


PCN_MOBILE_1709_003 / Rev. 01

PCN Identification Data

	Lenze Service GmbH Breslauer Straße 3 D-32699 Extertal	on behalf of	Schmidhauser AG Obere Neustrasse 1 CH-8590 Romanshorn
PCN No.	PCN_MOBILE_1709_003		
Product Category	MOBILE DCU PSU MOBILE DCU		
PCN Revision History	Rev. 01	15.01.2020	Time Schedule adjusted
	Rev. 00	03.05.2019	Initial Revision

Issue Date:	Wed Jan 15 16:14:29 CET 2020
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PCN Team


Supplier Contact	Lenze Schmidhauser - Mobile Helpline cpe-mobile@lenze-schmidhauser.ch
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1 Description of Changes

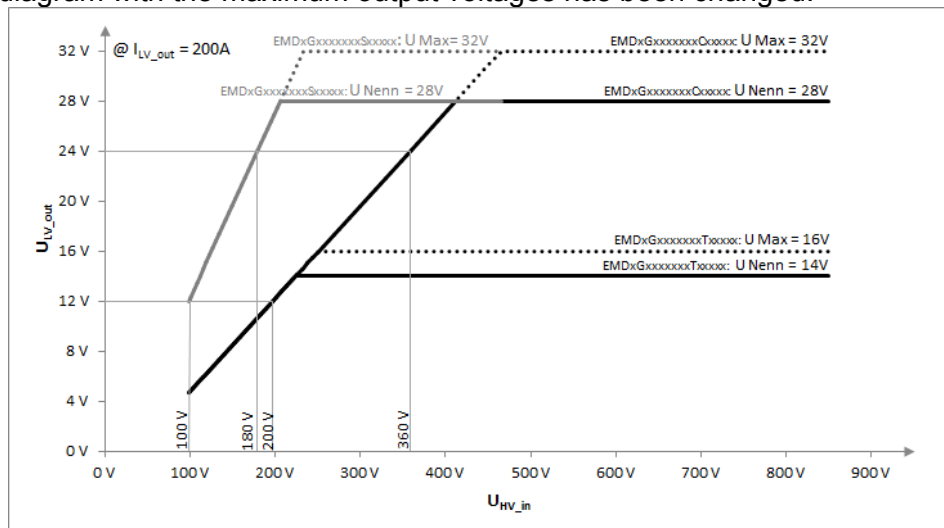
ID Informationen an Kunden

 NAWR_HW-5

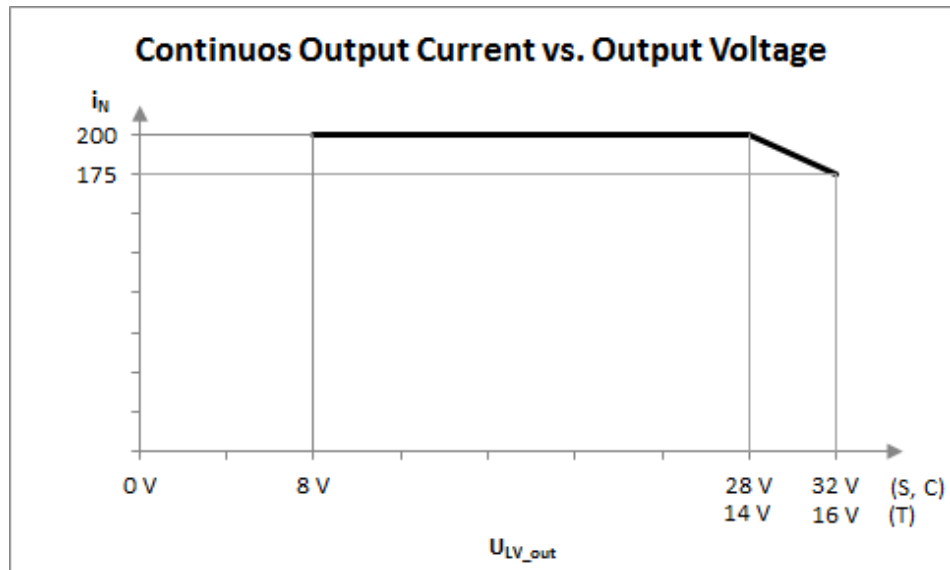
To simplify the usage of the MOBILE, the input power ranges has been enlarged to the following limits:

MOBILE Type	Input Voltage (previous)	Input Voltage (new)	Type Code
DCU	200 .. 850V	100 .. 848V	EMDxGxxxxxxxxUxxxxxxxx
PSU	100 .. 425V	100 .. 424V	EMDxGxxxxxxxxPxxxxxxxx EMDxGxxxxxxxxSxxxxxxxx
PSU	200 .. 850V	100 .. 848V	EMDxGxxxxxxxxTxxxxxxxx EMDxGxxxxxxxxCxxxxxxxx

The diagram with the maximum output voltages has been changed:



New diagram with the current limit due vs. output voltage created:



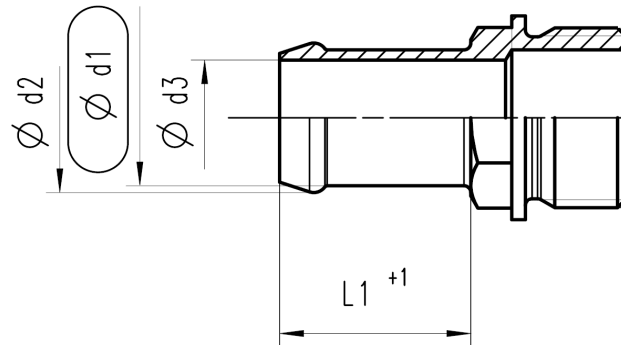
Backward Compatibility:

Subject	Notes
Backward compatibility to earlier version:	No changes required.
What to be done for replacement of earlier version by this new version:	No changes required.
Changes in Communication:	No changes required.
Changes in Parametrization:	No changes required.
Changes in Functionality:	No changes required.

 **NAWR_HW-8**

The water cooling nozzle will be replaced by a backward compatible single bulge nozzle due to the following advantages:

- simplify the connection of hoses
- improve the tightness over life time



Mass	Unit	typ.
Size	[]	DN 20
d1	[mm]	20.0
d2	[mm]	21.0
d3	[mm]	16.3
L1	[mm]	30.0

Backward Compatibility:

Subject	Notes
Backward compatibility to earlier version.	No changes on tubing is required. Backward compatibility is approved for known installations.
What to be done for replacement of earlier version by this new version?	Visual inspection of damages on tubing and if damages are visible replace it. Check tightness of tube connection after installation.



Wake Over CAN ISO 11898-5 is realized by modification of the CAN interface including:

- No galvanic isolation between CAN_GND and KL31 anymore
- Common mode voltage immunity $\pm 40V$ according ISO 16750 by CAN tranceiver
- Reduction of the reset time to allow earlier CAN communication after CAN and KL15 wakeup
- $\pm 80V$ fault protection on CANL, CANH
- UBAT (KL30) Power Off supply current $<100\mu A$ (@ 12V), $<200\mu A$ (@24V)

Backward Compatibility:

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Subject	Notes
Backward compatibility to earlier version:	No changes required. Wakeup over CAN is disabled by default parameter set or not implemented for customer specific firmware. Backward compatibility is approved for KL15 turn off.
What to be done for replacement of earlier version by this new version:	No modifications on wiring is required. Activation of Wakeup over CAN can be done by parameter modifications (if included in firmware).
Changes in Communication:	No changes as long as Wakeup over CAN is not used.
Changes in Parametrization:	No changes as long as Wakeup over CAN is not used. Wakeup over CAN is disabled by default parameter set. To activate the Wakeup over CAN, use the appropriate MOBILE WoC Application Note
Changes in Functionality:	No changes as long as Wakeup over CAN is not used.



NAWR_HW-15

The maximum precharge voltage has been increased for all MOBILE DCU devices.

max. precharge voltage (previous)	max. precharge voltage (new)
300V	850V



NAWR_HW-16

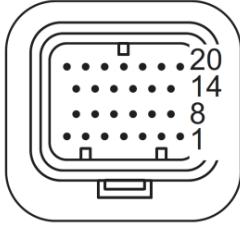
To prevent short circuit between InterLock1 (Pin7) and InterLock2 (Pin6), the pin assignment of Interlock2 (Pin6) on X31 has been changed to Pin 4.

**Hinweis!**

Geänderte Belegung des Steckers X31 (Steueranschlüsse)

Note!


Changed assignment of connector X31 (control connections)

X31		Previous pinning EMDxGxxxxxxxxxx000 EMDxGxxxxxxxxxx000	Present pinning EMDxGxxxxxxxxxx010 EMDxGxxxxxxxxxx010
	1	CAN_H_TERM_PUBLIC	CAN_H_TERM_PUBLIC
	2	CAN_H_PUBLIC	CAN_H_PUBLIC
	3	CAN_L_PUBLIC	CAN_L_PUBLIC
	4	CAN_H_TERM_PRIVATE	InterLock2
	5	CAN_L_PRIVATE	CAN_L_PRIVATE
	6	InterLock2	CAN_H_PRIVATE
	7	InterLock1	InterLock1
	8	KL15	KL15
	9	CAN_GND	CAN_H_PUBLIC
	10	CAN_H_PRIVATE	CAN_L_PUBLIC
	11	CAN_GND	CAN_L_TERM_PUBLIC
	12	ID_PIN1	ID_PIN1
	13	ID_PIN3	ID_PIN3
	14	FLX_IN4	FLX_IN4
	15	FLX_IN3	FLX_IN3
	16	FLX_IN2	FLX_IN2
	17	FLX_IN1	FLX_IN1
	18	ID_PIN2	ID_PIN2
	19	ID_PIN4	ID_PIN4
	20	KL31	KL31
	21	KL30	KL30
	22	KL30	KL30
	23	FLX_OUT4	FLX_OUT4
	24	FLX_OUT3	FLX_OUT3
	25	FLX_OUT2	FLX_OUT2
	26	FLX_OUT1	FLX_OUT1

Backward Compatibility:

Subject	Notes
Backward compatibility to earlier version:	The changes pinning is not compatible with the previous version.
What to be done for replacement of earlier version by this new version:	You have to check the wiring and pinning on X31 connector according to the table above.
Changes in Communication:	The internal Private CAN termination has been removed. You have to terminate the Private CAN externally.

Changes in Parametrization:	No change of parametrization needed.
Changes in Functionality:	Changes of functionality are listed in the SW Release Notes R6.


~~NAWR_HW-1314~~

The InterLock-Interface of all MOBILE DCU devices changed to de same design as in the MOBILE PSU devices.

Improvements:


- Reduction of the voltage drop from Interlock_H to Interlock_L
- Reverse blocking of the circuit eliminated


~~NAWR_HW-1324~~

The range of the automatic adoptions to different resolver types, especially transfer ratio is increased. The accuracy of the position signal is better than before. This change is only valid for the MOBILE DCU devices.


The oscillator output voltage is automatically adjusted

Characteristics	Previous	New
Oscillator output voltage	9 Vpp	12 Vpp
Hall sensor DC-Output Voltage	-	5 VDC



~~NAWR_HW-1325~~

The range of the automatic adoptions to different resolver types, especially transfer ratio is increased. The accuracy of the position signal is better than before. This change is only valid for the MOBILE DCU devices.

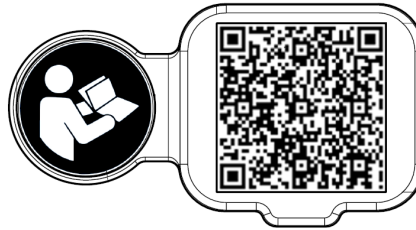
Characteristics	Previous	New
Input voltage range	6 Vpp	4.5Vpp
Input sensitivity	100%	178%
Automatic adaption to diff. resolver types	yes	yes


~~NAWR_HW-1326~~

- improved DC Link measurement (increase of common mode range above DC+ and below DC-)
- Increase of measuring impedance up to 10 MOhm for PSU and DCU


~~NAWR_HW-3079~~

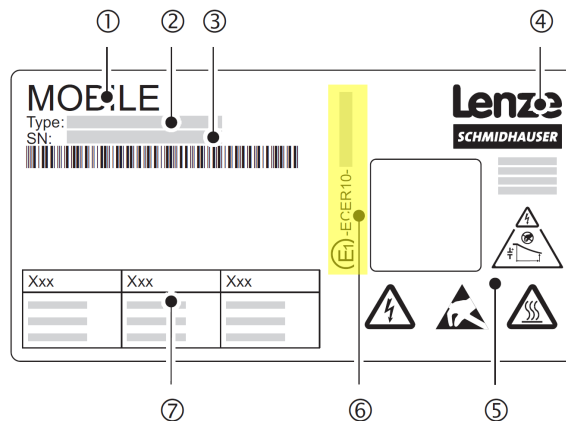
A new protective cap on connector X31, reminds the user to read the manual due to changed pinning.



NAWR_HW-3109

The reason for this change is a revised ECE R10 standard from Rev. 4 to Rev. 5. The MOBILE units have been approved to the new revision and the name plate we will change as follows:

Previous approval identification	New approval identification
ECE R10 - 047105	10 R - 05 7105



Backward Compatibility:

Subject	Notes
Backward compatibility to earlier version.	Measurement limits and test setups for approval tests are identical to the previous version.
What to be done for replacement of earlier version by this new version?	Nothing, because the Measurement limits and test setups for approval tests are identical to the previous version.

NAWR_HW-7084

Für die Anschlussstutzen des Wasserkühlers wird eine weiterer Lieferant aufgenommen, welcher diese Teile in Stahl und einer Zink-Nickel-Legierung beschichtet anliefert.

Diese Massnahme erfolgt zur Sicherstellung der Verfügbarkeit als frei disponierbare Second Source. Die mechanischen Abmessungen bleiben

unverändert.

For the water cooler connection pieces, a further supplier is added who delivers these parts coated in steel and a zinc-nickel alloy.

This measure is taken to ensure availability as a freely disposable second source.

The mechanical dimensions remain unchanged.



NAWR_HW-7987

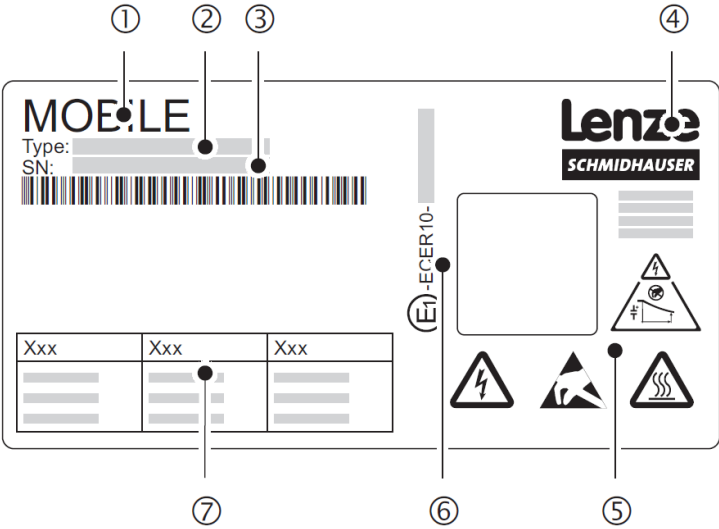
Es erfolgt eine Umstellung im Fertigungsablauf um die Anzahl der Gerätevarianten fertigen zu können. Dazu werden die Programmierschritte im Ablauf verschoben ohne Einfluss auf die Endgeräte. Damit sind keine Änderungen am verbauten Material oder an den Löt- oder Montageschritten verbunden.

There is a change in the production process to be able to manufacture the number of device variants. The programming steps are shifted in the sequence without influencing the end products. This does not involve any changes to the material used or to the soldering or assembly steps.

13 items found 

2 Marking of Parts / Traceability of Change

See the following Areas on the Name Plate for Identification



The changed devices can be identified based on the Type designation. ②
(see section 7: Affected Parts)

3 Timing / Schedule

Start of Delivery	01.03.2019
Availability of Samples	available, see chapter 7
PDN of previous product (M10)	20.12.2019
Customer forecast for MOBILE inverters delivery until last order call	30.04.2020
Last order call previous product (M11)	30.11.2020 Note: no orders can be accepted after this date.
Last order call repair units previous product (M13)	31.05.2021 Note: no repair orders can be accepted after this date.
Product Discontinued (M14)	30.11.2021 Note: after this date defective previous devices will be replaced by new devices.

4 Qualification / Validation

Qualification Report	Qualification documents can be reviewed on site (Lenze Schmidhauser)
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5 Input to Customer for Risk Assessment Process

Form	No change of outline dimensions.
Fit	No change of outline dimensions. Check the wiring and pinning on X31 connector.
Function	see MOBILE Software R6 Release Notes
EMI	no change of EMI relevant components or layout
Backward Compatibility	The new units are not backward compatible with existing units due to changed pinning on X31 connector.

6 Attachments / additional Documentation

Additional Documentation	New 2D and 3D-pdf files are available on request (see supplier contact above)
User Manual	MOBILE Hardware Manual 2.0 - available with Qualification Samples
Assembly Manual	MOBILE Assembly Manual (HW V010) - available with Qualification Samples
SW Reference Manual	MOBILE Software Manual 2.0 - available with Qualification Samples

7 Affected Parts

#		Previous device	New device
1	Customer Part No.	n.a.	n.a.
	Supplier Part Name	MOBILE DCU 60 / 60	MOBILE DCU 60 / 60
	Supplier Part No.	13538332	13548508
	Supplier Type designation	EMDAG2603603U00000	EMDAG2603603U00010

2	Customer Part No. Supplier Part Name Supplier Part No. Supplier Type designation	n.a. MOBILE DCU 30 / 30 13538333 EMDAG2303303U00000	n.a. MOBILE DCU 30 / 30 13548509 EMDAG2303303U00010
3	Customer Part No. Supplier Part Name Supplier Part No. Supplier Type designation	n.a. MOBILE DCU 30 / 15 13538334 EMDAG2303153U00000	n.a. MOBILE DCU 30 / 15 13548510 EMDAG2303153U00010
4	Customer Part No. Supplier Part Name Supplier Part No. Supplier Type designation	n.a. MOBILE DCU 15 / 7.5 13538335 EMDAG2153752U00000	n.a. MOBILE DCU 15 / 7.5 13548511 EMDAG2153752U00010
5	Customer Part No. Supplier Part Name Supplier Part No. Supplier Type designation	n.a. MOBILE DCU PSU 60 / 5.6 13538336 EMDAG4562603C00000	n.a. MOBILE DCU PSU 60 / 5.6 13548512 EMDAG4562603C00010
6	Customer Part No. Supplier Part Name Supplier Part No. Supplier Type designation	n.a. MOBILE DCU PSU 60 / 2.8 13538337 EMDAG4282603T00000	n.a. MOBILE DCU PSU 60 / 2.8 13548513 EMDAG4282603T00010
7	Customer Part No. Supplier Part Name Supplier Part No. Supplier Type designation	n.a. MOBILE DCU PSU 30 / 5.6 13538339 EMDAG4562303C00000	n.a. MOBILE DCU PSU 30 / 5.6 13548514 EMDAG4562303C00010
8	Customer Part No. Supplier Part Name Supplier Part No. Supplier Type designation	n.a. MOBILE DCU PSU 30 / 2.8 13538341 EMDAG4282303T00000	n.a. MOBILE DCU PSU 30 / 2.8 13548515 EMDAG4282303T00010
9	Customer Part No. Supplier Part Name Supplier Part No. Supplier Type designation	n.a. MOBILE DCU PSU 15 / 5.6 13538343 EMDAG4562153C00000	n.a. MOBILE DCU PSU 15 / 5.6 13548516 EMDAG4562153C00010
10	Customer Part No. Supplier Part Name Supplier Part No.	n.a. MOBILE DCU PSU 15 / 2.8 13538345	n.a. MOBILE DCU PSU 15 / 2.8 13548517

	Supplier Type designation	EMDAG4282153T00000	EMDAG4282153T00010
11	Customer Part No.	n.a.	n.a.
	Supplier Part Name	MOBILE PSU 5.6	MOBILE PSU 5.6
	Supplier Part No.	13538347	13548506
	Supplier Type designation	EMDAG3562000C00000	EMDAG3562000C00010
12	Customer Part No.	n.a.	n.a.
	Supplier Part Name	MOBILE PSU 2.8	MOBILE PSU 2.8
	Supplier Part No.	13538349	13548507
	Supplier Type designation	EMDAG3282000T00000	EMDAG3282000T00010