

## Inductive powering

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## 1 To avoid danger or damage

Read the imc MTP-NT User Manual carefully to avoid danger or damage.

<https://www.imc-tm.com/download-center/product-downloads/mtp-nt/manuals>

These commissioning instructions are intended for electrical engineering specialists!

## 2 Step-by-Step instructions

1. Preparation:
  - a. Set the TVS-AC1 jumper on the Power-S module (see Fig. 1 in chapter 4.1)
  - b. Connect the Power-S module with the Secondary Coil (Power Coil).
  - c. Connect the measuring module chain to the Power-S module.
  - d. Connect the multimeter (see 4.1) or the CONFIG-BOX-IND-PWR (see 4.2) with the Power-S module.
  - e. Connect the Power Head to the Power Generator and place it at a large distance (> 20 cm) from the Power Coil - but not on metal.
  - f. Connect the power supply to the Power Generator.
2. Switch on the Power Generator.  
The red STATUS LED on the Power Generator must stop flashing after approx. 60 seconds.
3. While slowly moving the Power Head closer to the secondary coil, observe the voltage display (see 4.1).  
  
As soon as the voltage has risen to approx. 10 V, maintain this distance for the time being.
4. Observe the voltage display while you now switch through all combinations of bridges (jumpers) SW1 and SW2 (see 4.1) or all positions of the rotary switch (4.2).  
  
The setting with the highest voltage is retained.  
Do not forget to permanently secure this setting at the end of this procedure using solder jumpers.
5. The distance of the Power Head must now be adjusted until the measured voltage is between 25 V and 35 V.  
  
This is the optimum mounting location for the Power Head.

## 3 Solving problems

Troubleshooting if an optimum result could not be achieved under point 2.

### 3.1 Solution for problems with the Power Head distance

The solution operations listed under 3.1 may only be carried out by a qualified electrician! Disconnect the Power Generator from the power supply!

Contact imc technical support and get assistance when opening the Power Generator.

Tel.: +49 30 467090-26, E-Mail: [hotline@imc-tm.de](mailto:hotline@imc-tm.de)

#### 3.1.1 The distance is too big

- Set the internal hex coding switch to the next lower position.
- Close the housing of the Power Generator completely using the original components.
- Repeat the Step-by-Step instructions (step 2)

#### 3.1.2 The distance is too small

- Set the internal hex coding switch to the next higher position.
- Close the housing of the Power Generator completely using the original components.
- Repeat the Step-by-Step instructions (step 2)
- Avoid overloading the Power Generator and Power Head at all costs!

### 3.2 Solution if the secondary power is not sufficient

(3.1.2 did not bring sufficient improvement)

#### 3.2.1 Balancing capacity is already set to minimum

- Reduce the number of windings.
- Repeat the Step-by-Step instructions (step 2)

#### 3.2.2 Balancing capacity is already set to maximum

- Increase number of windings
- Repeat the Step-by-Step instructions (step 2)

## 4 Adjustment of the balancing capacity

### 4.1 Adjust the balancing capacity with a multimeter

A multimeter can be used to calibrate the inductive power supply. Bridges (SW1, SW2) can be set for capacitive balancing.

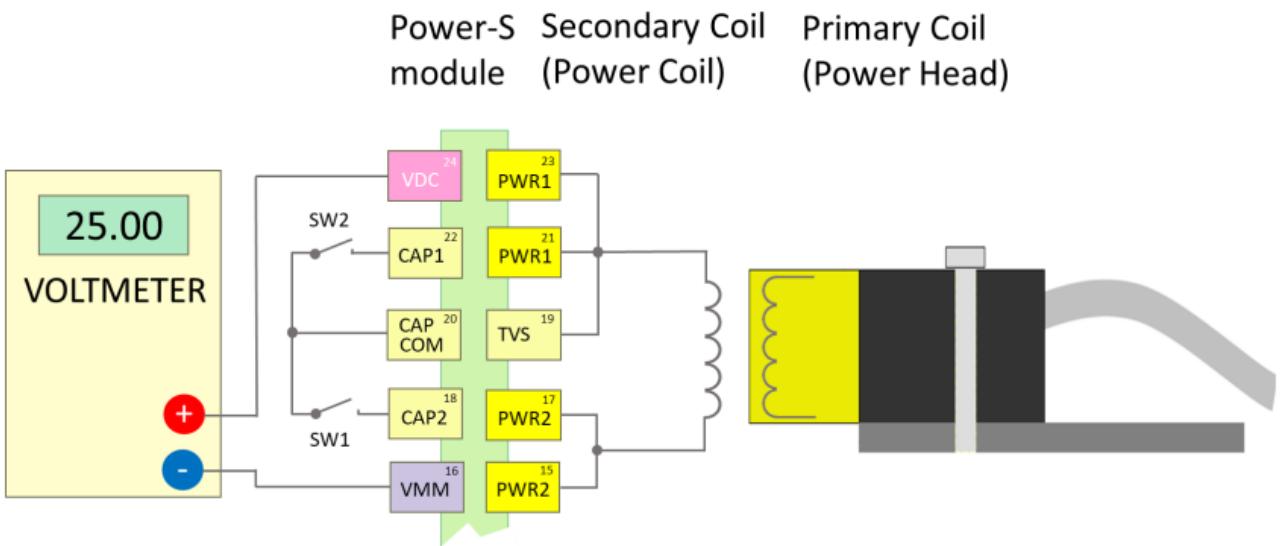


Fig.1 extract of the pin assignment of the: POWER-S module  
imc ordering code: MTP-NT-POWER-S (article no.: 13220069)

The CONFIG-BOX-IND-PWR (see chapter 4.2) offers more comfort for the balancing.

## 4.2 Adjust the balancing capacity with CONFIG-BOX-IND-PWR

With its own voltage display, the CONFIG-BOX-IND-PWR replaces the multimeter (see 4.1) and the bridges SW1 and SW2.



Fig.2 CONFIG-BOX-IND-PWR, article no.: 13220400

If an adjustment of the balancing capacitance is required, the necessary bridges must be made permanently (e.g. soldering), see the following assignment:

Switch position	bridge / jumper
0 (no capacitor)	no jumper
CAP1	Pin22 with Pin20
CAP2	Pin20 with Pin18
CAP1+2	Pin20 with Pin18 and Pin22 with Pin20

## 5 Basics

- Only use the Primary Coil (Power Head) and the Power Generator in combination supplied in order to achieve the best possible efficiency.
- The following parameters are very important when setting up a new test setup:
  1. Number of windings of the Secondary Coil (Power Coil, see *imc MTP-NT User Manual*), changes the resonance frequency in the secondary resonance circuit.
  2. Adjusting the balancing capacity on the Power-S module (see chap. 4), changes the resonance frequency in the secondary resonance circuit.
  3. Distance between the Primary Coil (Power Head) and the Secondary Coil (Power Coil, see chapter 2), influences the transmitted power.
  4. Setting the internal hex coding switch in the Power Generator influences the transmitted power.