e 1 min. per 150%
-----
=> PXP013 not used
-----

=> PXP012(system MPS ck=6744)(sced,230606,scma).hex
- added 250kVA.
- added special version 200kVA with HPS transformer and 40 batteries,
  the panel shows model H200.
- cod. 325511 to customize battery charging current from 3 a 25% Ah
- when selected battery type=0,
  enabled menu 3544 to customize the voltage values to test battery
  Vmin= minimum voltage to discharge battery and switching off the inverter
  Vp = voltage to consider battery 10% charged and to activate prealarm
V10%= tensione test batteria con carica 10%Ah, per attivazione preallarme.
Vs=V100%= tensione utilizzata per test di batteria carica al 100%Ah.
Tutti questi valori sono fissi e indipendenti dal carico uscita e dalla temper.
Nel caso di tipo batteria 1, 2 e 3, nel menu 354 (preallarme) sono visibili
gli stessi valori che però sono calcolati in base al carico e alla temperatura,
e sono impostati per il numero di batteria nominali (Es. MPS200 = 33 batt. 12V)
-----

=> PXP011(system MPS ck=)(sced,290506,scma).hex
- Compensazione con temperatura (-2,6mV/deg.)
  anche della tensione di ricarica rapida (Ah%<=99%)
  oltre a quella di tampone per i tipi 1,2,3, escluso tipo 0.
  Il menu 3534 visualizza le tensioni Vbat ch. e max. con
  temperatura di 20 gradi. Si utilizza la temperatura di sistema
  quando non presente la sonda opzionale per la misura
  della tensione di batteria.
- Negli ups predisposti per la misura di tensione di batteria
  a monte dell'SCR di batteria, attivata la carica "Ciclica".
  Nel menu di "3534" è possibile selezionare il tipo di carica
  tra Ciclica/Tampone.
- Inserito "327171" per impostazione valore temperatura di batteria
  per visualizzare l'allarme "Battery > .. deg."
  e attivare l'allarme 58 "High battery temperature"
  regolazione da 20 a 60 deg.
- Inserito allarme 77 per "Command to open ext. battery switch" attivo
  in fine scarica della batteria o da comando EPO.
- inserito "152231", in modo set (151515) per impostare il numero di mesi
  di funzionamento per far comparire la scritta SERVICE_UPS.
  Il valore di default è 24 mesi.
- inserito "322231" per impostare il numero di mesi di funzionamento
  per far comparire la scritta SERVICE BATTERY. Valore di default 36 mesi.
- aggiunta
  azione 5 = start test automatico di batteria
  azione 6 = start/stop scarica manuale di batteria con blocco raddrizzatore
  azione 7 = Input only to stop the manual battery discharging test
  azzerà anche battery test e ricircolo
- aggiunto blocco per sovraccarico se manca una tensione uscita trifase,
  con inverter attivo e tensione di bypass non presente
  in caso di un fusibile uscita bruciato.
- aggiunto allarme "Internal fail 37" se la tensione di uscita risulta
  superiore al valore max impostato come campo tensione di bypass.

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=> PXP010(system MPS ck=FF38)(sced,120506,scma).hex
- inserito codice "412716" per ritardare la commutazione su bypass se sistema non sincronizzato (campo 0 -> 10 mezzi cicli).
- inserito "423712" per personalizzare la velocita di sincronizzazione regolazione da 0.1 a 3Hz/sec., con limite a 1Hz/sec. per sistemi parallelo.
- inserito "173234" per attivare per scarica batteria su rete di bypass con ricircolo a potenza attiva regolabile dal 10 al 100%W e tempo regolabile dal 1 a 250 min.
Il ciclo si interrompe allo scadere del tempo impostato oppure quando la tensione di batteria scende sotto il valore di preallarme oppure se la tensione di bypass esce dal campo previsto per la tensione di bypass con valore dimezzato.
Es. campo impostato per tensione bypass= +/-20%, campo tens. uscita= +/-10%.
Quando il ciclo è attivo si ha l'allarme 74 "Manual battery test active" sul pannello compare "B.FEED"
Se il ciclo si interrompe prima del tempo prefissato si visualizza l'allarme "Battery discharge failure" e "B.K0" in alto a sinistra; si attiva anche l'allarme 59 "Manual Battery test Failed"

=> PXP009(system MPS ck=88FF)(sced,200406,scma).hex
- inserita gestione MPS 300kVA ricavato da HT300.
- inserito "412716" to_bypass_delay per ritardare la commutazione su bypass se sistema non sincronizzato.

=> PXP008(system MPS ck=82be)(sced,110206,scma).hex
- corretto mancata visualizzaz. allarme FAIL4, per guasto raddrizzatore.
- corretto mancata inizializzazione tlr_delay su eeprom vergini, il sistema non partiva.
- attivati allarme "memoria cambiata 12,13,14" se errore su e2prom.
- inserito cod. 436321 per compensazione caduta di tensione linea uscita.

=> PXP007(system MPS ck=5BA5)(sced,010206,scma).hex
- gestione schede opzionali per espansione uscite relè ed ingressi aux.
- compensazione di temperatura batteria solo se presente la sonda.
- migliorato controllo bilanciamento parallelo in caso di batteria unica
- in caso di parallelo batteria si spegne l'ups che ha un guasto del raddrizzatore per evitare che l'inverter senza raddrizzatore attivo scarichi la batteria.
- attivato allarme "Overtemperature or fan failure" se collegata la scheda la scheda controllo ventilazione a connettore J7/8-2 su scheda contr. inverter 2076.
- Inserito cod. 133421 per attivazione allarme "fuse FAIL" se aperto contatto su connettore J12 pins 11-12, su scheda controllo raddrizz.

=> PXP006 ck=2386 del 29/12/05
- corretta errata indicazione di una piccola corrente batteria anche senza batteria, a causa dell'offset del TA batteria.

=> PXP005 ck=239C del 28/11/05
- corretta mancata indicazione dalla tensione concatenata dy BYPASS, solo in ver.004
- corretta mancata indicazione sul LCD in caso di blocco da EPO, in parallelo.
- modificata gestione scr_bat_to_off

=> PXP004 ck=9DA6 del 16/11/05

- inserita gestione softstart raddrizzatore con cod. 412746 da 0 a 120sec.
Problema di uso dello stesso codice che in Multistandard
è ritardo di accensione raddrizzatore al ritorno rete.
- corretto mancata riduzione della limitazione di corrente batteria,
limitazione fissa a max.
non funzionava il PWM duty_ibat dalla versione PXP001.

=> PXP003(system MPS ck=AFDD)(sced,251005,scma).hex

- corretta mancata attivazione accensione veloce scr_batteria con cod. 327432
- non visualizza anomalia 30

=> PXP002(system MPS ck=789F)(sced,181009,scma).hex

- seconda vers. installata su 4x100kVA + 2x120kVA + 2x200kVA esafase, Cina
- cambio allocazione variabili custom memorizzate da ram a e2prom
l'aggiornamento da ver.001 a ver.002 richiede reset variabili custom.
- inserito blocco per cortocircuito INV1_SHORT_CIRCUIT
- corretto errato azzeramento autonomia con bat_fail in funzionamento
da batteria spostato anche visualizzazione allarme da bat_fail 1 a > 2
- corretta mancata rivelazione assenza batteria perchè la rivelazione
con la condizione !ibat era bloccata da vbat< VBAT_MIN_MIN
ora corretta con ibat < 2 = < 0.2A.

=> PXP001(system MPS ck=34D4)(sced,120709,scma).hex

First version installed on 2x80kVA and 2x 120kVA Indonesia