PARA PULSER

TAKE BACK YOUR POWER

Magnetic Pulser

(Based on the researches of Dr. R. C. Beck)

Programming

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INDEX OF CONTENTS

8. Programming-mode

i To be able to perform at the **Parapulser** a programming, adjustment or readout, the *Programming-mode* has to be <u>activated previously</u>:

8 a) *Programming-mode* activate   Æ *PROG*-key press <u>at switch on of the</u> **Parpulser** **3** seconds, until **3** Piep-tones are audible and all **3** LEDs (**= = =**) <u>light up permanently</u>.

8 b) *Programming-mode* terminate   Æ **Parapulser** switch off with **on/OFF**-key, or...
    Æ *PROG*-key **3 x** quick press if all **3** LEDs (**= = =**) are on permanently: **Parapulser** switches to normal operating mode.
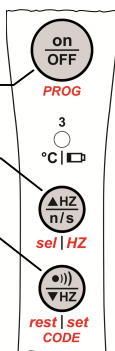
<u>Programming-keys</u>:

PROG-key

sel-key
HZ-key

rest -key
set -key
CODE-key

on/OFF
PROG

3
°C | ▯

▲HZ
n/s
sel | HZ

●)))
▼HZ
rest | set
CODE

<u>Brief description</u>:

PROG - *Programming-modus* activate/ terminate
    - Input-mode abort
    - One digit back
    - **Parapulser** switch off

sel - Number (0-9) / memory (1-12) select
HZ - Frequency-input activate/ complete

rest - Pulse reservoir / Frequency value readout
set - selected number (0-9) confirm
CODE - Input-mode (e.g. for Code-number) activate

8.1	**Overview programming-options**

Chapter	Programming-Option	Number input / -readout							
8.2	Puls frequency program	Z_1	Z_2	Z_3	Z_4	Z_5			
8.2	Puls frequency readout	A_1	A_2	A_3	A_4	A_5			
8.4	Acoustic Puls counter program	**1**	**1**	Z_1	Z_2	Z_3	Z_4		
8.4	Acoustic Puls counter readout	**1**	**2**	A_1	A_2	A_3	A_4		
8.5	Loudness operating-signals	**1**	**3**						
8.5	Loudness acoustic pulse counter	**1**	**4**						
8.6	Yellow LED "**ON**" at pulse consuming	**1**	**5**						
8.7	Upgrade-frequency readout	**1**	**6**	A_1	A_2	A_3	A_4		
8.8	Software version readout	**1**	**7**	A_1	A_2				
8.8	Serial number readout	**1**	**8**	A_1	A_2	A_3	A_4	A_5	A_6
—	Checksum readout[1]	**1**	**9**	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8

Chapter	Programming-Option	Number input / -readout							
8.10	Puls reservoir readout	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8
8.9	Test-CODE input	**6**	**2**	**7**	**0**	**9**	**3**		
8.10	Pulse reservoir refill	C_1	C_2	C_3	C_4	C_5	C_6		
8.7	Upgrade-frequency increase	C_1	C_2	C_3	C_4	C_5	C_6		
8.12	Unblock-CODE input	C_1	C_2	C_3	C_4	C_5	C_6		

0 ... 9 : This number is predetermined and has to be input by the user.
A_1... A_8 : This number (**0** – **9**) is emitted by the **Parapulser**.
C_1... C_6 : The **6**-digit CODE-number has to be input by the user.
Z_1... Z_5 : This number (**0** – **9**) has to be choosen and input by the user.

1) This function is of relevance for the manufacturer only.

8.2 **Puls frequency programming**

At programming a puls frequency the following rules have to be observed:

– Only frequency values between **1.000** and **20.000** Hz can be entered.
– A frequency value has to be entered in the form of a **5**-digit number without point.
  Examples: **7,840** Hz becomes to the sequence **07840**, **12,667** Hz becomes to **12667**.

Program a pulse frequency into a **free memory location**:

1.) Write down the frequency value in the form of a **5**-digit number (e.g. **07843**).

2.) Activate *Programming-mode*, see "**8a)**" on page **2**.

3.) Select free memory location:
sel-key press **so often shortly**, until the number (**1**–**12**) of the **free memory location** in which you want to enter the frequency value, is displayed via LEDs (**= = =**).

4.) Activate Input-mode:
HZ-key press **2** sec., until **3** "**Piep!**"-tones are audible. The input-mode is now activated: the **red** LED blinks **1**x per second and in addition a Piep-tone is audible!

5.) **5**-digit number sequence input:
Jump to chapter "**8.13**" on page **11** and follow the instructions for number entering. Afterwards it continues here with point **6.)**.

6.) The frequency value has been entered successfully:
The input-mode is terminated automatically and the LEDs (**= = =**) show again the number (**1** – **12**) of the **free memory location**, in which the frequency value was programmed just before.
Æ **1**x **short** press of *PROG*-key, that all **3** LEDs (**= = =**) light up again.

7.) Adjust **Parapulser** to programmed frequency value:
To use the just programmed pulse frequency, follow the two instructions below:
Æ *Programming-mode* terminate (preferably without switch off of the **Parapulser**), see "**8b)**" on page **2**.

Æ select **free memory location** (**1** – **12**), see "**7.3**" and *especially* "**7.4**" on page **12** at the **Parapulser** manual!

8.2a	**Input easements at programming a pulse frequency**

a) Remaining Zero-digits automatical input / Quick-delete of memory location:

All not yet entered digits of a frequency value will be overwritten with "**0**", if the input-mode is manually terminated.

> **Example** for Zero-digit filling:
> To input **10.000** Hz, it is sufficient to enter the number "**1**", and afterwards to terminate the input-mode, see **b)**.

> **Example** for quick-delete:
> After selection of the free memory location to be erased, activate input-mode, see **4.)** above, and just terminate it again, see **b)**. The deleted **memory location** is no longer selectable during normal operation mode of the **Parapulser**.

b) Input-mode terminate: *HZ*-key **2** seconds press, until "**Dulip!**"-signal is audible.

c) One digit back:

Shall the last programmed digit be corrected, shortly press the *PROG*-key: the blink-number shows again the previous digit.

d) Input-mode abort:

The input-mode is aborted, when the *PROG*-key is **shortly** pressed *after* a jump back to a previous digit has taken place, see **c)**. All so far made inputs will be rejected and the number of the selected **memory location** is showed again via the LEDs (**= = =**).

e) Auto-termination of input-mode:

The input-mode is automatically terminated, if no key press ha staken place within the last **3** minutes: all so far made inputs will be rejected and all **3** LEDs (**= = =**) light up again.

8.3	**Pulse frequency of free memory location readout**

1.) Activate *Programming-mode*, see "**8a)**" on page **2**.

2.) Select **memory location** to be readout:

sel-key **so often short press**, until the number (**1** – **12**) of **memory location** to be readout is displayed via the LEDs (**= = =**).

3.) Readout all **5** digits of the frequency value:

rest-key **short** press, and after each actuation, write down the via LED (**= = =**) displayed number (**0** – **9**) right beside the already noted number(s).

After **5** acutations of the *rest*-key, a long "**Beeep!**"-tone signalizes, that all digits have been readout. The number (**1** – **12**) of the **free memory location** is displayed via LEDs (**= = =**).

4.) Set decimal point:

At the written number sequence, put a decimal dot after the second digit from left. The number now equals the pulse frequency in [Hz], stored in this **free memory location**.

5.) The *Programming-mode* can now being terminated, see "**8b)**" on page **2**.

8.4	**Acoustic pulse counter program [11] / readout [12]**

At programming the acoustic pulse counter, the following rules have to be observed:

- – Only counting values between **10** and **9999** are possible.
- – Turn each counting value into a **4**-digit number sequence – see examples:
  Examples: turn "**60**" into the sequence "**0060**", turn "**840**" into "**0840**".
- – Add the number "**11**" left side of the **4**-digit number sequence – see examples:
  Examples: turn "**0060**" into "**110060**", turn "**0840**" into "**110840**".
- – All input easements **a)** to **e)** as mentioned at "**8.2a on page 4**, are valid.

  Hint: When the pulse frequency is adjusted above **10** Hz, the acoustic pulse counter should not be programmed over **6000** pulses, because the counting is stopped when the **Parapulser** stops pulse generation due to over-temperature protection.

Acoustic pulse counter programming:

1.) Write down **6**-digit number sequence according upper rules, e.g. "**110840**".

2.) Activate *Programming-mode*, see "**8a)**" on page **2**.

3.) Activate Input-mode:

   CODE-key press **2** sec., until **3** "**Piep**"-tones are audible. The input-mode is now activated: the **red** LED blinks **1**x per second and in addition a "**Piep**"-tone is audible!

4.) **6**-digit number sequence input:

   Jump to chapter "**8.13**" on page **11** and follow the instructions for number entering. Afterwards it continues here with point **5.)**.

5.) The acoustic pulse counter was programmed sucessfully:

   The input-mode is terminated automatically and all three LEDs (**= = =**) light up again.

6.) Activate programmed acoustic pulse counter:

   To activate the programmed pulse counter, perform the following two instructions:

   Æ *Programming-mode* terminate (preferably without switch off of the **Parapulser**), see "**8b)**" on page **2**.

   Æ (**Parapulser** switch on and) select counting mode "**C**" of the acoustic pulse counter, see "**7.5**" on page **13** at the **Parapulser** manual, to let the **Parapulser** generate the counting signal after the programmed amount of magnetic pulses!

Readout counting value of acoustic pulse counter:

1.) Activate *Programming-mode*, see "**8a)**" on page **2**.

2.) Activate Input-mode:

   CODE-key press **2** sec., until **3** "**Piep!**"-tones are audible. The input-mode is now activated: the **red** LED blinks **1**x per second and in addition a Piep-tone is audible!

3.) **2**-digit number "**12**" input:

   Jump to chapter "**8.13**" on page **11** and follow the instructions for number entering. Afterwards it continues here with point **4.)**.

4.) <u>Write down the displayed number</u>:
The **Parapulser** now shows with help of the LEDs (**= = =**) the **<u>first</u>** digit of the up-grade-frequency. Write down this number.

5.) <u>Remaining **3** digits readout</u>:
rest-key **short** press, and after each actuation, write down the via LED (**= = =**) displayed number (**0** – **9**) <u>right beside the already noted number(s)</u>.

Repeat this procedure until a long "**Beeep!**"-tone signalizes, that all digits have been readout. The input-mode is automatically terminated and all three LEDs (**= = =**) light up again.

6.) The number sequence written down, equals the value of the pulse counter, e.g. **3500**.

8.5 **Volume adjustment of operating-signals [13] and of the pulse counter [14]**

– The volume of the normal operating signals and the beeep-tones of the acoustic pulse counter can be adjusted independently in five levels (**1** – **5**).

– <u>Abort volume adjustment</u>: *PROG*-key **short** press, the previous volume level remain unchanged and all three LEDs (**= = =**) light up again.

<u>Adjust volume of operating signals</u>:

1.) Activate *Programming-mode*, see "**8 a)**" on page **2**.

2.) <u>Activate Input-mode</u>:
CODE-key press **2** sec., until **3** "**Piep!**"-tones are audible. The input-mode is now activated: the **red** LED blinks **1**x per second and in addition a Piep-tone is audible!

3.) **2**-digit number "**13**" (operating signals) or "**14**" (pulse counter signals) input:
Jump to chapter "**8.13**" on page **11** and follow the instructions for number entering. Afterwards it continues here with point **4.)**.

4.) <u>Select volume level</u>:
sel-key **so often short press**, until the desired volume level (**1** – **5**) is displayed via LEDs (**= = =**).

5.) <u>Confirm selected volume level</u>:
set-key short press to store the selected volume level, the input-mode is terminated automatically and all three LEDs (**= = =**) light up again.

8.6 **Yellow LED "ON" when consuming pulses [15]**

– On demand, the **Parapulser** shows acoustically and optically, if a pulse frequency has been selected at which a user fee is charged, and therefore magnetic pulses are consumed from the pulse reservoir. An information about the user fee and consuming pulses you find at "**6.2**" on page **8** at the **Parapulser** manual.

– <u>Identifying feature for **ON**-switched consuming display</u>:
At switch over to a puls frequency with user fee, a "**Dulip!**"-signal is audible <u>followed by a "**Piep!**"-tone</u>, and additionally the yellow LED (**=**) flashes at each consumed magnetic pulse.

Display of pulse consumption **On**/**Off** switching:

1.) Activate *Programming-mode*, see "**8a)**" on page **2**.

2.) Activate Input-mode:

CODE-key press **2** sec., until **3** "**Piep!**"-tones are audible. The input-mode is now activated: the **red** LED blinks **1**x per second and in addition a Piep-tone is audible!

3.) **2**-digit number "**15**" input:

Jump to chapter "**8.13**" on page **11** and follow the instructions for number entering. Afterwards it continues here with point **4.)**

4.) Acoustic confirmation of **On**/**Off** switching:

Directly after the input of the second digit (number "**5**"), an acoustic signal is audible:

– At **On** switching the consumption display, a "**Dulip!**"-signal is audible,

– At **Off** switching the consumption display, a long "**Beeeep!**"-tone is audible,

Afterwards, the input-mode is terminated automatically and all three LED (**= = =**) light up again.

8.7 **Upgrade-Frequency increase / readout [16]**

The upgrade frequency can be increased up to **20** Hz against payment, see "**6.2**", on page **8**.

Upgrade-frequency increase:

1.) Order **6**-digit upgrade CODE-number at your **Parapulser** salesman.

2.) Enter the CODE-number as described at "**8.13**", page **11**. After successful CODE-input the increased upgrade-frequency can be checked by readout right away:

Readout upgrade-frequency (**1** or **2**-digit):

1.) Activate *Programming-mode*, see "**8a)**" on page **2**.

2.) Activate Input-mode:

CODE-key press **2** sec., until **3** "**Piep!**"-tones are audible. The input-mode is now activated: the **red** LED blinks **1**x per second and in addition a Piep-tone is audible!

3.) **2**-digit number "**16**" input:

Jump to chapter "**8.13**" on page **11** and follow the instructions for number entering. Afterwards it continues here with point **4.)**.

4.) Write down the displayed numbers:

The **Parapulser** now shows with help of the LEDs (**= = =**) the __first__ digit of the upgrade-frequency. Write down this number.

5.) Remaining digits of upgrade-frequency readout:

rest-key **short** press, and after each actuation, write down the via LED (**= = =**) displayed number (**0** – **9**) right beside the already noted number(s).

Repeat this procedure until a long "**Beeep!**"-tone signalizes, that all digits have been readout. The input-mode is automatically terminated and all three LEDs (**= = =**) light up again.

6.) The written numbers (e.g. "**2**" or "**10**") equals the upgrade-frequency in [Hz].

8.8	**Software version [17] or serial number [18] readout**

Software version (**2**-digit) or serial number (**6**-digit) readout:

1.) Activate *Programming-mode*, see "**8 a)**" on page **2**.

2.) Activate Input-mode:
CODE-key press **2** sec., until **3** "**Piep!**"-tones are audible. The input-mode is now acti-vated: the **red** LED blinks **1**x per second and in addition a Piep-tone is audible!

3.) **2**-digit number "**17**" (softw. ver.) or "**18**" (ser.-no.) input:
Jump to chapter "**8.13**" on page **11** and follow the instructions for number entering. Af-terwards it continues here with point **4.)**.

4.) Write down the displayed numbers:
The **Parapulser** now shows with help of the LEDs (**= = =**) the **first** digit of the up-grade-frequency. Write down this number.

5.) Readout of remaining digits of software-version or serial number:
rest-key **short** press, and after each actuation, write down the via LED (**= = =**) dis-played number (**0 – 9**) right beside the already noted number(s).

Repeat this procedure until a long "**Beeep!**"-tone signalizes, that all digits have been readout. The input-mode is automatically terminated and all three LEDs (**= = =**) light up again.

If the **2**-digit software version has been readout, the version you get by inserting a dot (.) between the two numbers:
Example: Readout numbers: "**3**" and "**1**", à software version is "**3.1**".

8.9	**Test-CODE input [6]**

– The correct input of a **6**-digit CODE-number can be practiced unlimited with the test-CODE "**627093**". Thereby the risk of a CODE-lock is lowered, which will be initiated, when a real CODE-number is entered three times wrongly.

– How the numbers (**0 – 9**) are displayed via the LEDs (**= = =**), should have been un-derstood, to be able to enter the test-CODE successfully, see "**6.1**", on page **7** at the **Parapulser** manual.

– Test-CODE input abort: *PROG*-key **as often short press**, until all **3** LEDs (**= = =**) light up again.

Test-CODE input:

1.) Activate *Programming-mode*, see "**8 a)**" on page **2**.

2.) **Attention**: For an explicit identification, that the test-CODE instead of a real CODE-number is being entered, after each, via *set*-key finished digit-input, the yellow LED (**=**) lights up for **1** second.

If the yellow LED does not light up during point **4.)**, immediately abort the CODE-input abbrechen (*PROG*-key **2**x **short** press) and start again at point **3.)**.

3.) <u>Activate Input-mode</u>:

CODE-key press **2** sec., until **3** "**Piep!**"-tones are audible. The input-mode is now acti-vated: the **red** LED blinks **1**x per second and in addition a Piep-tone is audible!

4.) **6**-digit sequence of numbers "**627093**" input:

To input the test-CODE jump to chapter "**8.13**" on page **11**, and follow the instructions for the number entering; during digit input pay attention to point **5.)**:

5.) <u>Acoustic test result during digit input</u>:

After confirmation of a selected number via the *set*-key, the **Parapulser** generates a test signal and the yellow LED (**=**) lights up for **1** second:

Æ At correct selected number (**0** – **9**) a "**Dulip!**"-tone is audible,

Æ At wrong selected number (**0** – **9**) a "**Beeep!**"-tone is audible. In this case choose again the correct number (**0** – **9**).

6.) After correct input of all **6** digits, the input-mode is finished automatically and all **3** LEDs (**= = =**) light up again.

8.10	**Refill / Readout pulse reservoir**

<u>Refill pulse reservoir</u>:

1.) Select desired amount of pulses out of the table below or calculate it:

<u>Calculation of the needed amount of magnetic pulses</u>:

Needed pulse amount = [number of application days] x [number of daily applications] x [pulse frequency in Hz] x [amount of minutes per application] x [**60**].

Example : How many magnetic pulses are needed for **14** days of application with each **2** applications per day at **12** Hz pulse frequency and each **5** min. duration?

Calculation : **14** x **2** x **12** x **5** x **60** = **100.800**, ouf of table choosen value Æ **100.000**

Selectable quantities of magnetic pulses						
100.000	300.000	500.000	1.500.000	3.500.000	6.000.000	10.000.000
150.000	350.000	600.000	2.000.000	4.000.000	7.000.000	12.000.000
200.000	400.000	800.000	2.500.000	4.500.000	8.000.000	14.000.000
250.000	450.000	1.000.000	3.000.000	5.000.000	9.000.000	16.000.000

2.) Order the needed **6**-digit CODE-number at your salesman.

3.) Enter the received CODE-number into the **Parapulser**, see "**8.13**" on page **11**.

– After successful refill of the pulse reservoir, the new level of the reservoir can imme-diately be checked by readout, see below.

– At next switch on, the **Parapulser** states the fill level of the pulse reservoir with num-ber **4**, that means, the fill level is at **100** %, see "**6.3**" on page **8** at the **Parapulser** manual.

– The pulse reservoir can´t be filled to more than **16.777.215** pulses. Fillings above this limit get lost.

Readout pulse reservoir:

1.) Activate *Programming-mode*, see "**8 a)**" on page **2**.

2.) *rest*-key **short** press, and after each actuation, write down the via LED (**= = =**) displayed number (**0** – **9**) <u>in a row from left to right</u>.

Repeat this procedure until a long "**Beeep!**"-tone signalizes, that all digits have been readout. The input-mode is automatically terminated and all three LEDs (**= = =**) light up again.

The noted number sequence, e.g. **12345678**, represents the exact amount of magnetic pulses, which are in the pulse reservoir. At empty pulse reservoir, the number "**0**" will be readout.

8.11	**CODE-number input**

⚠️ ***Attention!*** *If a CODE-number has been entered **3 times** wrong in a row, the **Parapulser** blocks any further CODE-input (CODE-lock). Then, refilling the pulse reservoir or increasing the upgrade-frequency is no longer possible. A CODE-lock can be unlocked only with an* unblocking-*CODE, see* "***8.12****" below.*

To avoid a CODE-lock caused by false input, it is recommended to practice the CODE-input, see "***8.9****" on page **8**.*

Input of a CODE-number:

1.) Activate *Programming-mode*, see "**8 a)**" on page **2**.

2.) <u>Activate Input-mode</u>:

CODE-key press **2** sec., until **3** "**Piep!**"-tones are audible. The input-mode is now activated: the **red** LED blinks **1**x per second and in addition a Piep-tone is audible!

3.) <u>**6**-digit CODE-number input</u>:

Jump to chapter "**8.13**" on page **11** and follow the instructions for number entering. Afterwards it continues here with point **4.)**.

4.) <u>Acoustic test result **after entering the last** CODE-digit</u>:

Æ When all **6** digit were entered correctly, a "**Dulip!**"-signal is audible,

Æ When a wrong CODE-number was entered, a "**Beeep!**"-signal is audible, and the **red** LED (**=**) lights up for **1** second.

The "**Beeep!**"-signal sounds with **red** LED (**=**) so often, as the CODE-number was entered wrongly before (maximum **3**x).

5.) After generation of the acoustic test result, the input-mode is finished automatically and all three LED (**= = =**) light up again.

8.12	**Unblocking-CODE**

– A CODE-lock can only be unlocked by entering a **6**-digit *unblocking*-CODE, which has to be ordered from your **Parapulser** salesman. How to input an *unblocking*-CODE is described at "**8.13**" on page **11**.

– After a correct input of an *unblocking*-CODE, it is again allowed to enter a CODE-number **3**x wrongly, until the next CODE-lock happens.

– If an *unblocking*-CODE is entered **3**x wrongly, the **Parapulser** blocks the input of a second *unblocking*-CODE. To unlock this lock, the **Parapulser** hast to be reprogrammed by the manufacturer. In this case please contact the customer service, see "**14.**" on page **27** at the **Parapulser** manual.

8.13	**2-, 5-, or 6-digit sequence of number input**

Just after the input-mode has been activated, the **red** LED is blinking **1**x per second, and in addition a "**Piep!**" tone is audible.

The amount of the **red** and **blue** LED-blinks, i.e. Piep-tones per second indicate, which digit of the **2-**, **5-**, or **6**-digit **sequence of numbers** has to be input at next (see table below):

Examples for sequence:	Pulse frequency	(Hz) :	**07843**
of numbers	acoustic pulse counter	(Pu) :	**110840**
	CODE-number	(Co) :	**843721**

Number of LED-blinks and Piep per second		**Digit to be input of the 2-, 5- or 6-digit sequence of numbers** (with examples)
1 = Æ		1ˢᵗ digit to be input (Hz) **0** (Pu) **1** (Co) **8**
2 = = Æ		2ⁿᵈ digit to be input (Hz) **7** (Pu) **1** (Co) **4**
3 = = = Æ		3ʳᵈ digit to be input (Hz) **8** (Pu) **0** (Co) **3**
4 = = = = Æ		4ᵗʰ digit to be input (Hz) **4** (Pu) **8** (Co) **7**
5 = = = = = Æ		5ᵗʰ digit to be input (Hz) **3** (Pu) **4** (Co) **2**
6 = = = = = = Æ		6ᵗʰ digit to be input (Hz) **-** (Pu) **0** (Co) **1**

The input of the indicated digit happens in two steps, **A** and **B**:

A) Select desired numerical value:

sel-key **press as often shortly**, until the desired numerical value (**0** – **9**) of the actual digit is displayed with help of the LEDs (**= = =**).

i — Hint for the number selection (**0** – **9**) via *sel*-key:

– At the **first** and **second** digit, the number selection begins with the number "**1**", and from the **third** digit on the selection begins with number "**0**" !

– At input of a pulse frequency, the number selection always begins with number "**0**" !

B) Confirm selected numerical value:

set-key **press shortly** to confirm the number (**0** – **9**), displayed by the three LED: at this a "**Dulip!**"-sound is audible.

Enter all remaining digits:

As long as digits have to be entered, it goes back to step **A**), else wise it goes back to the chapter from where you have jumped to this chapter.

14. Technical data

Model	**Parapulser**

Magnetical data

Magnetic flux density	max. **0.66** Tesla (**6600** Gauss)
Pulse frequency (programmable)	**1** – **20** Hz
Magnetic pulses per minute	**60** – **1200**
Shape of magnetic pulses	Sinus half wave (pos./ neg.)
Pulse duration	**1.6** Milliseconds

Electrical data

Operating voltage	**10.8** – **16** Volt DC
Current consumption / Power input	max. **3.5** A / max. **40** Watt
Overvoltage protection / invers polarity prot.	**60** Volt, **1** min. / **-30** Volt

General data

Life expectancy pulse capacitor	5×10^{9} magnetic pulses
Operating temperature range	**+41** °F ... **+104** °F
Storage temperature	**+14** °F ... **+122** °F
Protection category	IP50
Dimensions in inch (L x W x H)	**8.39** x **2.44** x **2.36**
Overall weight	**1.87** lbs

2.0 mm center pin

Made in Germany

Customer service:

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E-Mail : support@parapulser.de
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Your salesman:

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