

# Gooch & Housego



## AOM Driver A36-Series

### 2 Watt RF Drivers for Acousto-Optic Modulators

The A36xxx RF driver series provides up to 2 Watt output power. The frequency is factory preset in a range from 40 to 350 MHz.

The maximum RF output power is adjustable by an internal potentiometer. The analogue modulation voltage controls the output power from 0 to 100% of the adjusted maximum power.

Additionally to the analogue modulation voltage a digital modulation control signal can switch on and off the RF power. An operation scheme below (page 6) illustrates the interaction of the two modulation signals in detail.

Both the analogue and digital modulation are characterized by extraordinary on/off ratios of at least 55 dB.

The driver can be operated with modulation frequencies (analogue and digital) up to 25% of the carrier frequency and 50 MHz maximum.

Optimum EMC shielding and mechanical protection is achieved by an aluminium casing. The base plate serves for mounting as well as for heat dissipation.

#### Key Features:

- Frequency range 40 to 350 MHz, factory preset
- RF output power 2 Watt
- RF on/off ratio > 55 dB
- Constant output power design
- Models with a modulation frequency up to 50 MHz available
- Conductive cooling through base plate
- Compact casing, fully shielded (EMC)

#### Applications:

- Fast modulation components for extra cavity applications, e. g. laser projection systems
- Frequency shifting



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## Technical Data

<b>Supply voltage</b>	+24 VDC			
<b>Supply current</b>	typ. 0.75 A @ 2 W RF output power			
<b>Output impedance</b>	nom. 50 $\Omega$			
<b>Maximum RF output power (adjustable) *</b>	> 2 W (+33 dBm)			
Adjustment range	< 0.1 W ... > 2 W			
<b>Frequency accuracy **</b>	< $\pm 25$ ppm			
<b>Harmonics distortion *</b>	< -26 dBc			
<b>Analogue modulation</b>				
Impedance	50 or 600 $\Omega$ ***			
Voltage range @ 50 $\Omega$	0 ... +1 V or 0 ... +5 V ***			
Voltage range @ 600 $\Omega$	0 ... +5 V or 0 ... +10 V ***			
RF ON / OFF ratio	> 55 dB			
<b>Digital modulation</b>				
Impedance	4.7 k $\Omega$ (pull-up or pull-down) or 50 $\Omega$ (pull-down)***			
Level	High = $\geq 3$ V ... 5V Low = 0 ... < 2V			
Logic styles	<u>Input signal:</u> High    Low    not connected			
positive logic, pull-up	RF power:    on    off    on			
positive logic, pull-down	on    off    off			
negative logic, pull-up	off    on    off			
negative logic, pull-down	off    on    on			
RF ON / OFF ratio	> 75 dB			
<b>RF output frequency **** [MHz]</b>	<b>40 ... &lt;80</b>	<b>80 ... &lt;140</b>	<b>140 ... &lt;200</b>	<b>200 ... 350</b>
<b>Analogue modulation</b>				
RF rise time / fall time ( $P_{RF}$ : 10 ... 90%) *	< 25 ns	< 15 ns	< 10 ns	< 8 ns
<b>Digital modulation</b>				
RF rise time / fall time ( $P_{RF}$ : 10 ... 90%) *	< 25 ns	< 15 ns	< 10 ns	< 8 ns
* into 50 $\Omega$ load	*** other combinations on request			
** higher accuracy available on demand	**** The frequency can be factory-set in a range from 40 to 350 MHz			

## Connectors, Dimensions, Weight, Cooling

<b>RF output connector</b>	SMA female		
<b>Control input connector</b>	D-Sub 7W2		
Pins 1 and 2, inside linked	GND (case)		
Pins 3 and 5, inside linked	+V <sub>s</sub> (24 VDC)		
Pin 4	not connected		
Pin A1 (coaxial)	Analogue modulation		
Pin A2 (coaxial)	Digital modulation		
<b>Cooling</b>	<b>Conduction</b>		
	The base plate must be attached to a suitable heat sink capable of dissipating 18 Watt.		
<b>Dimensions [mm]</b>	<b>Downsized Casing, Horizontal Flange Mounting</b>	<b>Downsized Casing, Vertical Flange Mounting</b>	<b>Standard Casing, Flange Mounting</b> (not recommended for new applications)
Casing	60 x 80 x 32 **	60 x 80 x 32 **	120 x 50 x 36 **
Mounting Flat	100 x 60	100 x 32	120 x 70
<b>Weight</b>	250 grams	260 grams	365 grams
** length x width x height			

## Environmental Conditions

<b>Warm up time</b>	10 minutes for optimum stability
<b>Base plate temperature</b>	+10°C ... +40°C For optimum output power stability constant base plate temperature should be provided.
<b>Storage temperature</b>	-20°C ... +70°C, non condensing

## Absolute Maximum Ratings

<b>Supply voltage max.</b>	+26 VDC
<b>Analogue modulation</b>	
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
<b>Digital modulation</b>	
Level	-0.5 V ... +5.5 V
<b>Maximum operating temperature</b>	+55°C base plate / case temperature

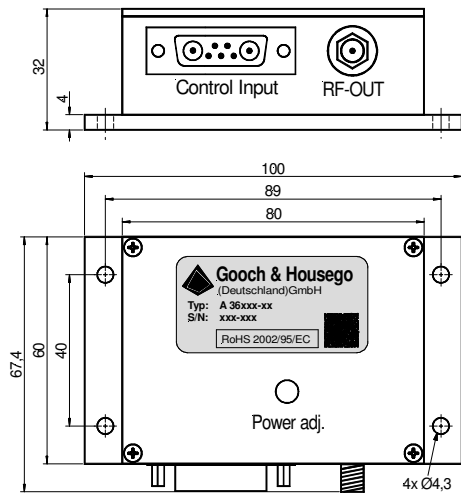
## Quality Standards

<b>EU 2002/95/EC (RoHS)</b>	compliant
<b>EMC standards</b>	VDE 0871-B FCC Rules Part 15-B
<b>Thermal test</b>	2h @ 70°C passive
<b>Burn-in test</b>	30 minutes @ maximum RF power output

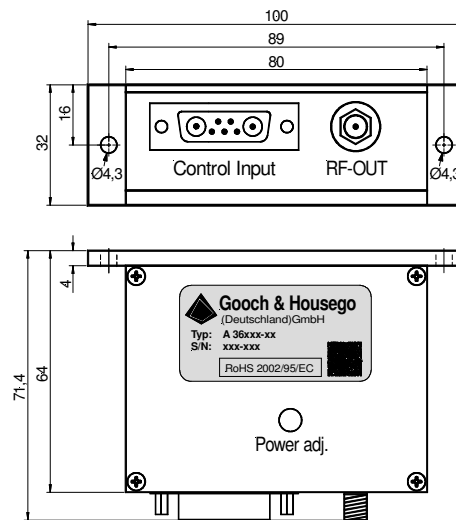
## Outline Drawings

Dimensions in mm

### Downsized Casing, Horizontal Mounting

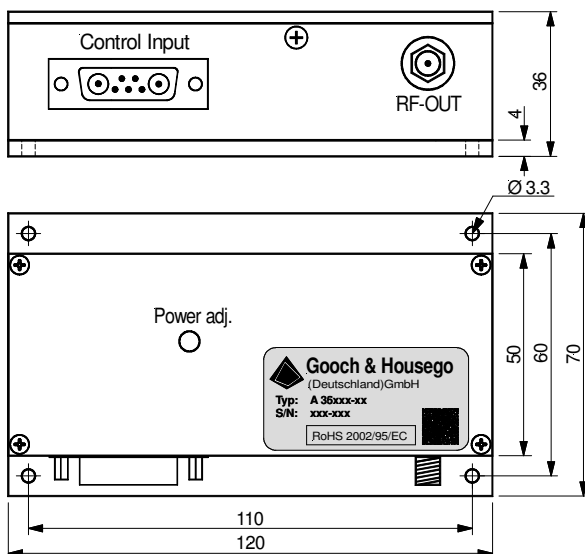


### Downsized Casing, Vertical Mounting

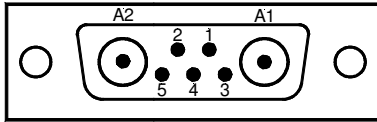


### Standard Casing

not recommended for new applications

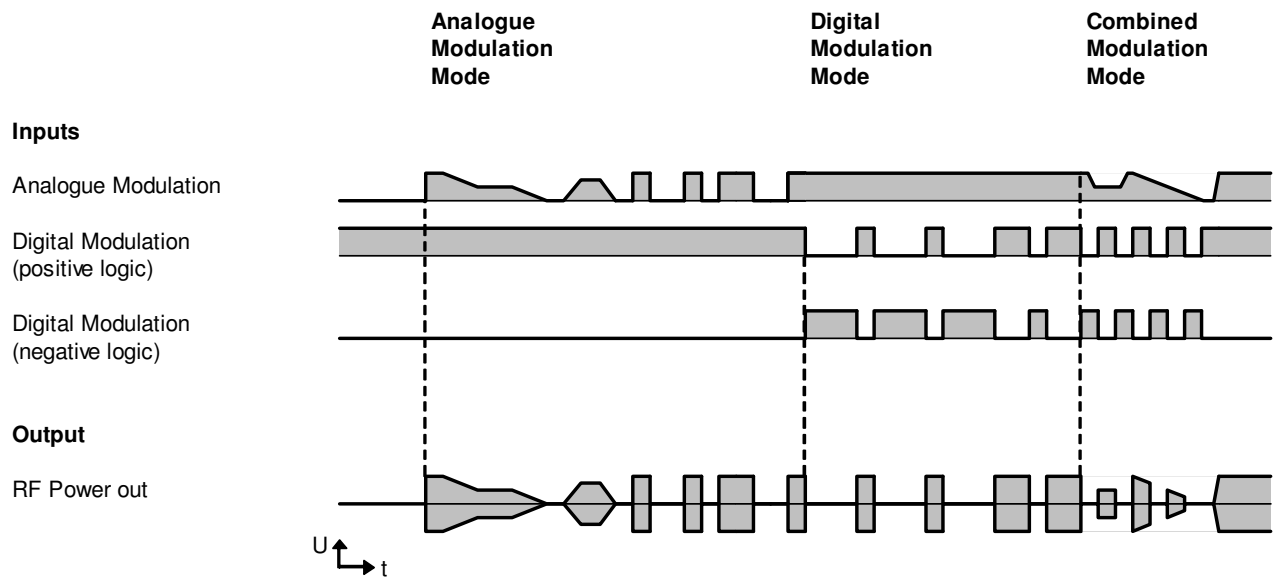


## Control Input



- 1, 2 GND (case) inside linked    A1 Analogue modulation
- 3, 5 +U<sub>s</sub> (24VDC) inside linked    A2 Digital modulation
- 4 not connected

## Operation Scheme of Analogue and Digital Modulation



## Variants List / Ordering Codes

**A36** [ ] - [ ] - [ ] - [ ]

Frequency Pre-Setting [MHz] ) <sup>1</sup>	Base Plate Footprint	Analogue Modulation Input ) <sup>2</sup> ) <sup>5</sup>		Digital Modulation Input ) <sup>3</sup> ) <sup>5</sup>	
		Voltage Range	Impedance	Logic	Impedance
040 . . . 350	H Downsized Horizontal 100 x 60 mm	1/50	0..1V	50Ω	p4k7u ) <sup>4</sup> positive 4.7kΩ pull-up
					p4k7d positive 4.7kΩ pull-down
	V Downsized Vertical 100 x 31 mm	5/50	0...5V	50Ω	p50d positive 50Ω pull-down
					n4k7u negative 4.7kΩ pull-up
	S Standard 120x70 mm <small>(not recommended for new applications)</small>	10/600	0...10V	600Ω	n4k7d ) <sup>4</sup> negative 4.7kΩ pull-down
					n50d ) <sup>4</sup> negative 50Ω pull-down

Remarks

- )<sup>1</sup> The frequency can be factory pre-set in a range from 40 to 350 MHz
- )<sup>2</sup> The voltage range corresponds to 0 to 100% of the potentiometer pre-adjusted maximum RF output power.
- )<sup>3</sup> A pull-up resistor provides HIGH level, a pull-down resistor LOW level in case of not connected input.
- )<sup>4</sup> These models can be put into operation with an open digital modulation input.
- )<sup>5</sup> Further configurations on request.

## Accessories

Connector Set  
for AOM Driver Series A35xxx and A36xxx

Part-No. 508A00169