

Product End-of-Life Information

This document is intended for treatment and recycling facilities and provides information on components, materials, handling, and dismantling of the product when it reaches the end of its life, to facilitate correct and environmentally sound treatment.

Grundfos **CIU 290 LPWAN M12** must be disposed of in accordance with local regulations, using authorized WEEE collectors and designated collection points. If these are not available, please contact the nearest Grundfos company or service workshop.

Safety risks

- Safety risk related to materials used:

There is no risk for people during the disassembly process posed by the materials used for the product.

- Safety risk related to handling the product:

There is no risk for people during the handling process, provided the device is fully disconnected from power before work begins to avoid electric-shock hazards as indicated in the product safety information. Handling should also respect regulatory limitations, as the unit contains RF circuitry that must not be modified without authorization in accordance with FCC/CE requirements. Care must be taken to prevent electrostatic discharge (ESD) damage to the LTE-M radio and antenna components during handling, as noted in publicly available component safety guidance. Opening the enclosure may void warranty based on standard regulatory compliance statements published for similar Grundfos communication modules

Disassembly of the product

The **CIU 290 LPWAN M12** Module product consist of a Top Cover (black), the blind-mated assembly of the base PCB with the CIM Module PCB and below the PCBs is the Bottom Cover. There are two LED guide which connect from the CIM module to the two windows on the top cover.

During dismantling and reassembly of the product, care should be observed to avoid bending or breakage of the LED pipes.

CIU **290 LPWAN M12** modules can all be considered electronic scrap and should be handled as such. The only tool needed is:

- Torx screwdriver (T6 or T8 depending on model)
- Plastic opening tool/ spudger
- ESD wrist strap & ESD mat
- Tweezers (for antenna / connector handling)

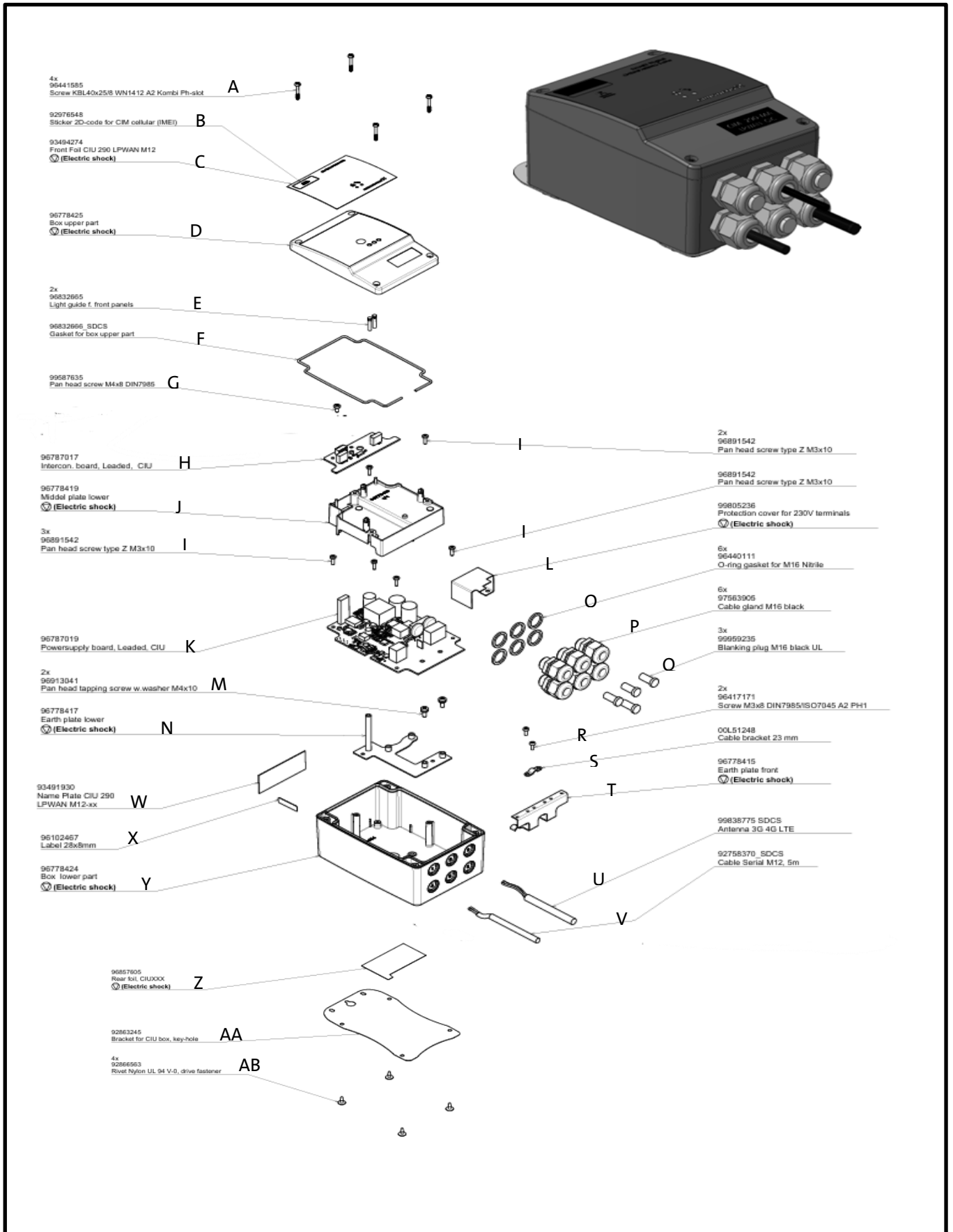
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Follow the following instructions to disassemble the **CIU 290 LPWAN M12**:

- Remove the cable gland
- Open the enclosure: Place the unit face up, Identify the small notches along the enclosure seam, insert a plastic opening tool at one corner, gently pry along the sides - avoid bending the plastic to prevent cracking, The top cover will release from the bottom housing.
- Disconnect power supply and RS-485 wiring from the CIU/CIM 290 module from PCBA terminal block.
- Remove the module from the host product's CIM GENIbus slot.
- Remove the external LTE-M antenna from the SMA-type connector.
- Remove the PCB assembly: Remove the visible screws securing the PCB to the bottom housing, Lift the PCB by holding the edges -avoid pulling on the antenna area, The PCB will slide out with the LED light-pipe and connectors attached.
- Remove the CIU power supply PCBA.
- Inspect the LED's and connectors: LED1 (Cellular), LED2 (Internal communication), LED3 (RS-485)- these are attached through transparent light guides→ Slide out the LED light-guide from the housing front, Inspect for contamination, misalignment or damage

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Exploded view:



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| Designation | Component Name | Material | Special disassembly considerations |
|-------------|--|--|--|
| A | Screw KBL40x25/8 WN1412 A2 Kombi Ph-slot | A2 Stainless steel | Standard screw removal |
| B | Sticker 2D-code for CIM cellular (IMEI) | Polyester label film | Peel off; adhesive residue possible |
| C | Front Foil CIU 290 LPWAN M12 | Polyester (PET) overlay | Adhesive-bonded; avoid tearing |
| D | Box upper part © (Electric shock) | Polycarbonate (PC) or ABS/PC blend | Contains live parts; open only when de-energized |
| E | Light guide f. front panels | Optical-grade Polycarbonate (PC) | Fragile; remove carefully to avoid cracking |
| F | Gasket for box upper part | Nitrile Butadiene Rubber (NBR) | Remove gently to avoid deformation |
| G | Pan head screw M4x8 DIN7985 | A2 Stainless steel | Standard removal |
| H | Middel Plate upper (Electric shock) | Polyamide (PA6/PA66) | Covers electrical parts; de-energize first |
| I | Pan head screw type Z M3x10 | Nylon 66 (PA66) screw | Avoid overtightening; breakable |
| J | Intercon. board, Leaded, CIU | FR-4 PCB with copper traces | ESD-sensitive; handle by edges |
| K | Power supply board, Leaded, CIU | FR-4 PCB / electronic components | Contains high-voltage components; wait for capacitor discharge |
| L | Protection cover for 230V terminals (Electric shock) | Stainless steel | Remove only when isolated from mains |
| M | Pan head tapping screw w.washer M4x1 | A2 Stainless steel | Standard removal |
| N | Earth plate lower (Electric shock) | Stainless steel | Connected to grounding; ensure discharge |
| O | O-ring gasket for M16 Nitrile | Nitrile Butadiene Rubber (NBR) | Avoid stretching; reinstall correctly |
| P | Cable gland M16 black | Polyamide (PA6) with stainless steel locknut | Unscrew; may require pliers |
| Q | Blanking plug M16 black UL | Polyamide (PA6) | Twist-fit; remove without force |
| R | Screw M3x8 DIN7985/ISO7045 A2 PH1 | A2 Stainless steel | Standard screw removal |
| S | Cable bracket 23 mm | Polyamide (PA6) | Clip-on; pry gently |
| T | Earth plate front © (Electric shock) | Stainless steel | Remove only when de-energized |
| U | Antenna 3G 4G LTE | Stainless Steel housing + coax cable | Disconnect coax connector carefully |
| V | Cable Serial M12, 5m | PVC jacket + Copper conductors | None |
| W | Name Plate CIU 290 LPWAN M12-xx | Polyester label / Stainless steel backing | Adhesive; peel-off if needed |
| X | Label 28x8mm | Polyester label film | Peel -off |
| Y | Box lower part (Electric shock) | Polycarbonate (PC) / ABS-PC blend | Access to electrical section; open only when power-free |
| Z | Rear foil, CIUXXX (Electric shock) | Polyester (PET) film | Adhesive-bonded |
| AA | Bracket for CIU box, key-hole | Optical-grade poly carbonate (PC) | Structural component; non-metallic |

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|------------------------------|---------------------------------------|----------------------------------|--|
| AB | Revet Nylon UL 94 V-0, drive fastener | Nylon (PA66) UL94-V0 flame-rated | Press-fit; remove with cutter If needed |
| Additional materials: | | | |

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