

Switching Mode Power Supply for Magnetron use

SNT-MW-1200

SNT-MW-1200**Power-Supply for 1200 W magnetron
Magnetron-Type: 1.2 kW**

TECHNICAL DATA

**Attention: -- Microwaves and High-Voltage are dangerous --**

Very important to avoid any injury :

Use INTERLOCK -Switch(es) to prevent any microwave output, if microwave-system is not complete closed.
Responsible for the correct interruption of the microwave energy production is the constructor of the complete microwave-system.

1 General Description

SNT-MW-1200 is a small switching magnetron power supply

- ... to connect to a **1.2 kW Magnetron** (2M137)
- ... to produce **High-Ripple** MicroWave HF-Power (if 50 Hz main-frequency: High-Ripple with 100 Hz)
- ... needs **AC 230V~** and aux-voltage **DC 24V=**
- ... cooled by air (fan)

SNT-MW-1200 power supply properties:

- controlled over 10 signal-lines like INTERLOCK, MW ON/OFF, POWER 0 % .. 100 % (0 V... 10 V) etc.
- produce in combination with a **2M137 magnetron (1.2 kW)** a Micro-Wave-Power up to 1200 Watt.
- The output power for a 50 Hz surge corresponds with a 100 Hz modulated half wave.

SNT-MW-1200 power supply observation and security properties

- recognizes too small or too big Output-Voltage
- recognizes too small or too big Output-Current
- observes Temperature
- detects Short- and Open-Circuit on Output
- observes Internal-Voltage of-Power-Supply

2 Technical Data

Input voltage.....	200 – 265 Vac, 47 – 63 Hz, 1 phase
Input current.....	< 9 A rms @ 230 Vac @ full load
Harmonic distortion.....	Meets EN 61000-3-2 for class A
Power factor.....	cos ϕ > 0,98 @ load from 5% to 100% of full load
Transient overvoltage.....	Meets EN 61000-4-4 for class B
EMI filtering.....	Meets EN 55022 for class B
Input protection.....	AC line fuse: F 10 A, 250 Vac, 5x20 mm, IEC 60127-2-2
Output power.....	1800 W
Output current.....	400 mA output current regulation
Output current ripple.....	100 %
Output polarity.....	– 4500 V negative in respect to ground potential
Suggested Magnetron Type.....	Waveguide R26 / WR340 2M137 (1.2 kW)
Preheating Time.....	Magnetron heating not included
Auxiliary Power.....	24 Vdc, 0.5 A Supply for logic and fan
Output current signal.....	0V...10V ($R_i = 1 \text{ KOhm}$) for load current 0%...100%
Output voltage signal.....	optional

CONTROL – Signals

INTERLOCK.....	OPENED / CLOSED	(0V / 24V)
MW.....	OFF / ON	(0V / 5V....24V)
I_variable	0 % - 100 % (POWER)	(0V10V)
	I_variable ...	If needed extreme fast: 1 st step: 1.0 V
	equates to.. HF-POWER	2 nd step: 10.0 V

ERROR – Signals

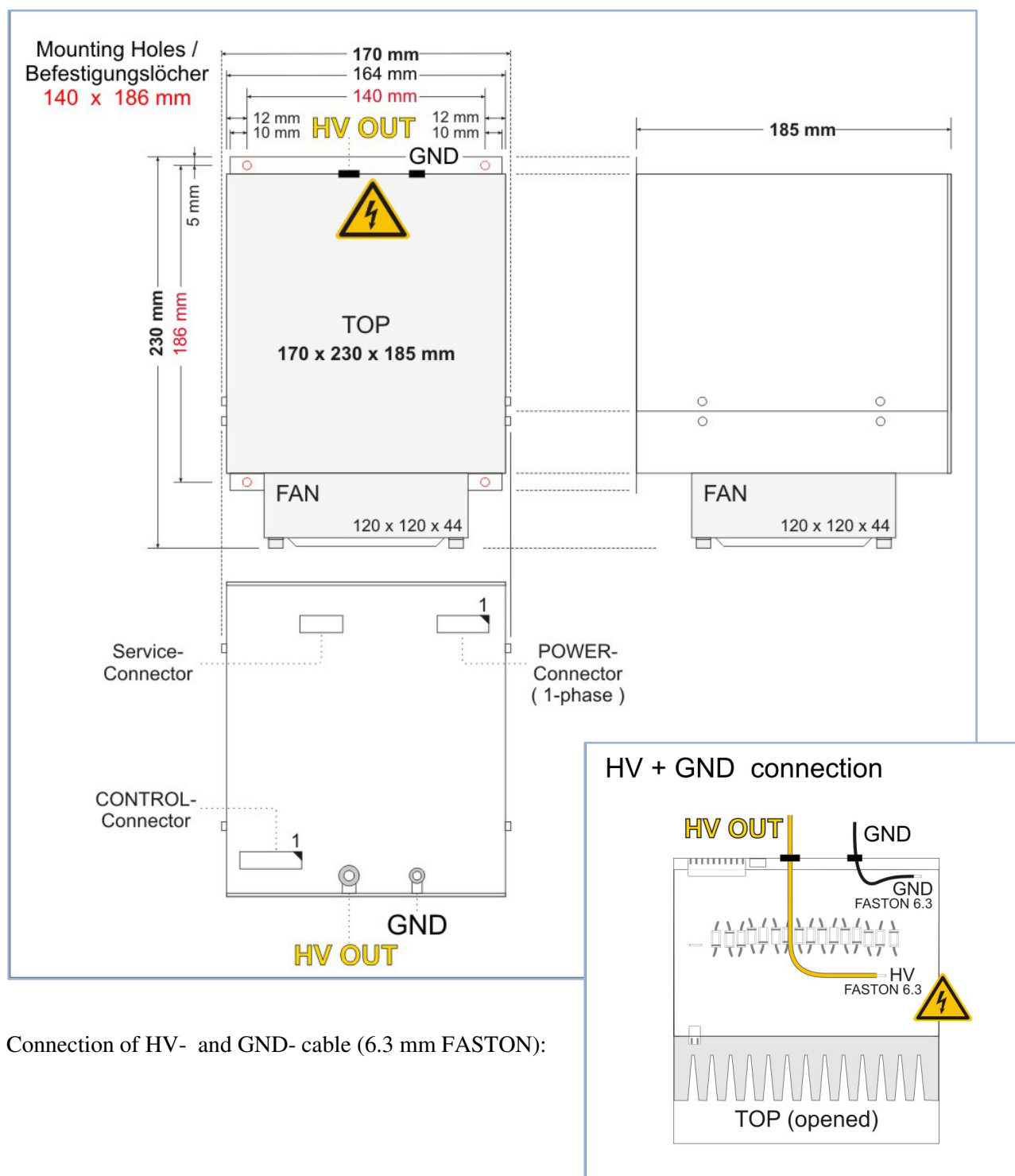
ERROR.....	NO ERROR / ERROR	(0V / 5V....24V)
ERROR-LED.....	ERROR	→ blinking fast, then ERROR-Number times slow
	NO ERROR	→ blinking equally slow

3 Environment Conditions

USE INDOOR USE only
Temperature 10° C to 40° C

4 Mechanical Data

Dimensions L x W x H (Length x Width x Height) 170 x **230** x 185 mm
Mounting Holes 140 x 186 mm
Weight approx. 2,8 kg



Connection of HV- and GND- cable (6.3 mm FASTON):

5 Electrical Connections

Needed Cable-Connectors (included in delivery of new device):

1. CONTROL Connector RIA connector: **AKL 169-10** (10 pole, 3.5 mm grid)



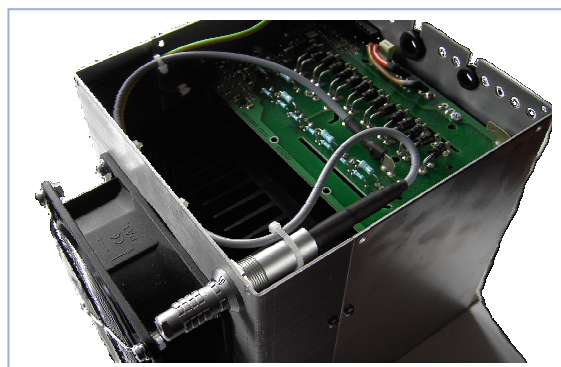
Pin 9	24V DC/0.5A	Aux-Volt. INPUT	- Voltage
Pin 2	GND		
Pin 10	GND		
Pin 6	INTERLOCK - 24V	INPUT	of Interlock-Security-Switches
Pin 7	MW-ON	INPUT	to switch microwave-power on/off
Pin 1	I_{variable}	POWER-Set	INPUT analog-value for wanted MW-POWER
Pin 5	I_{a_measure}	Anode Current	OUTPUT analog-value of output current
Pin 8	U_{a_measure}	Anode Voltage	OUTPUT analog-value of output voltage
Pin 3	ERROR	OUTPUT	ERROR-Pin (ERR= hi, NO_ERR= lo)
Pin 4	ERR_LED	OUTPUT	ERROR-Nr (look Error-section)

2. POWER Connector RIA connector: **AKL 349-05** (5 pole, 5.0 mm grid) 230 V~ / 50 Hz Mains-Voltage

3. HV Connector

FAST-On - connector

optional: LEMO connector:
FFA.1Y.410.CLAC47

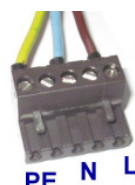


1. CONTROL Connector: Pinning 10 pole (3,5 mm grid):

Pin	Name	Definition	Description
1	I_{variable}	0 V... +10 V POWER-Setting	
2	GND	- Ground -	
3	ERROR	Error, 6 mA for LED or err-interpretation Error-Nr-Detection with ERR_LED-Signal	Connect LED-cathode to GND, and LED-anode to ERROR
4	ERR_LED	Periodic-blink = normal operation fast/slow-blink = count slow-blink-times >> look at Error	connect LED-cathode to GND, and LED-anode to ERR_LED
5	I_{a_Measure_Out}	I _a = Anode current 0 ... +10V (0 .. 100 %), R _i = 1kOhm	
6	+24V_I_Lock	INTERLOCK - connection	Area: +24V
7	MW-ON	Microwave ON/OFF	Area: +5V ... +24V
8	U_{a_Measure_Out}	0V ... +10V, R _i = 1kOhm	optional
9	+24V/0.5A	0.5 A (120 mm fan)	
10	GND	- Ground -	

2. POWER Connector: Pinning 5 pole (5,0 mm grid) POWER 230V~ ± 10%, L,N,PE

Pin	Name	Definition
1	L	230V eff / 9A
2		
3	N	230V eff / 9A
4		
5	PE	protective earth conductor



3. Connector High-Voltage (Faston-Conn.): HV for -4500 V and Ground

