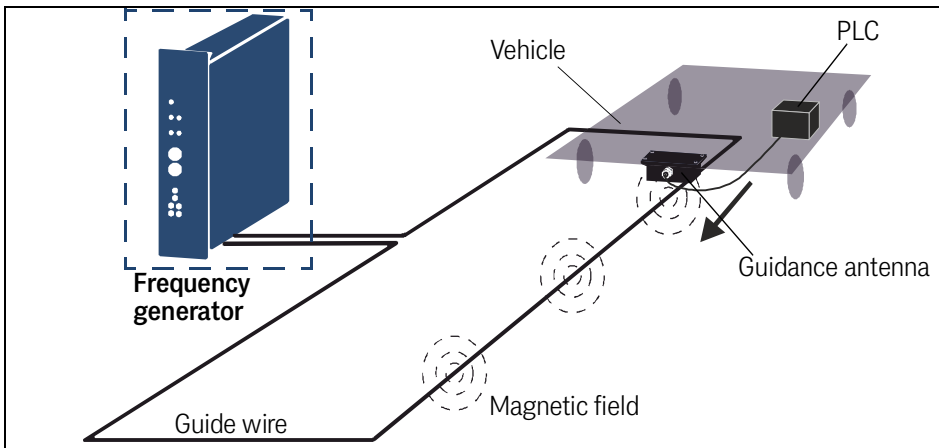


Functional Description

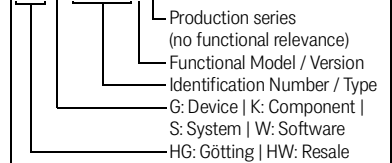


Main Features

- ♦ Dual Loop Frequency Generator
- ♦ For use with Guiding Antennas
- ♦ 2 Generator Channels with 16 selectable frequencies each
- ♦ Supports stacking
- ♦ Euro card format, for 19" rack
- ♦ Generates AC current with I = 30 to 200 mA (depending on model, see table on the backside)

Götting Product IDs (order codes)

HG G-57500YD



The frequency generator generates an AC current in a conductive loop for track guiding Automated Guided Vehicles (AGV). The board hosts two independent generators with power amplifiers and a transformer for DC-decoupling. Frequencies are stored in an EPROM and may be selected by using either the 16 position HEX switch or 4 digital inputs.

Both generators undergo voltaic conversion through a different transformer, are therefore separately adjustable and are set to give a constant output level. Short circuit and circuit breaks are detected and indicated by LEDs on the front panel.

Each generator provides 2 sets of separate connectors for connecting a short loop or a long loop. The maximum load impedance

and current differs between short and long loop by a ratio of approximately 1:2. The trim pots 'Strom 1', 'Strom 2' are affecting both outputs simultaneously.

For load impedances higher than 100 Ω the inductive reactive component can be balanced by a capacitor which has to be assembled on the board (use output „loop closure long compensated“). The capacity has to be determined for each application.

In addition the frequency generator supports stacking. This means that the two generators on the board can be connected in series. Thus a loop can be fed with twice the impedance.

Connector DIN 41612, C32 pin, AC		
Gen. 1	Gen. 2	Meaning
2a, 4a	2c, 4c	Long loop – closure
6a, 8a, 10a	6c, 8c, 10c	Short loop – closure
12a	12c	Loop start
14a, 16a	14c, 16c	Long loop – closure compensated
18a	18c	Adjustable via Jumper: <ul style="list-style-type: none"> For loop current measuring (1 Ω shunt) together with 12a/12c (Loop -Start), or via pin 18 the corresponding generator can be turned off remotely
20a	20c	GND
22a	22c	+24 V (Power)
24a	24c	Frequency select 8
26a	26c	Frequency select 4
28a	28c	Frequency select 2
30a	30c	Frequency select 0
32a	32c	Fault signaling output (5 VDC)
Adjustments / Trimming		
<ul style="list-style-type: none"> Adjustment of loop current by trim-pots on front panel Frequency selection by HEX switch on front or by 4 digital inputs (set HEX switch to zero to enable digital inputs) Jumper on board for enabling pin 12/18 for current measuring or „remote-off“ via pin 18 		
Factory Settings		
Shown in adjacent frequency table.		
Corresponding Products		
HW CON00065	VG multipole connector 32 pin AC coded	
HG G-93110	Casing for wall mounting up to 2 frequency generators, with power supply unit	
HG G-93160	19" rack for up to 5 frequency generators, with power supply unit	
HG G-93161	19" rack for up to 5 frequency generators, for connection to an external power supply 24 V DC	
HG G-19200	Inductive antenna indoor	
HG G-19330	Inductive antenna indoor	
HG G-19534	Inductive antenna outdoor	
HG G-19535	Inductive antenna outdoor	
HG G-19370 / HG G-19380	Inductive guidance sensor, multi-frequency, indoor	
HG G-73350 / HG G-73351	Inductive interpreter for the connection of two inductive antennas	

Dimensions	Control	Meaning
	24V (LED)	Power
	Z < Zmin (LED)	Short circuit or load impedance too low (Generator 1 / 2)
	O.K. (LED)	Load Impedance o.k. (Generator 1 / 2)
	Z > Zmax (LED)	Break of wire or load impedance too high (Generator 1 / 2)
	F1, F2 (HEX switch)	Frequency Selection (Generator 1 / 2)
	Strom 1, 2 (Trim-Potis)	Loop current adjustment (Generator 1 / 2)
	Mon. 1, 2 (test socket)	Test socket for loop current adjustment with internal 1 Ω shunt (Generator 1 / 2)

Frequency Setting and Device Variants															
HEX switch	Digital Inputs				Freq. sel.	Frequency [Hz] / Variant HG G-57500xD									
	F8	F4	F2	F1		P	R	S	U	V	W	X	Y	Z	
0	0	0	0	0	F1	2412	0	4700	5500	5500	4096	4000	1	1	
1	0	0	0	1	F2	3108	5000	5100	6250	6250	6554	6000	5000	5000	
2	0	0	1	0	F3	4040	5710	5500	7000	7000	10923	8000	5100	5100	
3	0	0	1	1	F4	5213	6670	5700	8400	8400	16384	10000	5200	5200	
4	0	1	0	0	F5	6216	8000	6300	10100	10100	26214	16000	5700	5700	
5	0	1	0	1	F6	5000	8890	7000	12200	12200	16000	26000	6000	6000	
6	0	1	1	0	F7	5100	10000	7800	15200	15200	17000	4700	6300	6300	
7	0	1	1	1	F8	5700	11430	8400	18100	5700	18000	5100	6500	6500	
8	1	0	0	0	F9	6000	13300	9000	22600	7000	19000	5700	7000	7000	
9	1	0	0	1	F10	6300	16000	10000	26700	7500	20000	7000	7500	7500	
A	1	0	1	0	F11	7000	20000	10100	8333	7800	21000	7500	7800	7800	
B	1	0	1	1	F12	7800	0	12000	5550	8000	22000	7800	8000	8000	
C	1	1	0	0	F13	8000	0	12200	5600	8500	23000	8000	8500	8500	
D	1	1	0	1	F14	9000	0	15200	26700	9000	24000	8500	9000	9000	
E	1	1	1	0	F15	10000	0	18100	26700	9500	25000	9000	9500	9500	
F	1	1	1	1	F16	12000	0	26700	22600	10000	26000	9500	10000	10000	
Long Loop I _{max} [mA] ± 10%						100	100	100	100	100	100	100	30	100	
Short Loop I _{max} [mA] ± 10%						200	200	200	200	200	200	200	50	200	

Synchronization	Loop Current Adjustment	Short Circuit or Loop Break
In case that both generators channels are set to the same frequency the two generators will generate their signals synchronously and in phase.	Use AC voltmeter with voltage range from 0 to 200 mV and current range of 0 to 200 mA and a frequency range higher than 10 kHz. Connect to test sockets on front plate. Adjust with corresponding spindle potentiometer.	Low load impedances are indicated by the red LED "Z<Zmin". However, contact resistances in terminal boxes etc. may increase the total impedance so that short circuits in the guide wire application may not be detected. High load impedances will be detected as an interruption and are indicated by the red LED "Z> Zmax".

Technical Data	
Dimensions	Euro card 6 TE (30.48 mm), 3HE
Weight	approx. 200 g
Temperature ranges	Operation: 0° to +50° C Storage: 0° to +70° C
Supply voltage	+24 V ±5 %
Current consumption	< 0.3 A using both channels
Load impedance	- 1 ... 30 Ω on short loop at 200 mA - 3 ... 100 Ω on long loop at 100 mA
Frequency output	depending on model and position of the HEX switch, see table frequency selection above
Resolution	1 Hz
Frequency accuracy	Quartz stabilized to better than 0.02 %
Output current	see table frequency selection above
Digital inputs (e.g. PLC)	4 inputs (FS1, FS2, FS4, FS8) with Logical Zero (0 to 0.8 Volt or open) and Logical One (5 to 24 Volt)
Connector	DIN 41612, C32 pin, AC coded