

Ultrasonic Diffuse, Digital Output Types UA18CAD.....TI

CARLO GAVAZZI



- Cylindrical M18 PBT housing
- Sensing distance: 50-2200 mm
- Power supply: 15 to 30 VDC
- Outputs: Two multi function switching outputs. PNP or NPN, NO or NC
- Setup: Normal switching or adjustable hysteresis
- Repeatability 0.5%
- Beam angle. $\pm 7^\circ$ or $\pm 8^\circ$
- Protection: Short-circuit, reverse polarity and overvoltage
- Protection degree IP 67
- 2 m cable or M12 plug

Product Description

A self-contained multi function diffuse ultrasonic sensor with a sensing range of 50 to 2200 mm in three ranges. 2 switching outputs - easily set up for two different output modes and adjusted by teach-in - makes it ideal for level control tasks in a wide variety of vessels. A sturdy

one-piece polyester housing provides the perfect packaging for the sophisticated microprocessor controlled and digitally filtered sensor electronics. Excellent EMC performance and precision are typical features of this sensor on true distance measurement.

Ordering Key

UA18CAD04NPM1TI

Ultrasonic sensor	_____
Housing style	_____
Housing size	_____
Housing material	_____
Housing length	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Connection	_____
Teach-in	_____

Type Selection

Housing diameter	Connection	Rated operating dist. (S _n)	Digital output NPN/PNP	Ordering no.
M18	Plug M12	50-400 mm	2 x NPN	UA 18 CAD 04 NP M1 TI
M18	Cable	50-400 mm	2 x NPN	UA 18 CAD 04 NP TI
M18	Plug M12	50-400 mm	2 x PNP	UA 18 CAD 04 PP M1 TI
M18	Cable	50-400 mm	2 x PNP	UA 18 CAD 04 PP TI
M18	Plug M12	100-900 mm	2 x NPN	UA 18 CAD 09 NP M1 TI
M18	Cable	100-900 mm	2 x NPN	UA 18 CAD 09 NP TI
M18	Plug M12	100-900 mm	2 x PNP	UA 18 CAD 09 PP M1 TI
M18	Cable	100-900 mm	2 x PNP	UA 18 CAD 09 PP TI
M18	Plug M12	200-2200 mm	2 x NPN	UA 18 CAD 22 NP M1 TI
M18	Cable	200-2200 mm	2 x NPN	UA 18 CAD 22 NP TI
M18	Plug M12	200-2200 mm	2 x PNP	UA 18 CAD 22 PP M1 TI
M18	Cable	200-2200 mm	2 x PNP	UA 18 CAD 22 PP TI

Specifications

Rated operating distance (S _n)	Reference target: 1 mm metal rolled finish.	Repeatability	0.5%	
	CAD04: 100 x 100 mm		Beam angle	$\pm 8^\circ$ $\pm 7^\circ$ $\pm 7^\circ$
	CAD09 and CAD22: 200 x 200 mm		UA18CAD04...	
50 - 400 mm	UA18CAD09...			
UA18CAD04	100 - 900 mm	Sensitivity	P1 (farthest setpoint)	
UA18CAD09	200 - 2200 mm	Push-button	P2 (nearest setpoint)	
UA18CAD22		Temperature drift	$\leq 0.1\%/^\circ\text{C}$ @ -20° to $+60^\circ\text{C}$	
Blind zone		Temperature compensation	Yes	
UA18CAD04...	≤ 50 mm			
UA18CAD09...	≤ 100 mm			
UA18CAD22...	≤ 200 mm			

Specifications (cont.)

Hysteresis (H)	Min. 1%	Normal Switching function with N.O and N.C. output. Adjustable hysteresis Filling or emptying control
Rated operational voltage (U_B)	15 to 30 VDC (ripple included)	
Ripple (U_{rip})	≤ 5%	
No-load supply current (I_o)		
UA18CAD04...	≤ 45 mA @ U_B max	
UA18CAD09...	≤ 45 mA @ U_B max	
UA18CAD22...	≤ 50 mA @ U_B max	
Output current continuous (I_o)		
Max. load capacity 100 nF UL508 specification	≤ 500 mA ≤ 100 mA	
Output current short-time (I)		
Max. load capacity 100 nF UL508 specification	≤ 500 mA ≤ 100 mA	
Minimum operational current (I_m)	≤ 0.5 mA	
OFF-state current (I_r)	≤ 10 μ A	
Voltage drop (U_d)	≤ 2.2 VDC @ I_o max.	
Protection	Short-circuit, overvoltage and reverse polarity	
Carrier frequency		
UA18CAD04...	400 kHz	
UA18CAD09...	300 kHz	
UA18CAD22...	200 kHz	
Operating frequency (f)		
UA18CAD04...	≤ 10 Hz	
UA18CAD09...	≤ 4 Hz	
UA18CAD22...	≤ 1 Hz	
Response time OFF-ON (t_{ON})		
UA18CAD04...	≤ 50 mS	
UA18CAD09...	≤ 125 mS	
UA18CAD22...	≤ 500 mS	
Response time ON-OFF (t_{OFF})		
UA18CAD04...	≤ 50 mS	
UA18CAD09...	≤ 125 mS	
UA18CAD22...	≤ 500 mS	
Power ON delay	≤ 900 mS	
Output function, open collector		
By sensor type	NPN or PNP	
Output switching function	Two open collector transistor outputs to be configured as:	
Indication Output ON	Yellow LED	
Environment		
Installation category	III (IEC 60664/60664A; 60947-1)	
Pollution degree	3 (IEC 60664/60664A; 60947-1)	
Degree of protection	IP67 (IEC 60529; 60947-1)	
Ambient temperature		
Operating	-20° to +60°C (-4° to +140°F)	
Storage	-35° to +70°C (-31° to +140°F)	
Vibration	10 to 55 Hz, 1.0 mm/6g (IEC/EN 60068-2-6)	
Shock	30 g / 11 mS, 3 directions (IEC/EN 60068-2-27)	
Rated insulation voltage	< 500 VAC (rms)	
Housing		
Material body	PBT	
Material front	Epoxy-glass resin	
Material back, plug	Grilamid	
Material back, cable	Grilamid	
Material trimmer	POM	
Sealing around trimmer	TPE	
Material sealing front		
UA18CAD04...	TPE	
UA18CAD09...	TPE	
UA18CAD22...	PBT	
Connection		
Cable	PVC, grey, 2 m, 4 x 0.32 mm ² , \varnothing = 4.7 mm	
Plug	M12, 4-pin (CON. 14-series)	
Tightening torque	≤ 1 Nm	
Weight		
Cable version	98 g	
Plug version	35 g	
CE-marking	Yes	
Approvals	cULus (UL508)	