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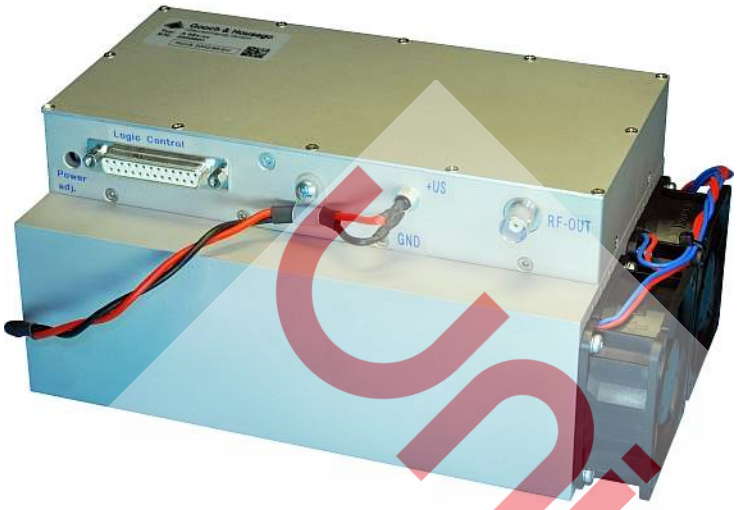

Q-Switch Driver A23-Series

200 Watt RF Drivers for Acousto-Optic Q-Switches

The A23xxx RF driver series provides up to 200 Watt output power. Combined with a power splitter cable this driver is ideal for synchronously driving a pair or a quartet of Q-switches.

Standard frequencies are 24 or 27.12 MHz. Higher frequencies such as 40.68 or 68 MHz are available on request.

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 6) 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 200 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 from 24 to 27.12 MHz, beyond on request

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. 15 A @ 200 W RF output power	
Maximum RF output power (adjustable) *	> 200 Watt	
Adjustment range	< 1 … >200 Watt	
Output impedance	nom. 50 Ω	
Frequency accuracy	< ±30 ppm	
RF ON / OFF ratio	> 53 dB	
Analogue modulation ** (Analogue Modulation Input 1 and 2)		
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 ** (Power Level Select Input)		
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**
Harmonics distortion * [dBc]	< -21	< -21
Analogue modulation		
RF rise time / fall time (10 … 90%) *	< 100 ns	< 100 ns
Digital modulation		
RF rise time / fall time (10 … 90%) *	< 100 ns	< 100 ns

* into 50 Ω load ** other configurations on request *** other frequencies on request

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. 6	
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	2710 grams	1530 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
Digital modulation Level	 -0.5 V … +5.5 V
Maximum operating temperature	+55℃ heat sink / base plate temperature

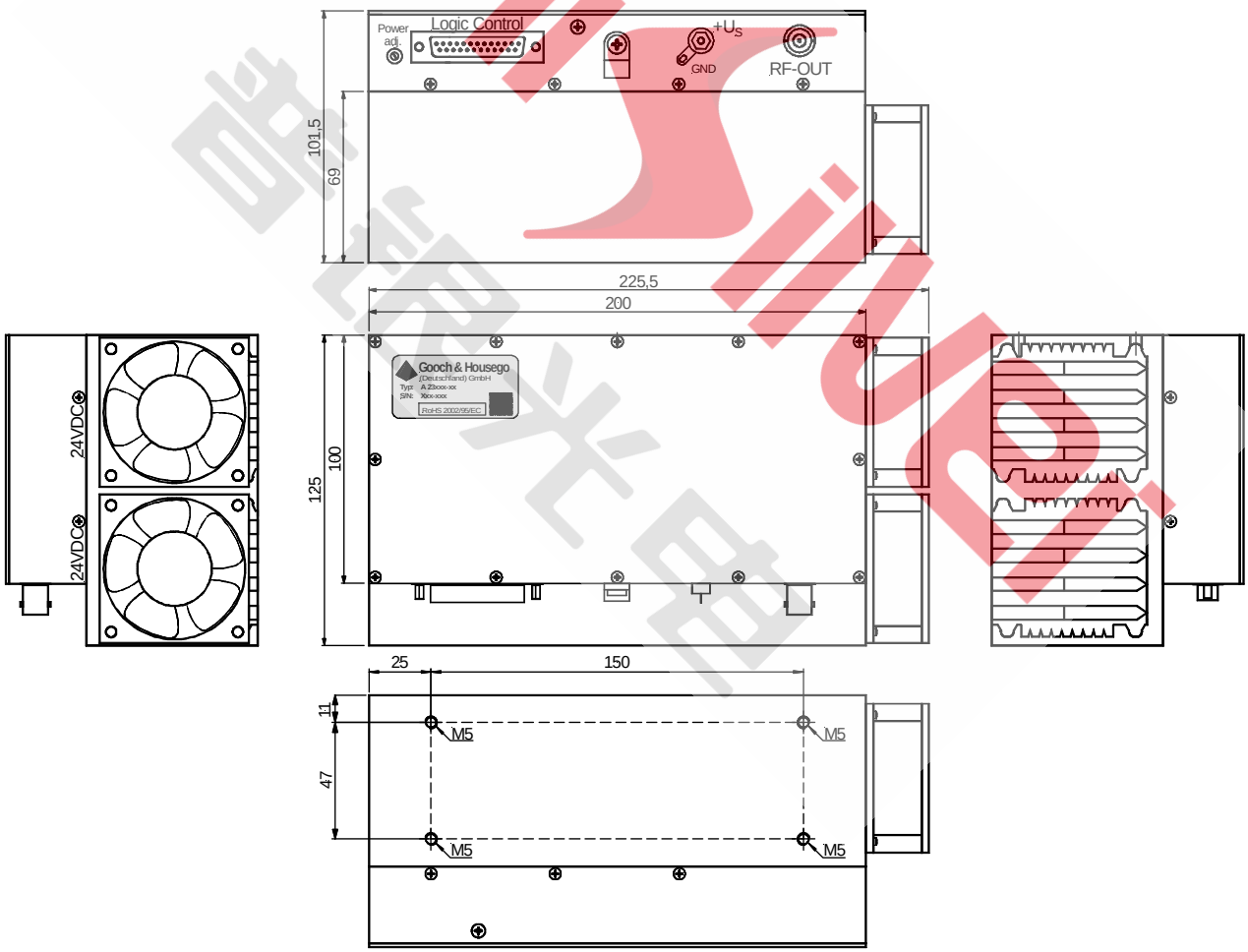
Quality Standards

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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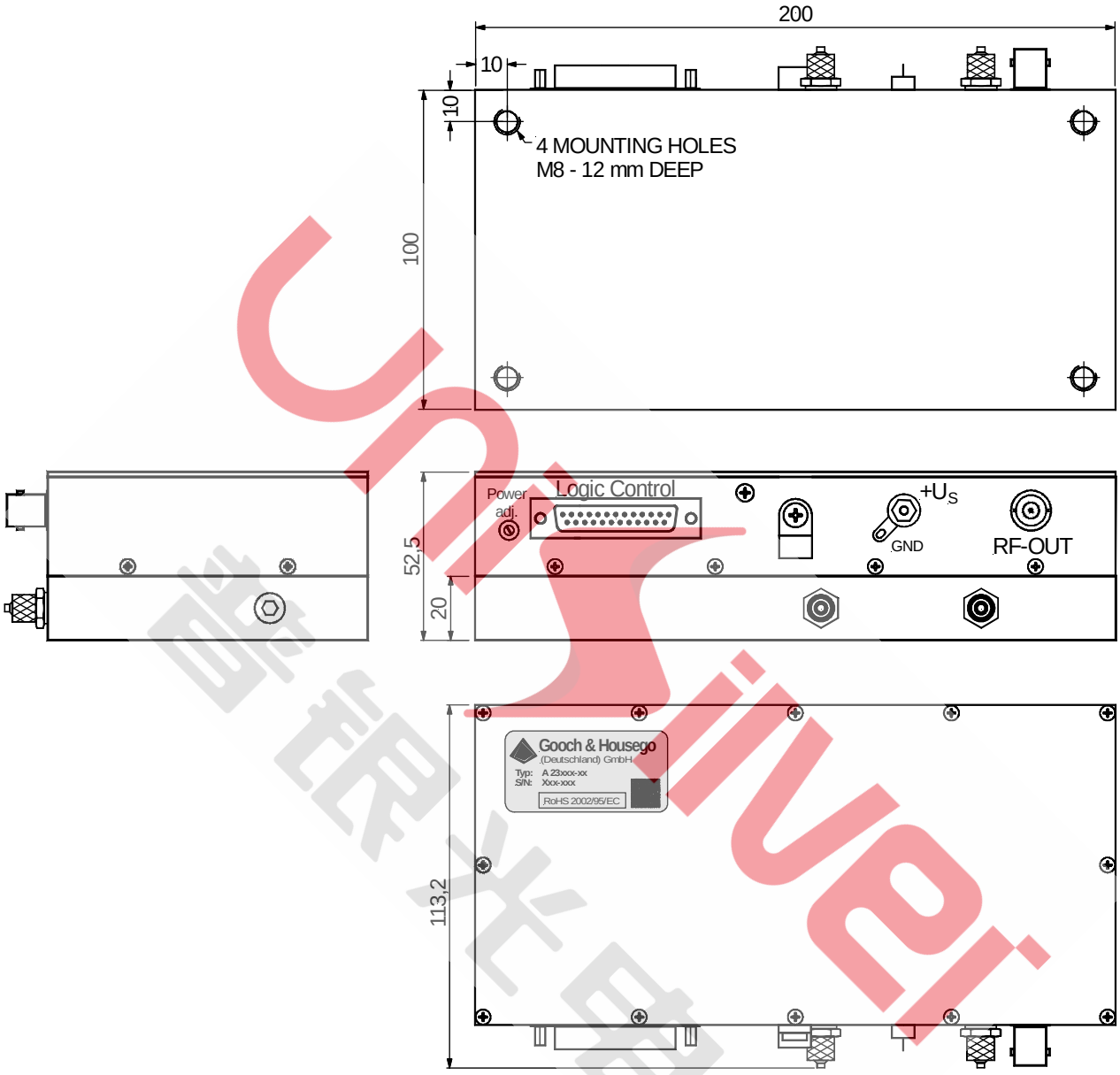
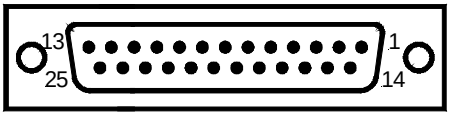
Water Cooling



Control Connector

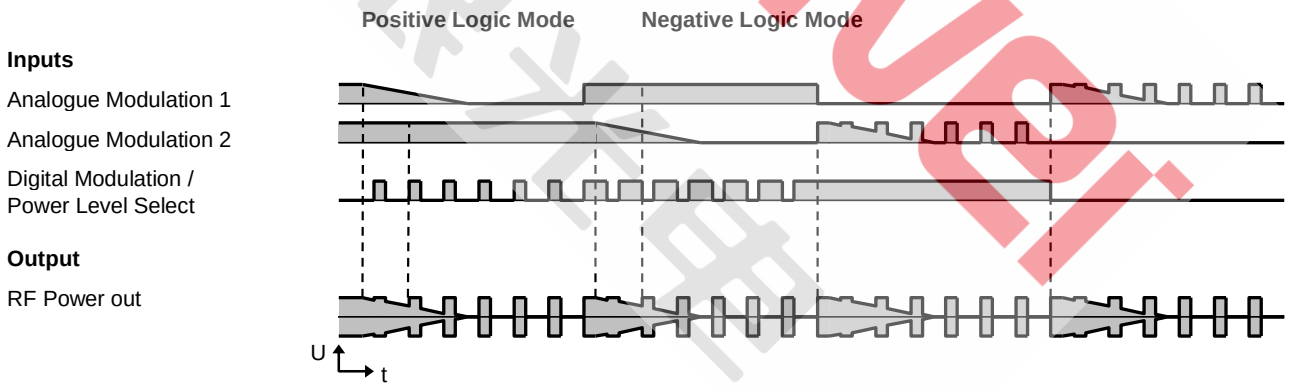
D-Sub 25-pole, female



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



Variants List / Ordering Codes

A23 □ - □-5/600-s4k7u

	Frequency [MHz]		Cooling
024	24.0	A	Air
027	27.12	W	Water

Other customized versions are available on request.

Accessories

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