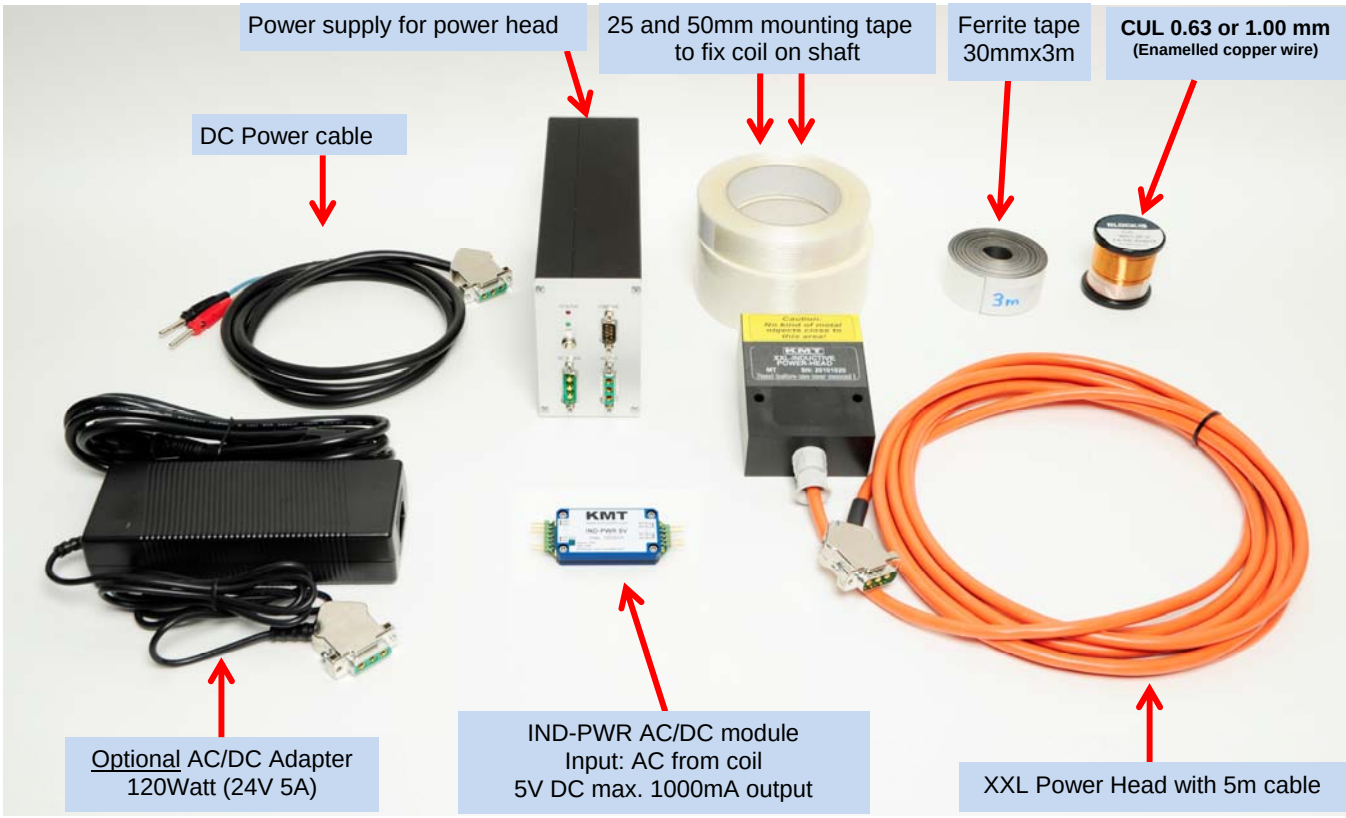
MT32
IND-PWR L/XL/XXL/XXXL

User Manual

Inductive power supply set with XXL power head



Picture shows standard Inductive Power Supply for diameter up to 400mm

INSTRUCTIONS FOR QUALIFIED PERSONNEL ONLY!

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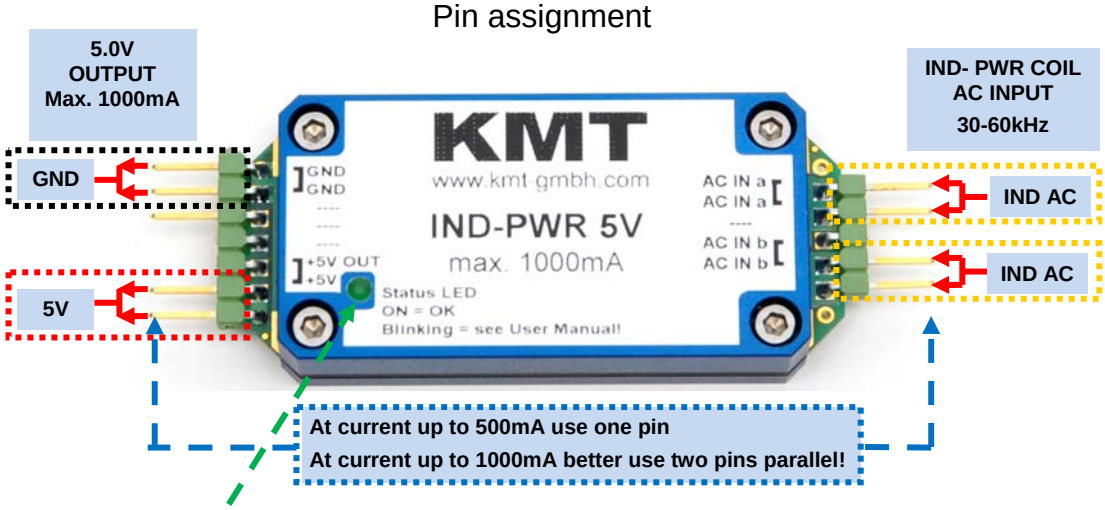
Safety notes for inductive powering

- The device should only applied by instructed personnel.
- The power head emits strong magnetic radiation at 30-60 kHz to a distance of 300 mm. Therefore persons with cardiac pacemakers should not work with this device!
- Magnetic data storage media should be kept in a distance of at least 3m from the power head to avoid data loss. The same is valid for electromagnetic sensitive parts, devices and systems.
- Do not place the power head in the switched-on state on metallic objects, because this results in eddy currents which could overload the device and strong heat up small objects. Also the probe could be destroyed!
- No metallic objects, other than the disc-type coil, should be located in the air gap of the power head. The same applies to metallic parts within a radius of up to 50 mm in all directions.
- Do not use damaged or faulty cables!
- Never touch in the area between shaft and inductive head, the rotating shaft itself or rotor electronic contacts during operation!
- This is a “Class A” system suitable for operation in a laboratory or industrial environment. The system can cause electromagnetic interferences when used in residential areas or environments. In this case the operator is responsible for establishing protective procedures.

MT32-IND-PWR 5V - AC/DC Module for inductive power

MT32-IND-PWR 5V
AC/DC Module for inductive power
Input: 30-60kHz, 10-50V AC
Can also power with DC 13-24V (Input via AC IN a and AC IN b)
Output: 5 VDC
Current: up to 1000mA
Weight: 35 gram
Vibration: 5g
Shock: 3000g

Pin assignment



At current up to 500mA use one pin
At current up to 1000mA better use two pins parallel!

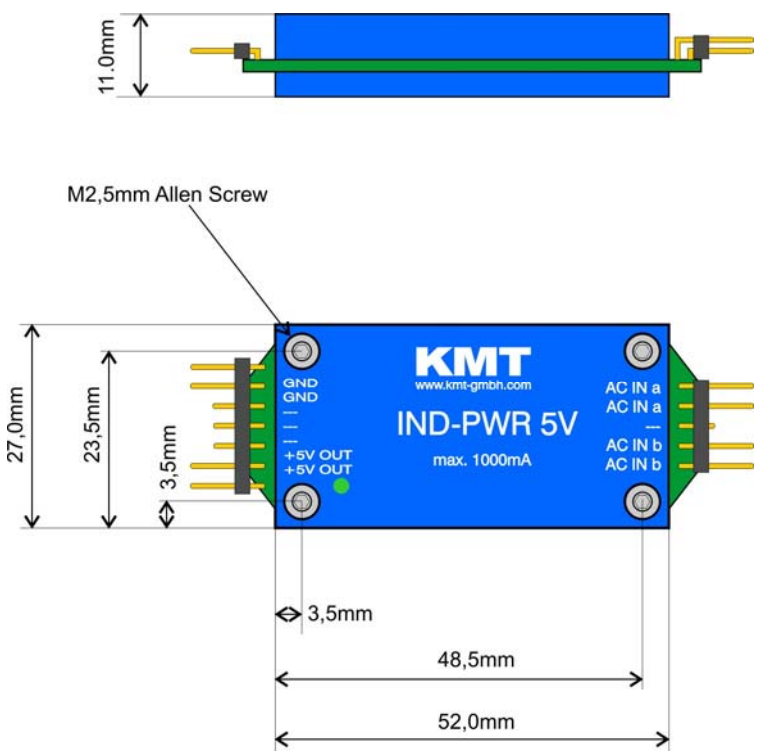
Status LED

LED ON = right windings and good distance between head and coil

LED very low blinking = too less windings of IND-Coil or too large distance between head and coil!

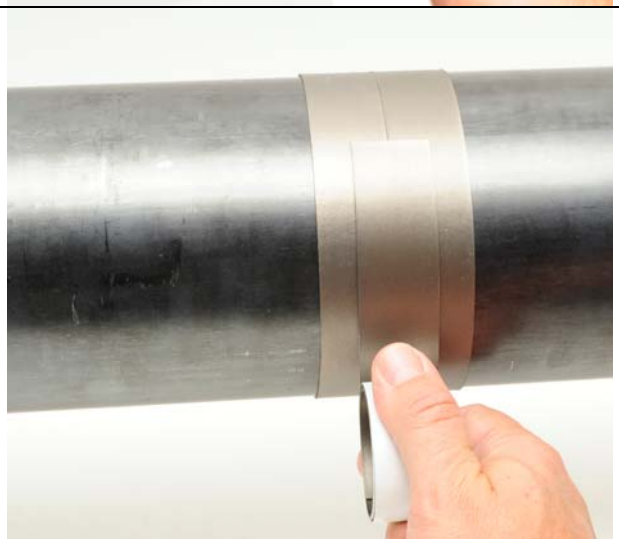
LED fast blinking = too much windings (OVER POWER at IND-Coil) reduce windings or module go hot and switch OFF

MT32-IND-PWR housing - dimensions

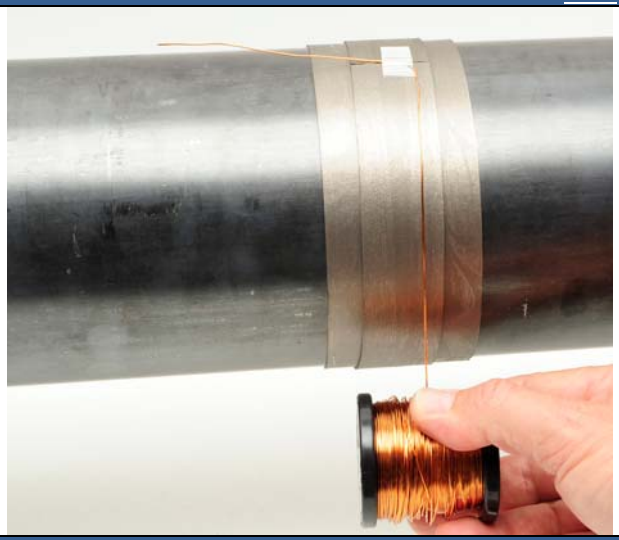


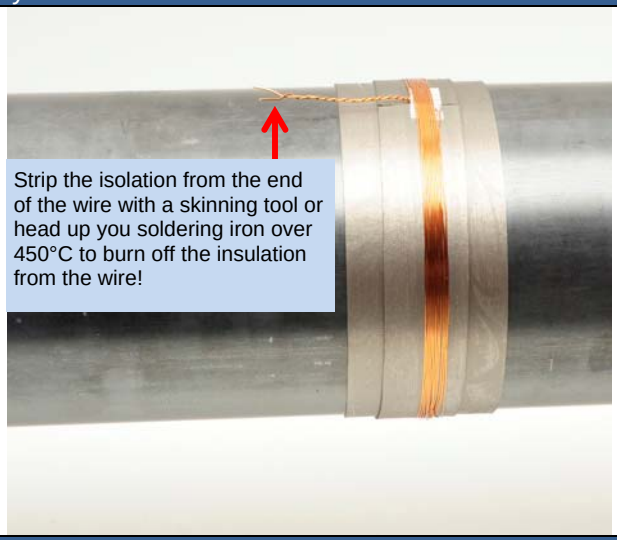
Weight about 35 grams

Inductive power supply
Installation of coil for inductive powering on shaft



Attach for electromagnetic isolation “Ferrite Tape” 2x parallel and
1x in the middle over two layer around the shaft





Make power coil with 3-18 windings for 1000-20mm diameter (see diagram) and twisted the end of wire.
Use 0.63…1.00 mm (1.00mm for diameter of 200-1000mm) CUL wire (Enameled copper wire)

Solder the end of the pins on the AC IN of the IND-PWR module and isolate all solder points with shrink tubing
Fix all with 5 lagers mounting tape!

Note: "The inductive load of the MT32- IND-PWR and the capacitor in the Power Head must be in resonance to get the optimal transmission. The inductive load of the shaft depends of diameters, material and number of windings!

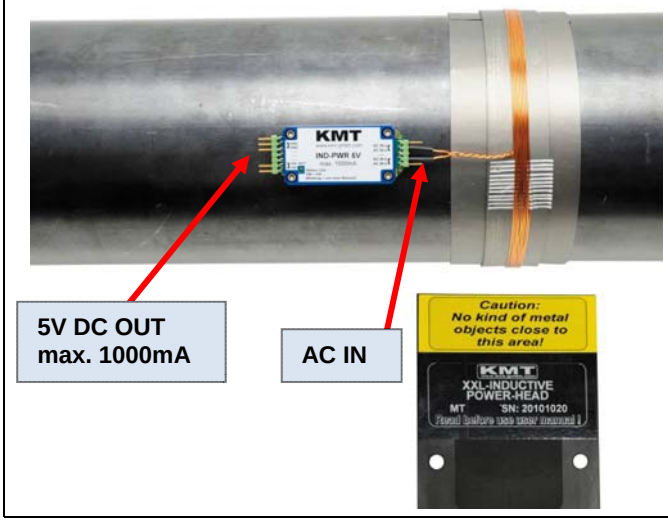
Control the output voltage and move the power-head in the max distance to the coil.
The output voltage must be 5V

See also status LED

LED ON = right windings and good distance between head and coil

LED very low blinking = too less windings of IND-Coil or too large distance between head and coil!

LED fast blinking = too much windings (OVER POWER at IND-Coil) reduce windings or module go hot and switch OFF



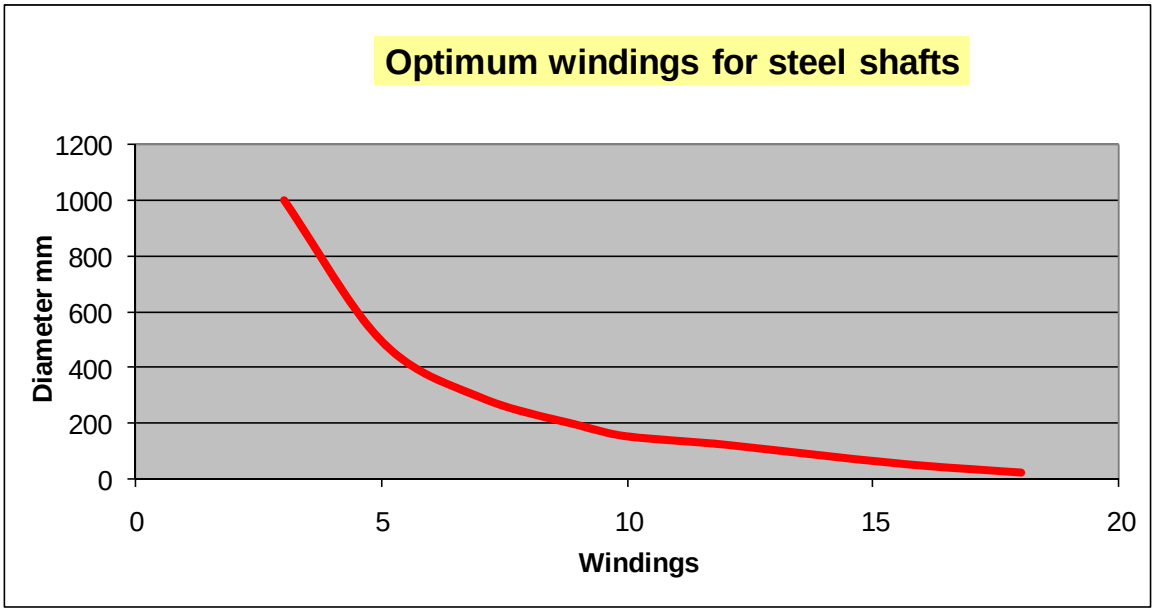
The pins "Coil" are the AC power input from the coil. On the pins "+5V and "GND" you get a stabilized output voltage of 5V DC.
The max. load current on the DC output is max. 1000mA.

The IND-PWR converter will use instead battery pack!
Never use any battery together with the IndPwr!

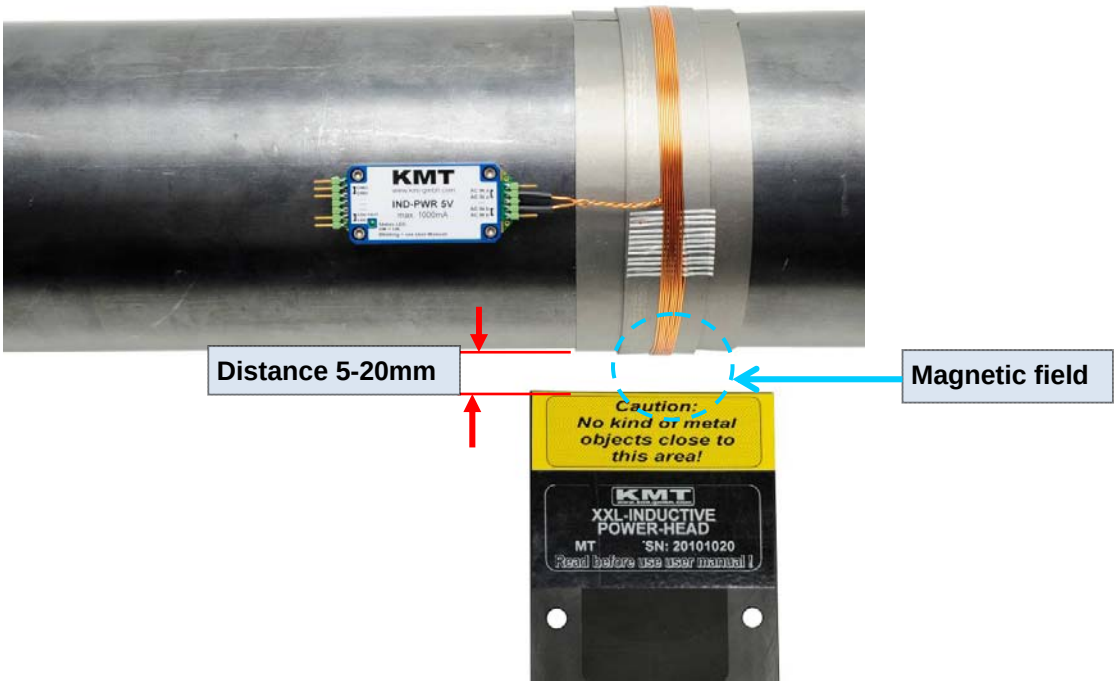
You should mount the power head at a fixed location that it's as free as possible from strong vibration influences.

The center of the coil should be in the same horizontal position as the center of the power head. The distance is optimal in the range between 5 and 10mm. (depends of shaft and current consumption)

Find the correct amount of windings of inductive power coil



Diameter (mm)	Windings (+/-1)
1000	3
490	5
290	7
190	9
150	10
120	12
80	14
45	16
20	18

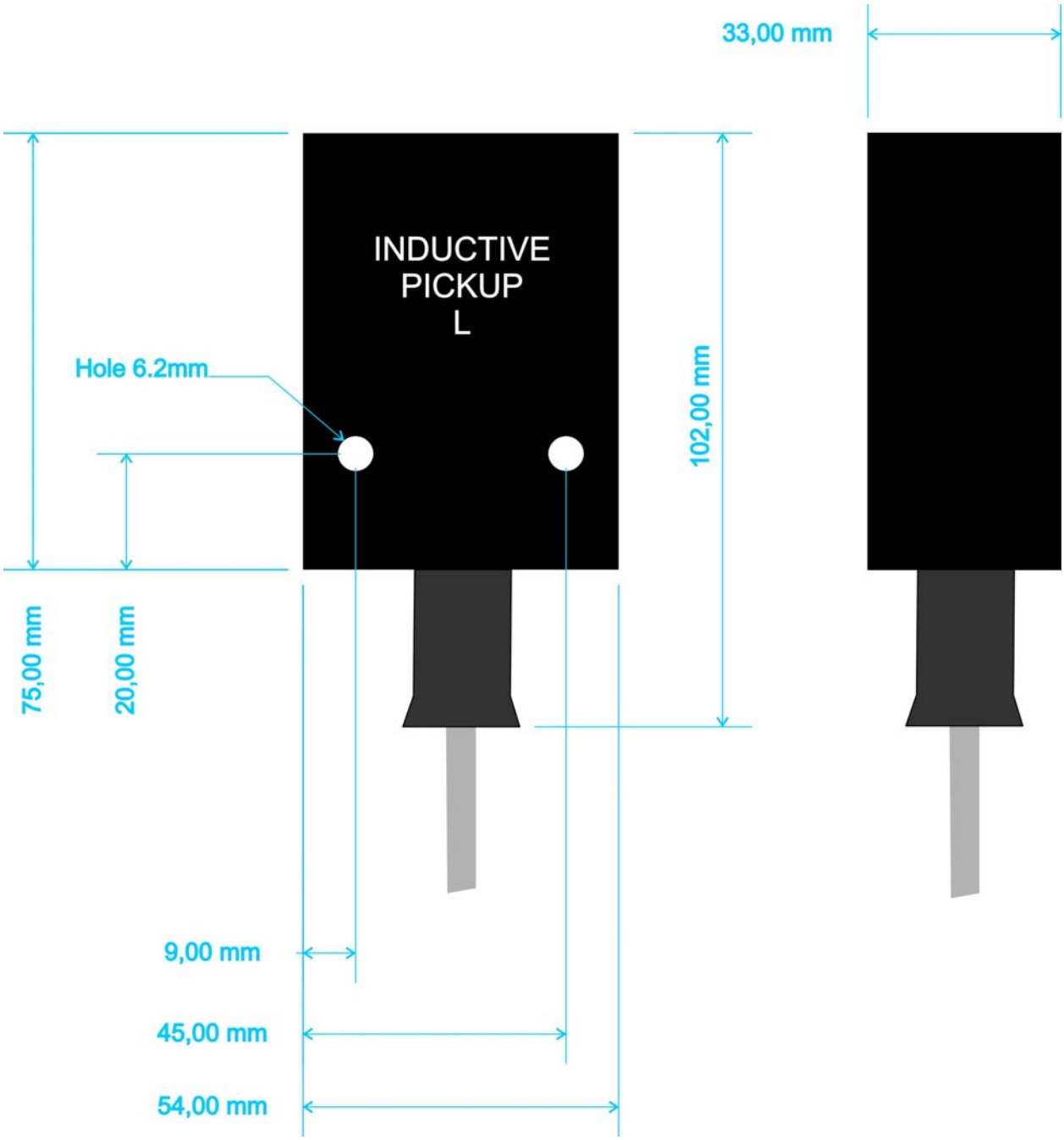


Distance dependent of current consumption e.g.:
1000mA at 5-10mm, 500mA at 10-15mm and 250mA at 15-20mm

IND-PWR-HEAD-L
for diameters up to 150-200mm

Caution
Cable must unrolled for use, otherwise it will warm up!

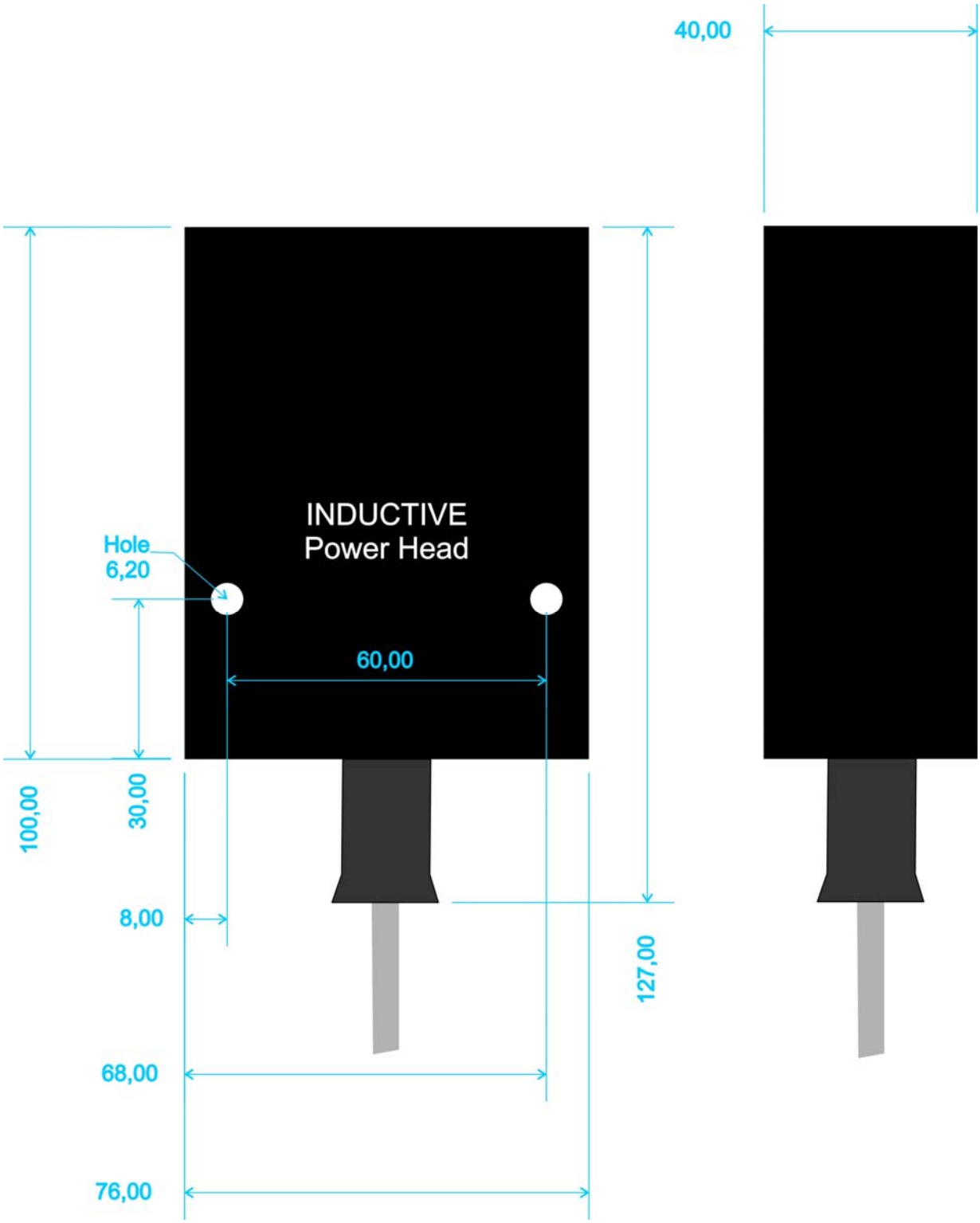
Dimensions of IND-PWR-HEAD L



IND-PWR-HEAD XL and XXL
for diameters up to 300mm with XL and 500mm with XXL
(XL and XXL have the same housing and size but inside is a larger coil at XXL version)

Caution
Cable must unrolled for use, otherwise it will warm up!

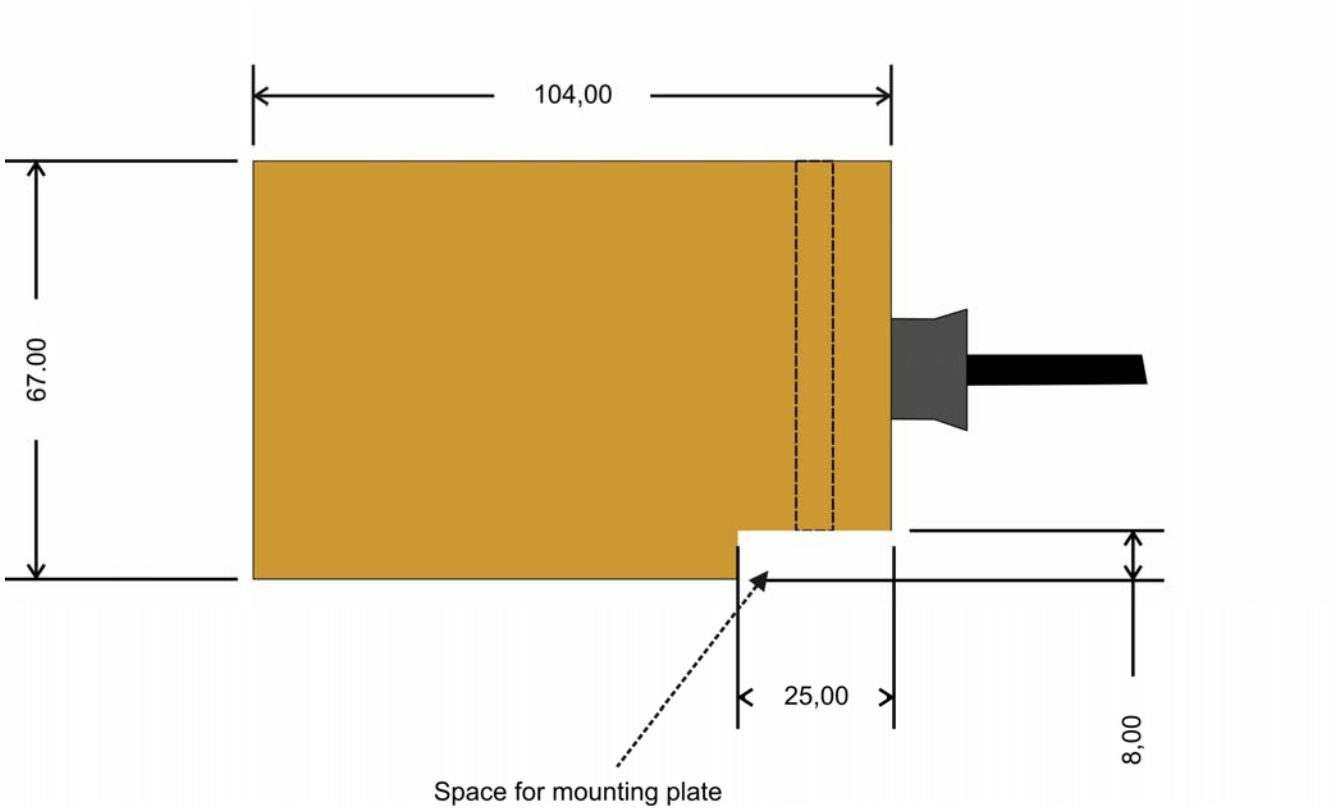
Dimensions of IND-PWR-HEAD XL and XXL

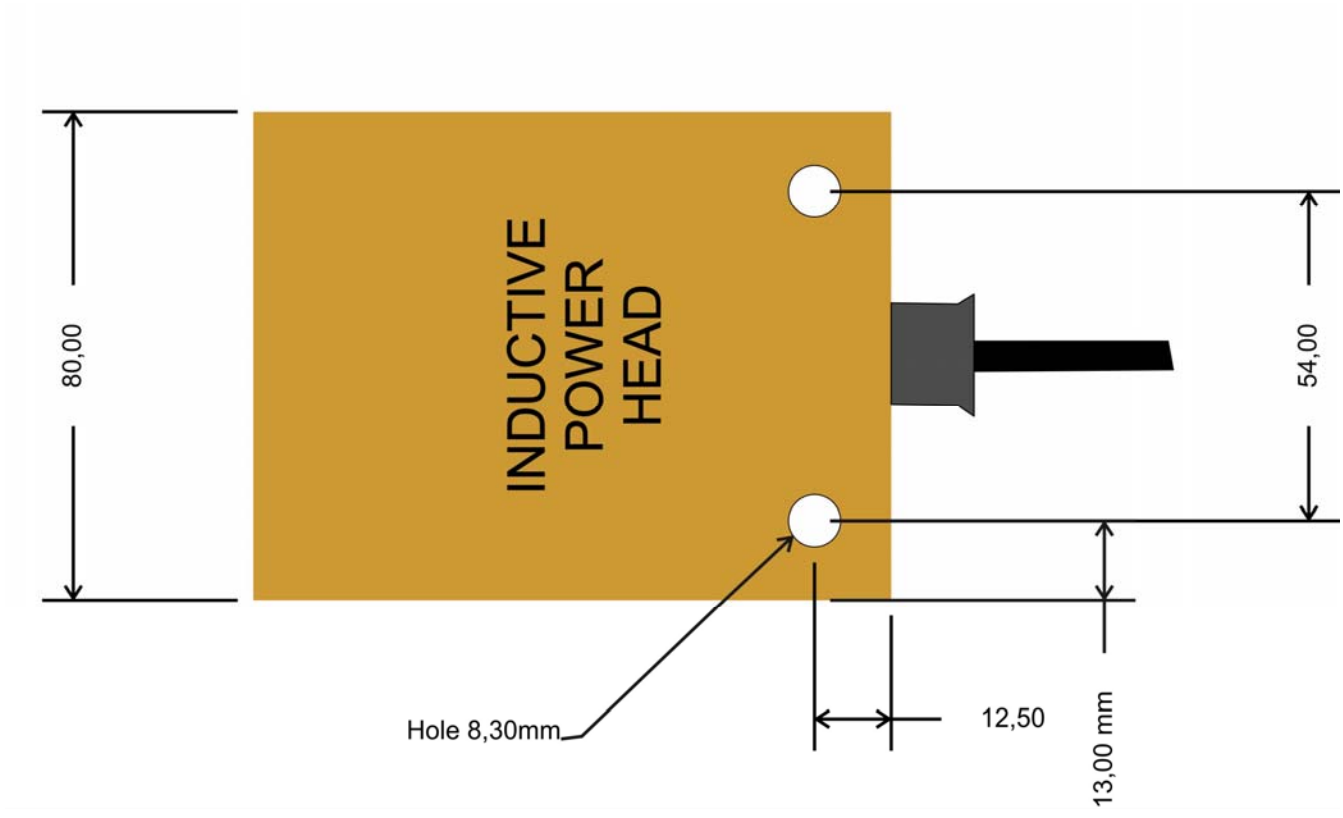


IND-PWR-HEAD XXXL
for diameters up to 1000mm

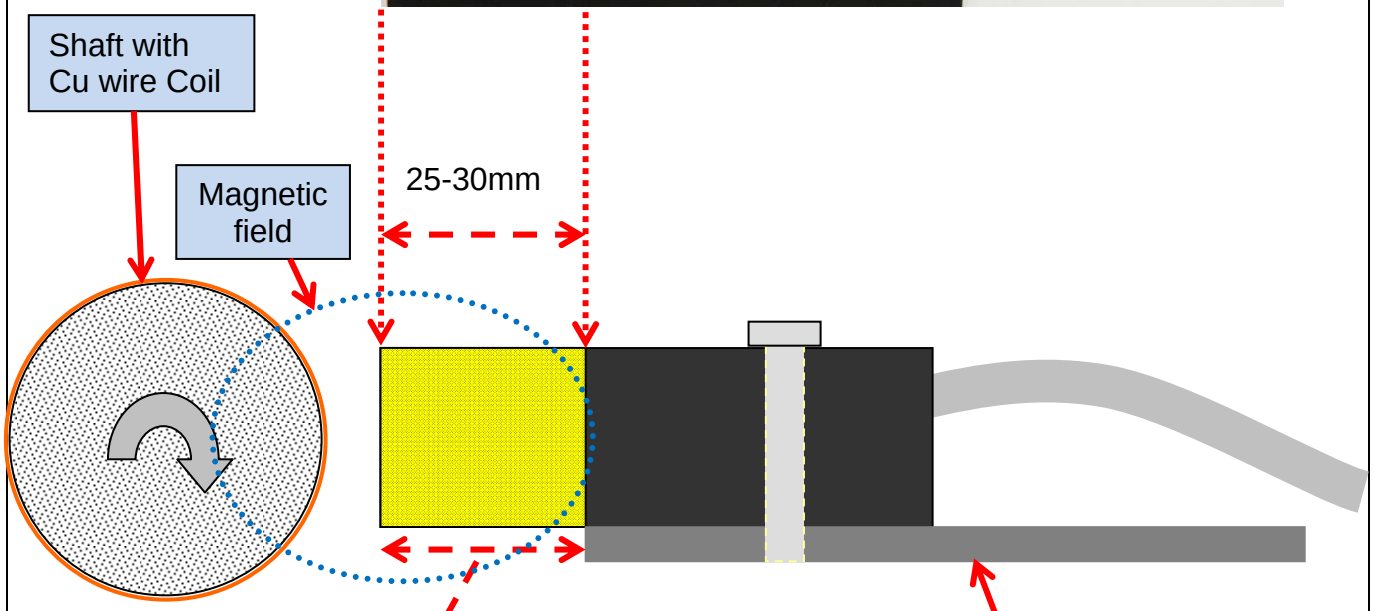
Caution
Cable must unrolled for use, otherwise it will warm up!

Dimensions of IND-PWR-HEAD XXXL



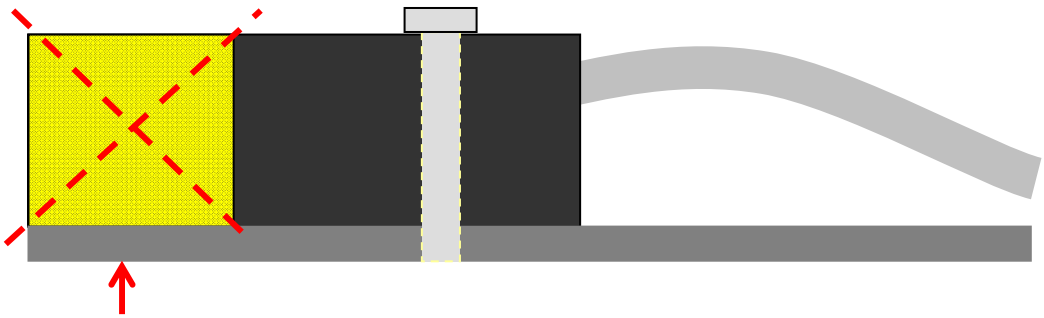


MT32-IND-PWR
Following must be considered at the mounting of the inductive power head



Don’t use for mounting any kind metal in this area (25-30mm)! Otherwise magnetic energy will flow in the metal and decrease the distance between power head and coil (on shaft)!

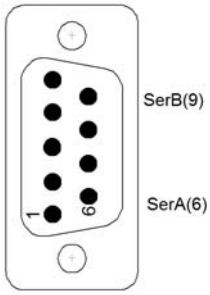
Example of mounting



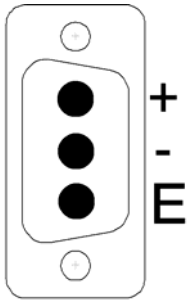
Wrong!!! Mounting (only if metal) plate cover the active area of

IND-PWR for XL and XXL version
Pin connection

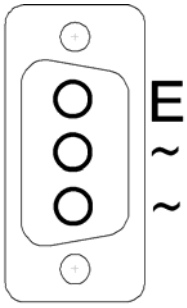
RS 485



CONTROL - Not used!



DC 10-30V
typical 24V
(up to 100 WATT*



AC 25-35kHz output
power head
*** deepens of power head)**

E= have no function

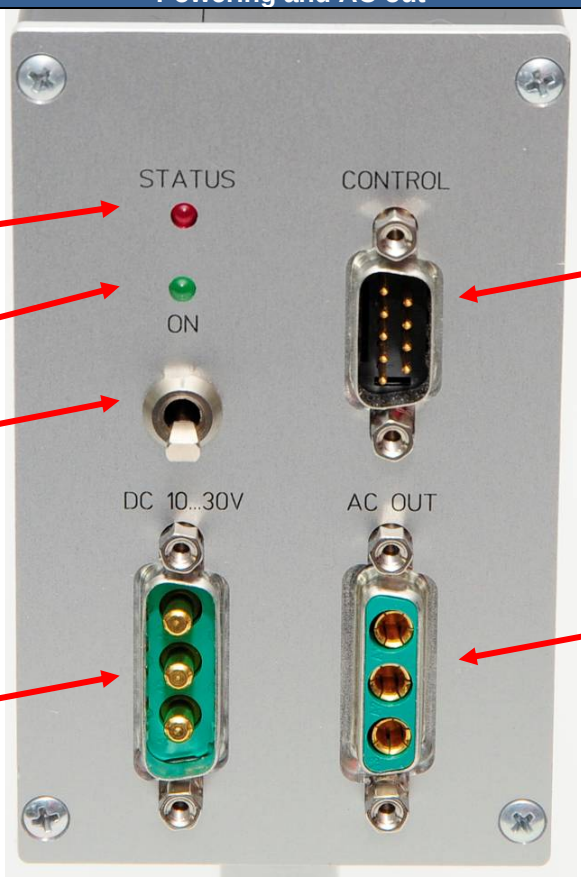
Powering and AC out

LED flashing = auto adjustment
LED ON = finish
ON= Inductive resonance freq. of power head reached!
Can take up to 20sec.!

Power control LED

Power Switch

Power INPUT
DC 10-30V
typical 24V
(up to 100WATT*)



Control out of function

AC 25-35kHz output for power head