

Technical Datasheet



387 Series

ANALOGUE Pressure Transmitter

Model: 387

Key Features

- High Accuracy $\pm 0.15\%$
- Ranges from 1 bar to 1000 bar
- 4 : 1 turndown
- 4-20mA analogue
- 316 stainless steel investment cast enclosure
- NEMA 4X, IP66 weatherproof rating
- Stainless Steel, Monel and Hastelloy "Wetted Parts" options
- NACE MR-01-75 compatibility
- Compact, robust design
- All welded construction



Product applications

The 387 is suitable for a wide range of applications in many industry sectors:

- Oil & Gas
- Chemical
- Petrochemical
- Water
- Power

The choice of models available ensures that the 387 is suitable for use in:

- Corrosive atmospheres
- Resistant to chemical attack

Series Overview

- The model 387 has a compact, robust, all stainless steel construction making it particularly suited to the harsh corrosive environments of offshore applications
- The model 387 offers excellent accuracy of 0.15% of the upper range value, including combined effects of linearity, hysteresis and repeatability

Other related products:

- D23 SMART Pressure Transmitter



How can we help you?

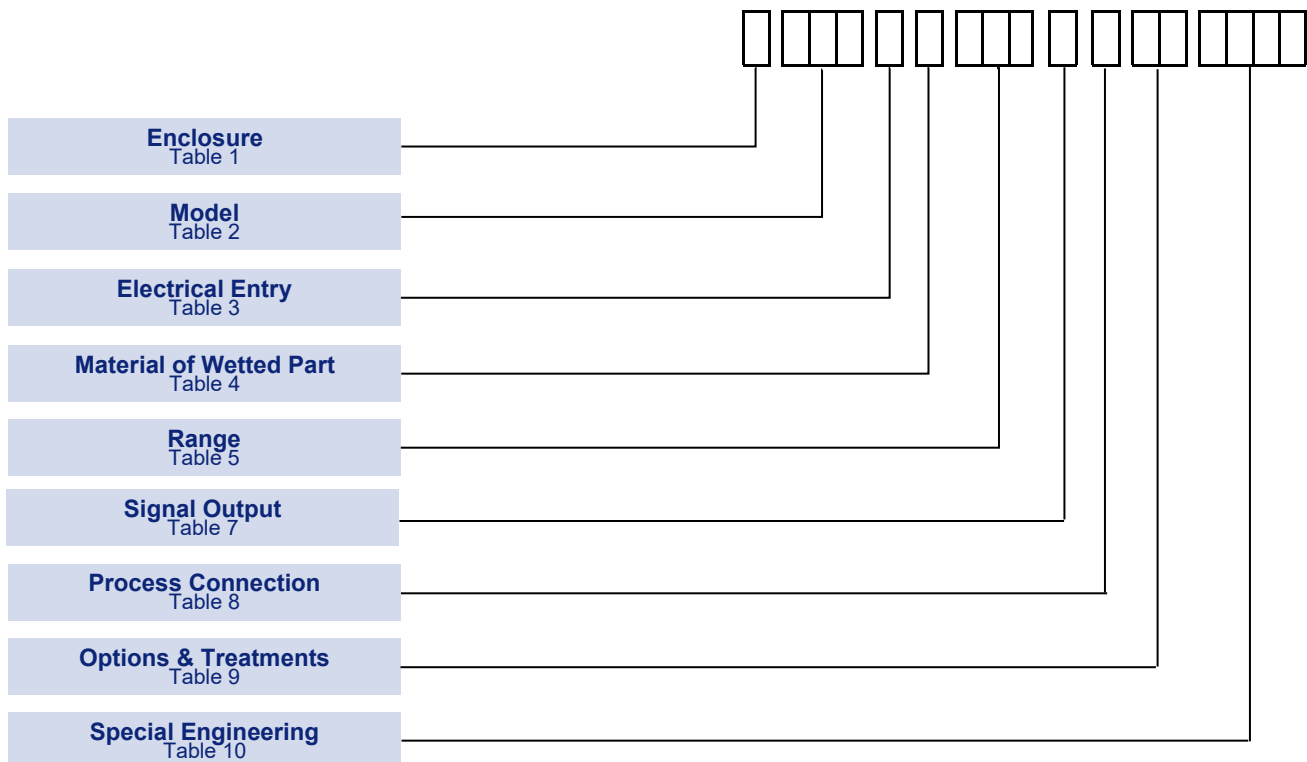
Delta Mobrey offers fast, efficient and knowledgeable support when and where you need it. Please visit our website at www.delta-mobrey.com to find your local support centre or call us on:

+44 (0) 1252 729140

Analogue Pressure Transmitter
Model: 387

How to order

Switches can be configured by selecting codes representing the desired features from the tables that follow. The chart below, describes how the model code is built up. For assistance in configuring a switch that best suits your needs, please contact your local sales office.



NOTE: Options shaded in the following tables are the most common options and are available on the quickest lead-times and at the lowest cost.

NOTE: Only the most common options are shown in this data sheet. Should you require a feature that is not shown, please contact your local sales office for further details.

Technical Specification

Accuracy:	For turndowns of 1:1 to 4:1 $\pm 0.15\%$ of span. Less than $\pm 0.15\%$ of URV*, including combined effects of linearity, hysteresis and repeatability
Temperature limits:	Process: -40 to +120°C (-40 to +240°F) Ambient: -20 to +85°C (-4 to +185°F) Compensated range: -20 to +85°C (-4 to +185°F) Ambient temperature drift: Less than $\pm 0.025\%$ of URL*, for every 1 deg C (1.8 deg F) change in ambient temperature.
Enclosure classification:	IP66 / NEMA 4X / Flameproof Ex d / Intrinsically safe Ex ia
Signal output:	4 to 20mA, 2-wire system. See Table 6.
Power supply:	12 to 38V DC at instrument terminals. Reverse polarity protected. Less than 0.01% per volt effect.
Long term stability:	Less than $\pm 0.15\%$ of URV*, including combined effects of linearity, hysteresis and repeatability
Vibration tolerance:	5g peak to peak sinusoidal at 5 to 200Hz.
Radio frequency interference effect:	Induced error shall not exceed $\pm 0.15\%$ of URL*, when tested to IEC 801-3 severity level 3 (10v/m) with cover closed)
Warm-up time:	250 milliseconds typical
Response time:	150 milliseconds typical
Adjustability:	Zero adjustment within $\pm 5\%$ off full range
Weight:	0.9kg.

Enclosure

FINISH

All enclosures are investment cast in 316 Stainless Steel and offer environmental protection to (NEMA TYPE 4X) IP66.

NOTE

Instruments subject to National or International approval may be limited in terms of options available. See notes adjacent to relevant tables.

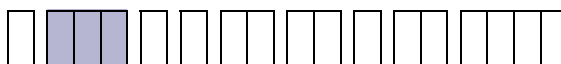
TABLE 1



ENCLOSURE TYPES	Code
Intrinsically Safe Enclosure (Zone 0)	
Intrinsically Safe to EN60079 & EN61241 Ga Ex ia IIC T4 (Tamb -20°C to +90°C), Ga Ex ia IIC T5 Ex iaD 20 T120 (Tamb -20°C to +90°C), Ex iaD 20 T90 	4
Flameproof Enclosure	
Flameproof to EN60079 & EN61241 Ex d IIC Ex tD A21 IP6X T85°C Ex d IIC Ex tD A21 IP6X T135°C (Tamb -20°C to +90°C) 	R
Weatherproof	
Weatherproof only IP66 / NEMA 4	A

Model

TABLE 2



	Code
Pressure transmitter.	387

Electrical Entry

M20 x 1.5 (ISO) and 1/2" NPT Internal threads available as standard. Other threads e.g. Pg 13.5, can be made available via adaptors.

TABLE 3



	Code
M20 x 1.5 Internal thread (standard)	1
1/2" NPT Internal thread	2

Material of Wetted Parts

Options T, U and C are all compatible with the requirements of NACE MR 01-75. Other factors in highly aggressive chemical environments may determine the final choice.

For Sour-gas and Crude applications, Code C offers the most cost effective solution.

Monel Code T is preferred for highly oxidising media, such as pure Oxygen and Chlorine.

TABLE 4



	Code
For liquids and gases. Welded 316 stainless steel sensor and process connection. Ranges 0 to 1 bar up to 0 to 6 bar.	R
For liquids and gases. Welded 17-4 PH or 15-5 PH sensor to 316 stainless steel process connection. Ranges 0 to 10 bar up to 0 to 1000 bar.	S
Welded nickel alloy (Monel) sensor and process connection. Ranges 0 to 10 bar up to 0 to 1000 bar (Suitable for NACE MR-01-75).	T
Welded Hastelloy C sensor and process connection. Ranges 0 to 10 bar up to 0 to 1000 bar. (Suitable for NACE MR-01-75).	U
Welded Hastelloy C sensor to annealed stainless steel process connection. Ranges 0 to 10 bar up to 0 to 1000 bar. (Suitable for NACE MR-01-75)	C

Setting Ranges

The values shown in this table are the UPPER RANGE LIMIT (URL); a 4:1 turndown facility enables full 4 to 20mA output to be obtained for a working span equal to 25% of URL.

Unless specified, the instruments are despatched with

LOWER RANGE VALUE (LRV) set to zero and

UPPER RANGE VALUE (URV) set to URL.

Medium Pressure

Material Code "R" only. (Table 4)

Accuracy $\pm 0.15\%$

Maximum working pressure (Pmax) 2 x URL.

Available on models 4387 and A387

*Intrinsically Safe and Flameproof only

High Pressure

Material Codes "S, T, U and C". (Table 4)

- Code S: Accuracy $\pm 0.15\%$
Maximum working pressure (Pmax) 2 x URL.
- Codes T, U and C: Accuracy $\pm 0.25\%$. Maximum working pressure (Pmax) 1.5 x URL.

*Subject to 1500 bar (22,500psi) maximum.

Available on models 4387, A387 and R387.

Signal Output

All 4-20mA.

Code M is only available with wetted part material codes C or U. Ref Table 4.

TABLE 5



Ranges shown are to gauge (i.e. atmospheric reference) absolute pressure is called up by amending the last character of the three character range code:

Bar/mbar absolute **A

Psi absolute **Q

If range settings are required which cannot be achieved within the adjustment range of zero and span controls, refer to special engineering

Table 5A

Bar	Code	PSI	Code
0 to 1	DAB	0 to 16	DAP
0 to 1.6	DBB	0 to 25	DBP
0 to 2	D2B	0 to 30	D2P
0 to 2.5	DCB	0 to 40	DCP
0 to 4	DDB	0 to 60	DDP
0 to 6	DEB	0 to 100	DEP

Table 5B

Bar	Code	PSI	Code
0 to 10	EAB	0 to 160	EAP
0 to 16	EBB	0 to 250	EBP
0 to 25	ECB	0 to 400	ECP
0 to 40	EDB	0 to 600	EDP
0 to 60	EEB	0 to 1000	EEP
0 to 100	FAB	0 to 1600	FAP
0 to 160	FBB	0 to 2500	FBP
0 to 250	FCB	0 to 4000	FCP
0 to 400	FDB	0 to 6000	FDP
0 to 600	FEB	0 to 10000	FEP
0 to 1000	GAB	0 to 15000	GAP

Note: Range codes GAB and GAP are only available with wetted parts codes 'S', 'U' and 'C' Ref. Table 4.

TABLE 6



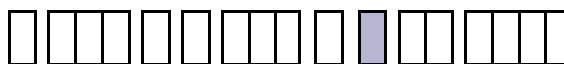
	Code
4 to 20mA, 2-wire system. 4mA equivalent to nominal zero input pressure. Span of unit adjustable so that 20mA may be equivalent to any pressure between 25% and 100% of Upper Range Limit. Maximum permitted voltage between circuit and case, 50V DC	6
4 to 20mA, 2-wire system. 4mA equivalent to nominal zero input pressure. Span of unit adjustable so that 20mA may be equivalent to any pressure between 25% and 100% of Upper Range Limit. Maximum test voltage between circuit and case, 500V AC.	M

Process Connection

Other thread specifications and sizes are available without using adaptors.

Adaptors are available for applications where their use is permitted.

TABLE 7



	Code
1/2" NPT Male external (standard)	J
G1/2"A to ISO 228 (1/2" BSP Parallel Male, spigotted)	N
High Pressure Cone and Thread (Autoclave) 9/16" UNF	V

NOTE: All 1/2" NPT process connections are limited to a maximum over range pressure of 1200 bar / 17,500 psi.

Options and Treatments

For requirements that fall outside the specifications listed above we will be pleased to advise on your particular application.

TABLE 8



	Code
Panel Mounting Clamp in Stainless Steel	APPLY FOR DETAILS
Pipe Mounting Clamp in Stainless Steel	
Approved IS Indicator in Hazardous Area	
Instrument Valves	SPECIFY IN FULL
Chemical Seal (Remote or direct)	
Oxygen Service 2: Process (wetted) parts are cleaned for oxygen.	04
Tagging – Variety of tagging methods are available	APPLY FOR DETAILS
Applies when no option is required and selection is made from SPECIAL ENGINEERING	00

Special Engineering

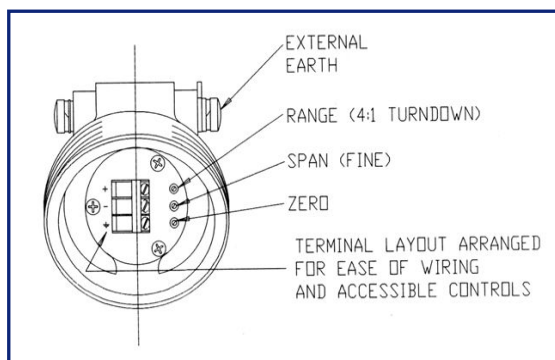
To your individual requirements, where specified. For your convenience, enter your special listing in space provided.

TABLE 9



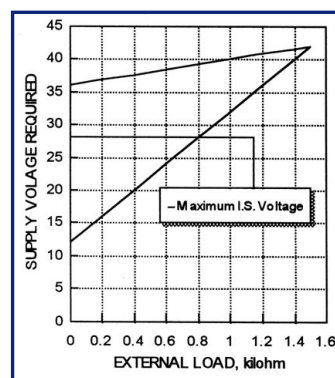
FEATURE	Code
Please consult Delta sales engineering for special requirements.	TBA

Special Engineering



WIRING AND ADJUSTMENT

Voltage to be within triangular area



VOLTAGE v LOAD

Approvals

EUROPEAN DIRECTIVES



Electromagnetic Compatibility Directive (EMC) 2014/30/EU

Compliant to EMC directive

Pressure Equipment Directive (PED) 97/23/EC:

This product has a process connection size $\leq$ DN25 and is therefore categorised as sound engineering practice under Cat 3.3

ATEX APPROVALS



Intrinsically Safe:

Certificate No. ITS03ATEX21062X - EN60079 & EN61241

For Zone 0 models (**Enclosure code 4**, see Table 1)



II 1 Ga Ex ia IIC T4 (Tamb -20°C to +90°C)
Ex ia IIC T5



II 2 G Ex iaD 20 T120 IIC T6 (Tamb -20°C to +80°C) Gb
Ex iaD 20 T90

Flameproof:

Certificate No. BAS02ATEX2191 - EN60079 & EN50018

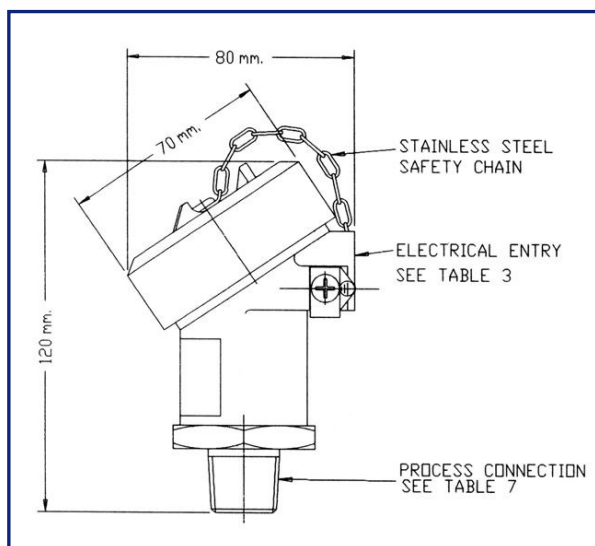
For Zone 1 models (**Enclosure code R**, see Table 1)



II 2 GD Ex d IIC Ex tD A21 IP6X T85°C
Ex d IIC Ex tD A21 IP6X T135°C (Tamb -20°C to + 90°C)

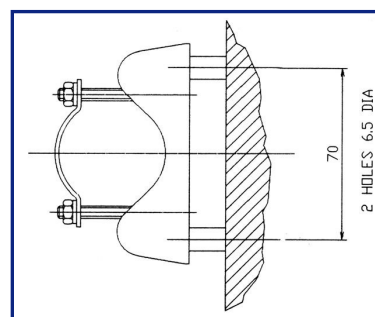
Dimensions

OUTLINE



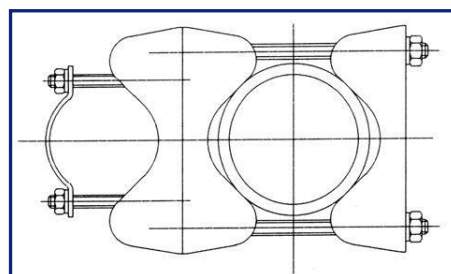
ALL DIMENSIONS mm (Inches) WEIGHT: 900g approx

WALL MOUNTING BRACKET



100g approx

PIPE MOUNTING BRACKET



250g approx

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