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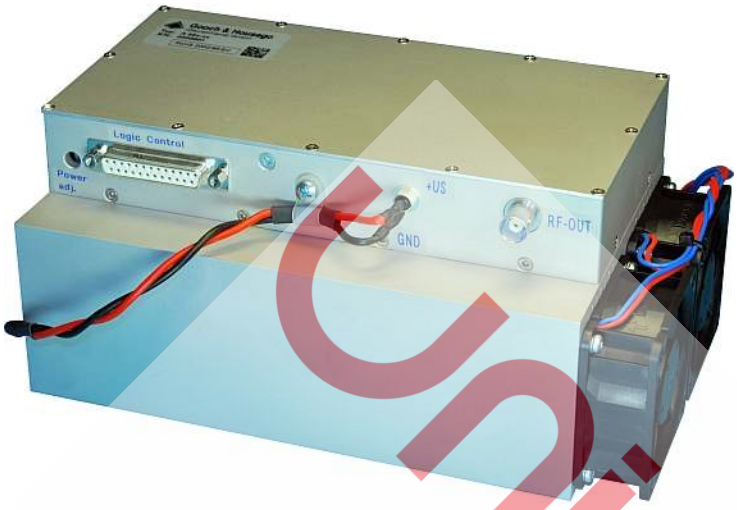

Q-Switch Driver A25-Series

125 Watt RF Drivers for Acousto-Optic Q-Switches

The A25xxx RF driver series provides up to 125 Watt output power. Combined with a power splitter cable this driver is ideal for synchronously driving a pair of Q-switches.

Various types cover a frequency range from 24 to 68 MHz.

The device can be driven either by a digital or an analogue control signal as well as by a combination of both. An operation scheme below (page 7) illustrates the interaction of the two modulation signals in detail.

Both the analogue and digital modulation controls allow excellently short rise and fall times for high laser pulse energies.

The driver can be operated with modulation frequencies (analogue and digital) up to 1 MHz

Optimum EMC shielding and mechanical protection is achieved by an aluminium casing and a conductive surface passivation.

Key Features:

- ☐ RF output power up to 125 Watt
- ☐ Air or water cooling
- ☐ Excellently short fall and rise times
- ☐ Constant output power design
- ☐ High SWR and Overheat safety shutdown
- ☐ Compact casing, fully shielded (EMC)
- ☐ Frequency range 24 to 68 MHz

Applications:

- ☐ High reliability / industrial purpose acousto-optic Q-switched lasers, such as:
- ☐ Material processing machines
- ☐ Laser marking devices
- ☐ Medical systems

Contact: sales@goochandhousego.com www.goochandhousego.com

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Technical Data

Supply voltage	+24 VDC			
Supply current	max. 12.5 A @ 125 W RF output power			
Maximum RF output power (adjustable) *	> 125 Watt			
Adjustment range	< 1 … >125 Watt			
Output impedance	nom. 50 Ω			
Frequency accuracy	< ±30 ppm			
RF ON / OFF ratio	> 60 dB			
Analogue modulation **				
Impedance	600 Ω			
Voltage range @ 50 Ω	0 … +5 V			
The voltage range corresponds to 0 to 100% of the potentiometer pre-adjusted maximum RF output power.				
Digital modulation **				
Impedance	4.7 kΩ (pull-up)			
Level	High = ≥ 3V … 5V (= RF on) Low = 0 … < 2V (= RF off)			
Maximum modulation frequency (digital and analogue)	1 MHz			
RF output frequency* [MHz]**	**24**	**27.12**	**40.68**	**68**
Harmonics distortion * [dBc]	< -23	< -25	< -30	< -38
Analogue modulation				
RF rise time / fall time (10 … 90%) *	< 100 ns	< 100 ns	< 80 ns	< 80 ns
Digital modulation				
RF rise time / fall time (10 … 90%) *	< 100 ns	< 100 ns	< 80 ns	< 80 ns

* into 50 Ω load

** other combinations on request

*** other frequencies on request

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Connectors, Cooling, Dimensions, Weight

RF output connector	BNC female	
Control connector	D-Sub 25-pole, female for pin assignment refer to section Control Connector, p. 7	
Power Supply Cords red (or yellow) black (or violet)	2x 750±50 mm H07V-K 1.5 mm² + V_s (24 VDC) CGND (case ground)	
Cooling	**Air**	**Water**
	Aluminium heat sink with two fans 24 V DC, 110 mA each	tube material: Aluminium AlMgSi 0.5, stainless steel water connectors for hosepipe OD = 6 mm, ID = 4 mm
Dimensions [mm]		
Casing Mounting flat	226 x 125 x 102**** 200 x 125	200 x 114 x 53**** 200 x 100
Weight	2640 grams	1470 grams

**** length x width x height

Environmental Conditions

Warm up time	10 minutes for optimum stability
Operating case temperature	< +50℃, safety shutdown at ≈55℃
Storage temperature	-20℃ … +65℃, non condensing

Absolute Maximum Ratings

Supply voltage max.	+26 VDC
Analogue modulation	
Voltage range @ 0 … +1 V	-0.5 V … +1.1 V
Voltage range @ 0 … +5 V	-0.5 V … +5.5 V
Voltage range @ 0 … +10 V	-0.5 V … +11.0 V
Digital modulation	
Level	-0.5 V … +5.5 V
Maximum operating temperature	+55℃ heat sink / base plate temperature

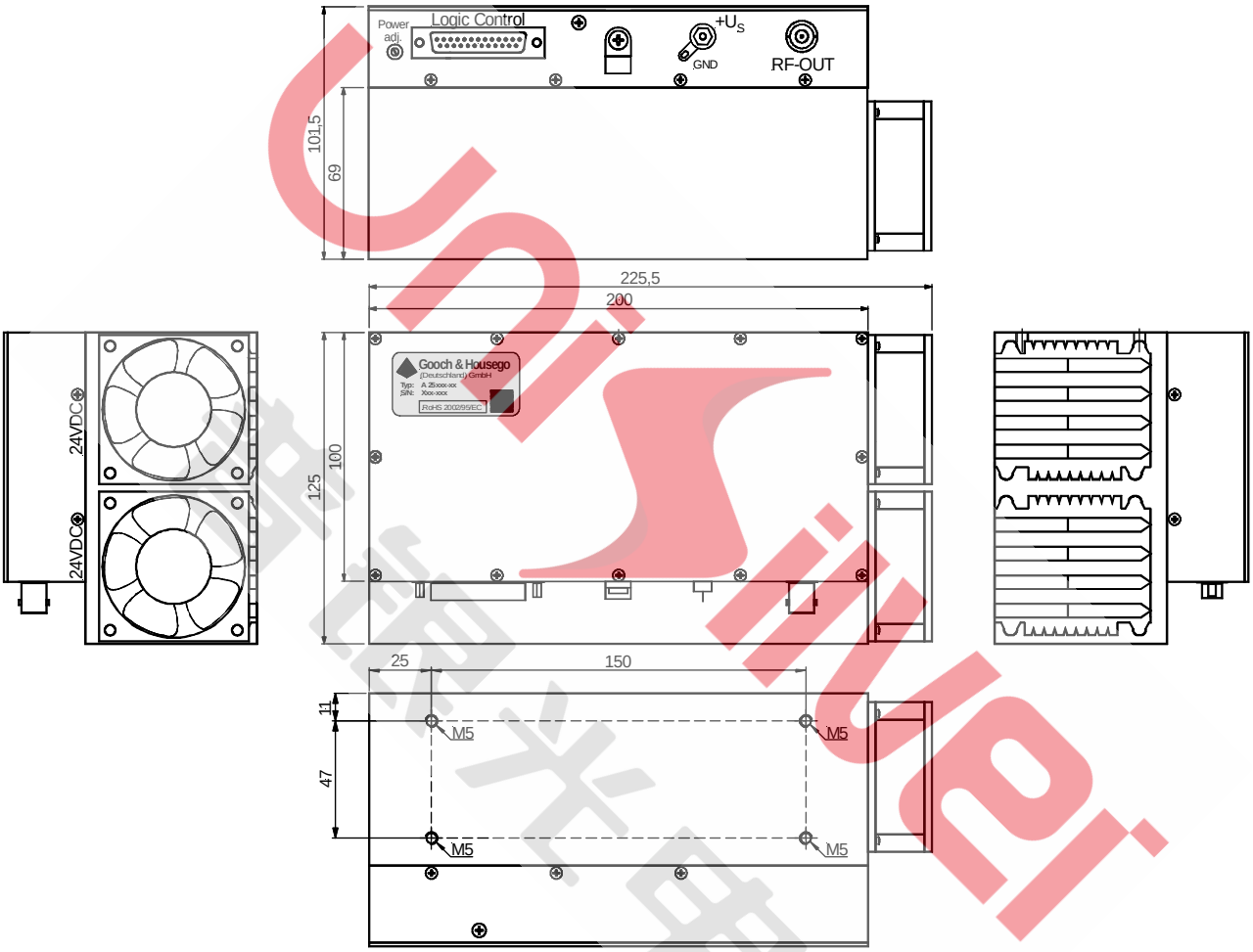
Quality Standards

EU 2002/95/EC (RoHS)	compliant
EMC standards	VDE 0871-B FCC Rules Part 15-B
Thermal test	2h @ 60℃ passive
Burn-in test	30 minutes @ maximum RF power output

Outline Drawings

Dimensions in mm

Air Cooling



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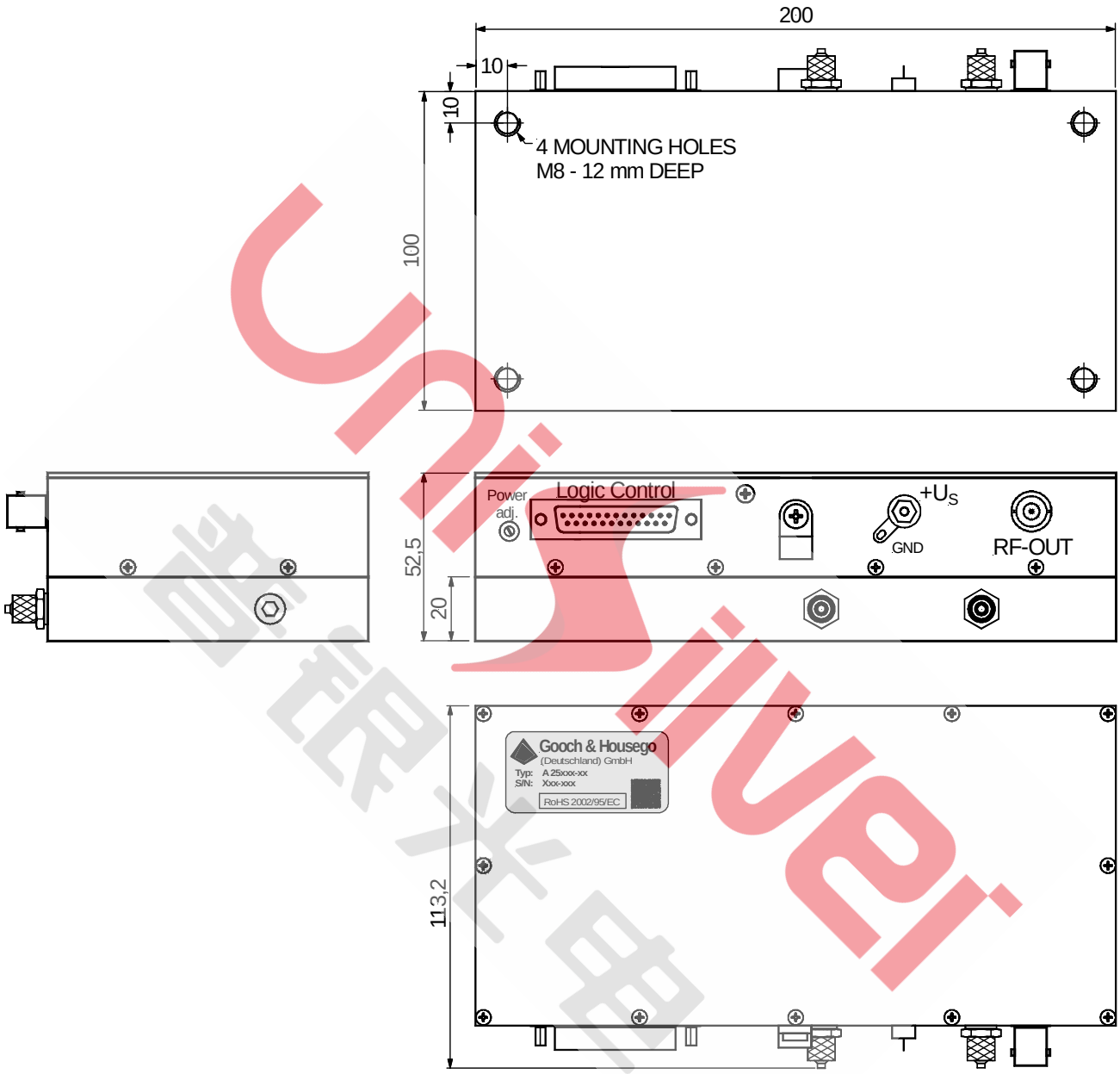
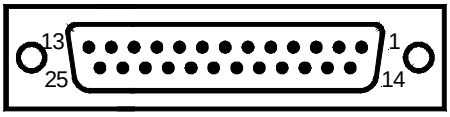
Water Cooling



Unilaser

Control Connector

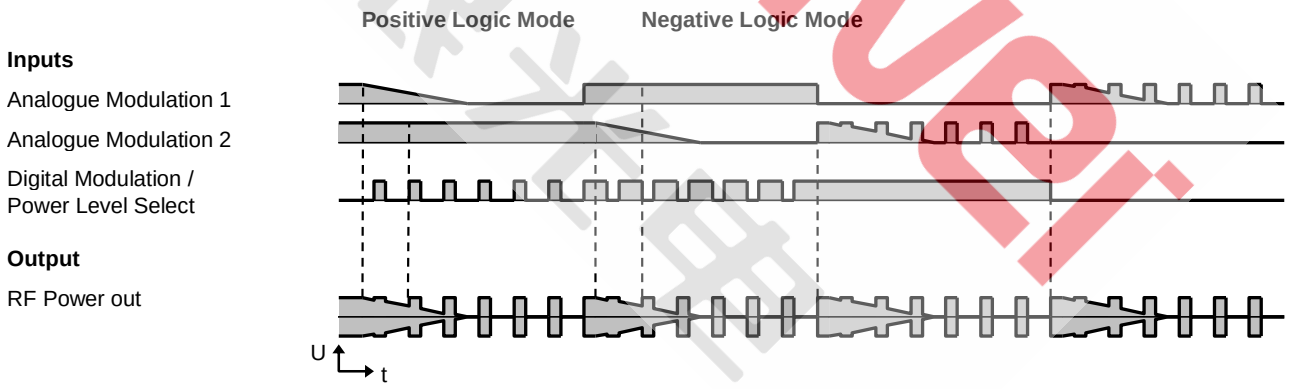
D-Sub 25-pole, female



Pin assignment
Any signals refer to chassis ground (CGND) unless denoted differently.

Pin 1	RF ON status (out)
Pin 2	SWR fault indication (out)
Pin 3	Driver temperature fault indication (out)
Pin 4	Reset SWR fault / Init (in)
Pin 5	Interlock 2 fault indication (out)
Pin 6	Interlock 2 (in)
Pin 7	Interlock 1 (in)
Pin 8	Interlock 1 fault indication (out)
Pin 9	Driver temperature monitor (out)
Pin 10	Modulation Ground (MGND)
Pin 11	Analogue modulation 2 (ref. MGND)
Pin 12	Analogue modulation 1 (ref. MGND)
Pin 13	Power Level Select (ref. MGND) LOW → select Analogue Mod. 1 HIGH → select Analogue Mod. 2
Pins 14 … 22	Chassis ground (CGND)
Pins 23 … 24	Modulation Ground (MGND)
Pin 25	not connected

Operation Scheme of Analogue and Digital Modulation



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Variants List / Ordering Codes

A25 □ - □ -5/600-s4k7u

	Frequency [MHz]
024	24.0
027	27.12
041	40.68
068	68.0

	Cooling
A	Air
W	Water

Other customized versions are available on request.

Accessories

Coax Transformer Cable C61x/C62x Series	refer to data sheet for details
3 dB Power Splitter	

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