# Product Change Notification PCN_MOBILE_2407_033

### PCN Identification Data

| | | | |
|---|---|---|---|
| BUCHER hydraulics | **Bucher Hydraulics AG**<br>**Industriestrasse 15**<br>**CH-6345 Neuheim** | on behalf of | **Bucher Hydraulics AG**<br>**Mobile Drives**<br>**Obere Neustrasse 1**<br>**CH-8590 Romanshorn** |
| Notification No. | **PCN_MOBILE_2407_033** | | |
| Type of Notification | ☒ **PCN (Product Change Notification)**<br>☐ PTN (Product Termination Notification) | | |
| Product Category | **MOBILE PSU 800V** | | |
| Type of Change | ☒ **Hardware**<br>☒ **Software**<br>☐ Process<br>☐ Documentation | | |
| Form / Fit / Function | ☒ **compatible**<br>☐ not compatible | | |
| Supplier Contact | **Bucher Hydraulics AG - Mobile Helpline** | | |

## Table of Content:



### PCN History

| Revision | Version | Date and Time | Changes |
|---|---|---|---|

## 1 Description of Changes

| Change | Decription |
|---|---|

~~NAWR_HW-12784~~

### Mounting instrucion

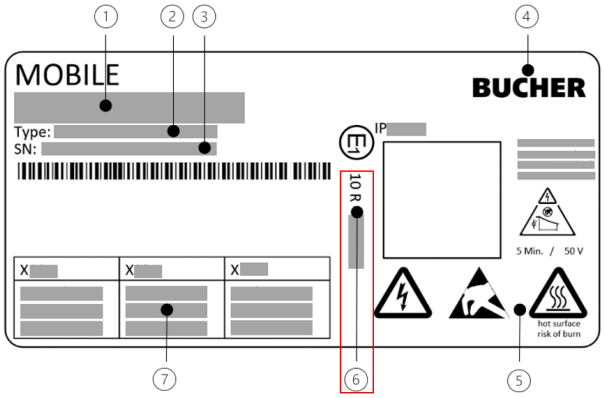
The mounting instructions are no longer provided with the device in hard copy.
A QR code is attached to the cover of the X31 plug. The instructions can be accessed online via this code and are available in different languages.

~~NAWR_HW-12780~~

### Approval identification

This change refers to the fact of a revised standard of UN ECE R10 from Revision 4 / 5 to Revision 6. The MOBILE units have been approved to the new revision 6 and the name plate we will change in field no. 6 for approval identification as follows:

| Previous approval identification | New approval identification |
|---|---|
| 10 R - 05 7105 | 10 R - 06 10299 |
| 10 R - 04 7105 (400V devices) | 10 R - 06 10299 |




~~NAWR_HW-12270~~

### Accessory pack

To optimize processes, the following components are no longer pre-assembled on the device, but are included in an accessory pack with the device:

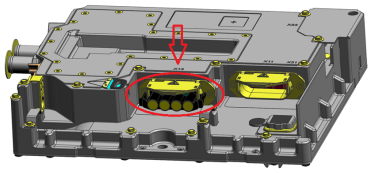
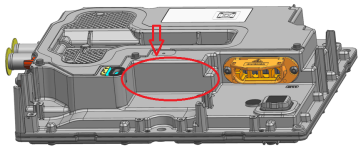
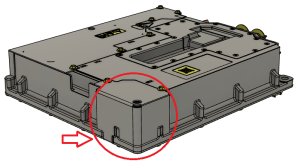
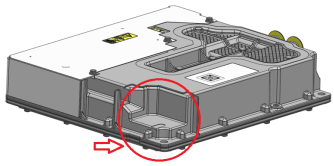
- Cable grommets
- PE screw
- Clamps
- Screws for fastening the clamps

| Change | Decription |
|---|---|

~~NAWR_HW-11844~~

## Housing Design

The design of the PSU is being optimized. See folowing table for the changes.

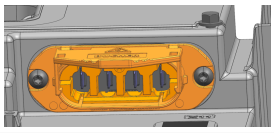
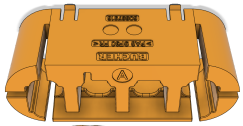
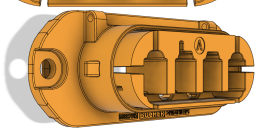
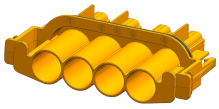
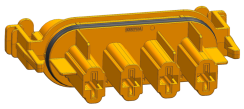
| Description | Previous device | New device |
|---|---|---|
| The dummy plug at the position of X13 is not in use anymore |  |  |
| The cover plate for the connector X33 protection is no longer present |  |  |

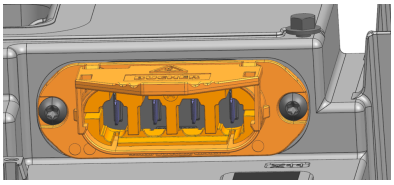
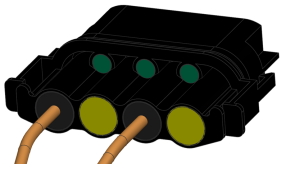
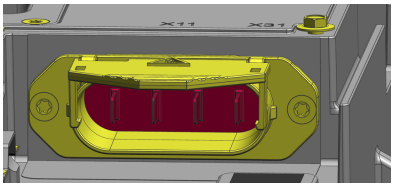
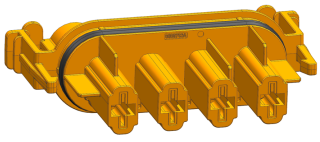
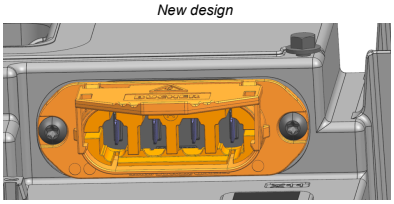
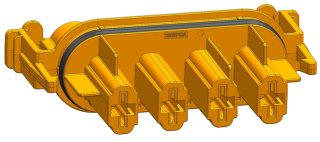
| Change | Decription |
|---|---|
| ~~NAWR_HW-11843~~ | |

## High voltage Connector design

The HV plug is being redesigned with the following points in consideration:

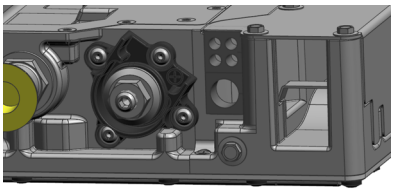
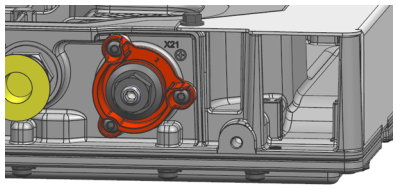
- Ensuring availability for the next MOBILE inverter plattforms
- The electrical contacts remain unchanged
- New finger protection to increase protection against physical contact
- Introduction of coding to prevent incorrect connection
- Ensuring compatibility in the design

| Description | Details of new Connector design |
|---|---|
| Counter plug (with cover cap) mounted on inverter unit |  |
| Counter plug with implemented "BUCHER" logo and finger protection (removable in case for backward compatibility) |   |
| Cable connector with printed indictation to coding |   |

| Case | Connector design | | Compatibility given by |
|---|---|---|---|
| | Device side | Cable side | |
| 1 | *New design*  | *Previous design*  | Removing the finger protection on the device side |
| 2 | *Previous design*  | *New design*  | No action required (fully compatible) |
| 3 | *New design*  | *New design*  | No action required (fully compatible)<br>Coding and protection against physical contact is given |

**Please note:** The corresponding coding to the socket on the device will be described in the hardware manual. In addition to the hardware manual the mounting instruction can be found via QR code on the X31 cover. Details for removing the finger protection and mounting advices are specified in the mounting instruction.

| Change | Decription |
|---|---|
| ~~NAWR_HW-11830~~ | **PSU output**<br><br>The connection area on the PSU output X21 B+ is revised and the plastic part is changed to the color red.<br>See picture below: |

| Previous design | New design |
|---|---|
|  |  |

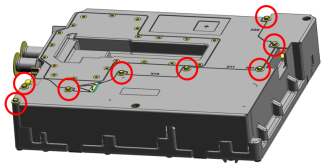
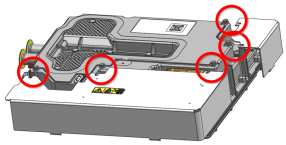
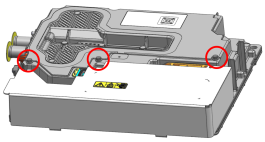
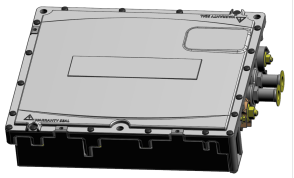
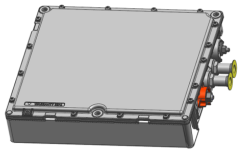
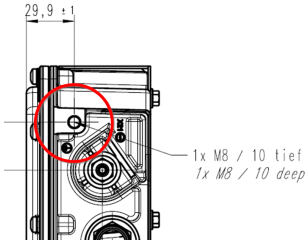
| Change | Decription |
|---|---|

~~NAWR_HW-11829~~

## Aluminum die-cast housing

The enclosure housing case of the inverter is being redeveloped, incorporating the following features:

- Faster and easier assembly of the cover plates
- Additional potential bonding point
- Reduction of the weight

| Description | Previous design | New design |
|---|---|---|
| • Only three screws (instead of six) left to fix the large cover plates.<br>• The screw holes in the sheet metal have been replaced by slots.<br>• The screws do not have to be removed anymore, even with loosened screws the mounting of the plates is possible. |  | DCU PSU<br>  <br>PSU<br>  |
| • Adapted design of the housing cover |  |  |
| • Additional potential bonding point with an M8 thread close to X21 - | - |  |

| | Previous design | New design |
|---|---|---|
| **Weight** | 8.4 kg | 8.1 kg |
| **Water cooling: Fluid volume** | 0.16 l | 0.21 l |
| ***Decrease in pressure in the water cooler (@ 15 l/min, 65 °C, water / ethylene glycol 50/50 %)** | 66 mbar | 69 mbar |

***Please note**: For detailed information of decrease in pressure in the water cooler see MOBILE hardware manual.

Change | Decription

~~NAWR_HW-10494~~

## Extension to CAN FD

The CAN interface is extended for CAN FD. The interface is compatible with the previous version of devices. The termination remains unchanged.

| Public CAN | | Previous device | New device |
|---|---|---|---|
| CAN function | | Classic CAN | Classic CAN, CAN FD incl. Signal Improvement Capability |
| Standard compliance | | SAEJ1939 | SAEJ1939, ISO 11898-2, CIA 601-4 |
| Transmission rate Classic CAN | kBit/s | 125, 250, 500 | 125, 250, 500, 1000 |
| Transmission rate CAN FD | kBit/s | --- | 1000, 2000, 5000, 8000 |
| Capacity* CAN_H - GND / CAN_L - GND | pF | 170 | 60 |
| Capacity* CAN_H - CAN_L | pF | 85 | 40 |
| Common-Mode Choke | uH | 51 | 51 |

* incl. ESD-protection and CAN-transceiver

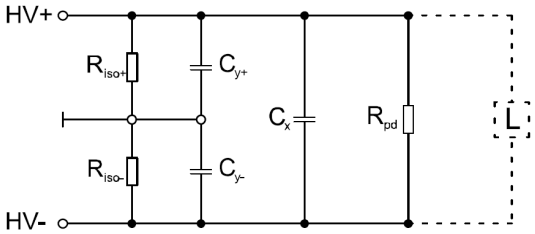
**Please note:** For detailed information about CAN FD extension see MOBILE hardware manual.

~~NAWR_HW-10089~~

## Increase of insulation resistance

The insulation resistance in DC link is increased. Other characteristics remain unchanged.

| | | | Previous device (400V)<br>EMDAG3..., EMDAG4... | Previous device (800V)<br>EMDAG2..., EMDAG3..., EMDAG4... | New device<br>EMDAG2..., EMDAG3..., EMDAG4... |
|---|---|---|---|---|---|
| Insulation resistance | $R_{iso}$ | MΩ | 10 | 20 | >50 |



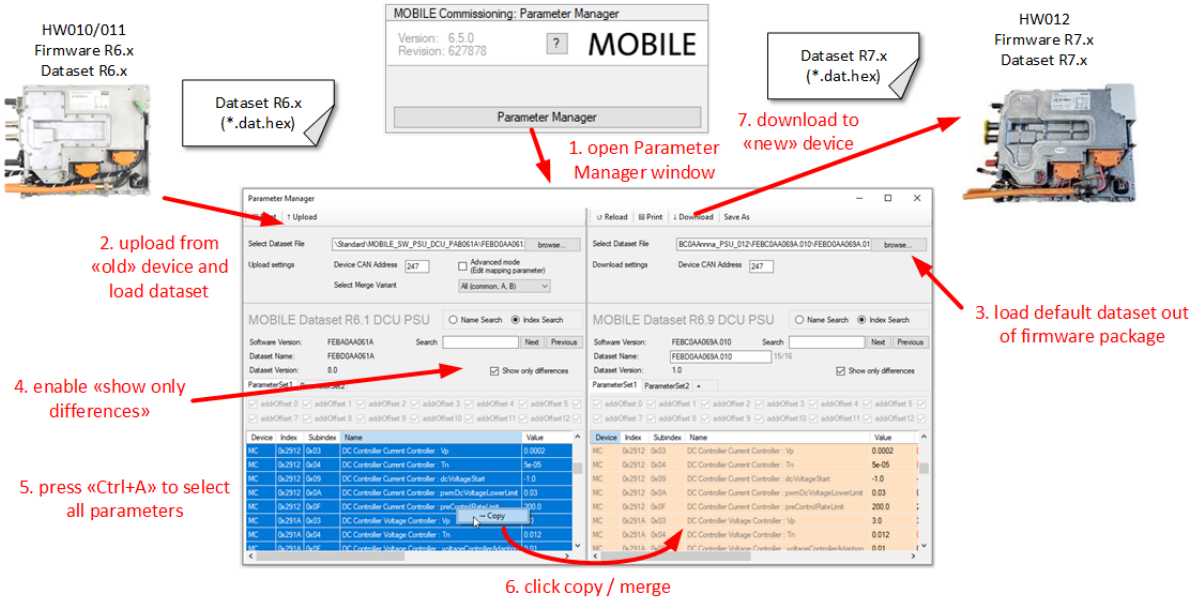

| | |
|---|---|
| HV+, HV- | DC HV electric ciruit |
| $R_{iso+}$, $R_{iso-}$ | Resulting resistance per HV potential |
| $R_{pd}$ | Resistance for passive discharge |
| $C_x$ | Capacity of the X-capacitors |
| $C_{y-}$, $C_{y-}$ | Resulting capacitance of Y-capacitors, parasitic capacitance, capacitance between HV+ or HV- and electrical ground |
| L | Load |
| ⊥ | Electrical ground |

| Change | Decription |
|---|---|

~~NAWR_HW-10031~~

## Dataset transfer

- Processor architecture has changed
- Only new firmware release R7 can run on new device HW-012
- Old firmware and data sets (R5.x, R6.x) are no longer compatible to new device HW-012
- New firmware R7 has extensions, but is functionally compatible (for details see release notes in the firmware package)
- Data sets from R6.x must be migrated to R7.0 using Parameter Manager (see following short description)




The Parameter Manager can be used via software tool MOBILE Engineer and MOBILE Starter. How to use the Parameter Manager for Dataset transfer is described in the Application Note PDF *Dataset Merge*. Please use the LOGintern area to get access to the Application Note (category Power Electronics (Mobile Drives); subcategory Documents).

The new firmware release package R7.0 can also be downloaded in the LOGintern area (subcategory Firmware).

However in case of assistance for dataset migration do not hesitate to contact the support team via support.rh@bucherdrives.com.

~~NAWR_HW-9879~~

## Change to pre-charge

This change describes the effect of pre-charge.

Old device: When the previous device is enabled and the HVDC is switched off, the DC link capacity was charged to 20 ... 23 V by standby currents.

New device: The internal power supply is changed to prevent the DC link from charging to 20...23V and avoid the effect of pre-charge.

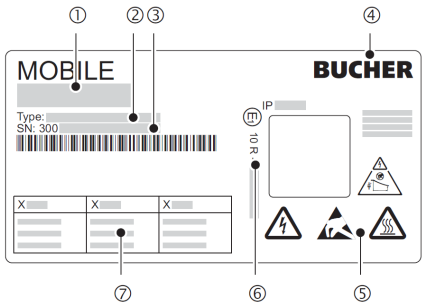
~~NAWR_HW-3318~~

## Change to ambient conditions

This change refers to the ambient conditions and describes the installation height of the devices, so called altitude that has increased according table below:

| **Altitude previous** | | **Altitude new** | |
|---|---|---|---|
| 0 ... 2000 m AMSL | Overvoltage category II | 0 ... 3000 m AMSL | Overvoltage category II for systemvoltage up to 600 VAC |
| 2000 ... 4000 m AMSL | Overvoltage category I | 3000 ... 4000 m AMSL | Overvoltage category I for systemvoltage up to 600 VAC or overvoltage category II for systemvoltage up to 300 VAC |

## 2 Marking of Parts / Traceability of Change

| | |
|---|---|
| **See the following areas on the name plate for identification** |  <br>The changed devices can be identified based on the Type designation. ②<br>(see section: Affected Parts) |

## 3 Timing / Schedule

| | |
|---|---|
| **Start of Delivery (production line)** | 2025-03-17 |
| **Availability of Samples** | 2024-12-16 |
| **PTN of previous product** | n.a. |
| **Customer forecast for MOBILE inverters delivery until last order call** | n.a. |
| **Last order call previous product** | 2025-03-31 |
| **Last delivery previous product** | 2025-06-30 |
| **Last order call repair units previous product** | 2025-09-30 |
| **Product Discontinued** | 2025-12-31 |

## 4 Qualification / Validation

| | |
|---|---|
| **Qualification Report** | Qualification documents can be reviewed on site (Bucher Hydraulics AG) |

## 5 Input to Customer for Risk Assessment Process

| | |
|---|---|
| **Form** | No change of outline dimensions. |
| **Fit** | No change of outline dimensions. |
| **Function** | No changes |
| **EMI** | EMI relevant changes are approved by ECE R10 certification. |
| **Backward Compatibility** | The new units are backward compatible with existing units. |

## 6 Attachments / additional Documentation

| | |
|---|---|
| **Additional Documentation** | New 2D and 3D-pdf files are available on Bucher Hydraulics Website (see LOGintern area https://www.bucherhydraulics.com/en/logintern) |
| **Hardware Manual** | New MOBILE Hardware Manual (see LOGintern area https://www.bucherhydraulics.com/en/logintern) |
| **Mounting Instructions** | New MOBILE Mounting Instructions (see LOGintern area https://www.bucherhydraulics.com/en/logintern) |
| **SW Reference Manual** | New MOBILE Software Manual (see LOGintern area https://www.bucherhydraulics.com/en/logintern) |

## 7 Affected Parts

| # | | Previous device | New device |
|---|---|---|---|
| 1 | **Supplier Part No.**<br>**Supplier Part Name**<br>**Supplier Type designation** | 30010002410<br>MOBILE PSU 2.8 010<br>EMDAG3282000T00010 | 30010002653<br>MOBILE PSU 2.8 012<br>EMDAG3282000T00012 |
| 2 | **Supplier Part No.**<br>**Supplier Part Name**<br>**Supplier Type designation** | 30010002409<br>MOBILE PSU 5.6 010<br>EMDAG3562000C00010 | 30010002536<br>MOBILE PSU 5.6 012<br>EMDAG3562000C00012 |