

ECHOTEL®

MODELS 915-P / 915-W

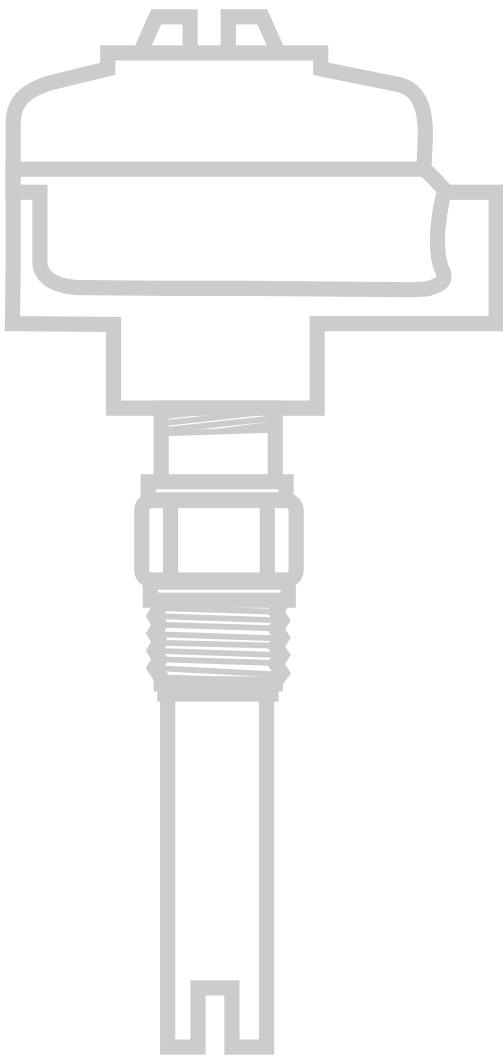


Installation and Operating Manual

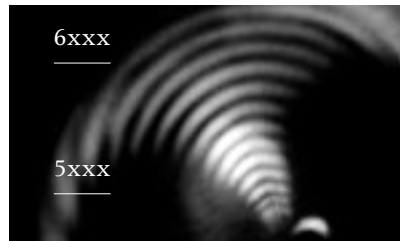
Ultrasonic

Contact

Level Switch

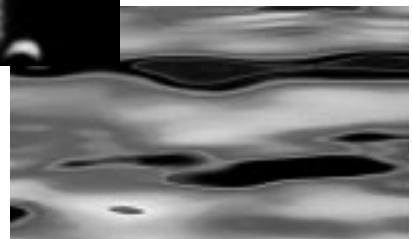


7xxx



6xxx

5xxx



4xxx

3xxx

2xxx

1xxx



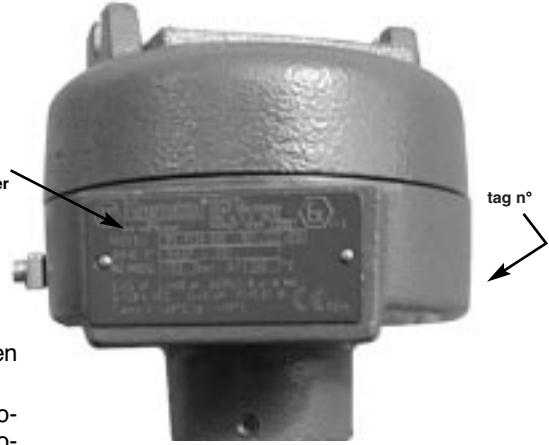
Magnetrol®

UNPACKING

Unpack the instrument carefully. Make sure all components have been removed from the foam protection. Inspect all components for damage. Report any concealed damage to the carrier within 24 hours. Check the contents of the carton/crates against the packing slip and report any discrepancies to Magnetrol. Check the nameplate model number (Model number/approvals as per inserted separate sheet) to be sure it agrees with the packing slip and purchase order. Check and record the serial number for future reference when ordering parts.

Nameplate:
- part number
- serial n°

tag n°

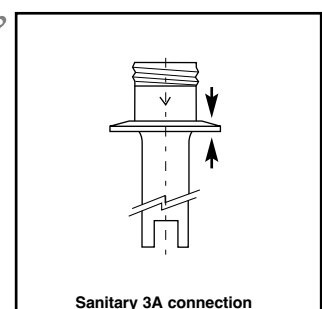
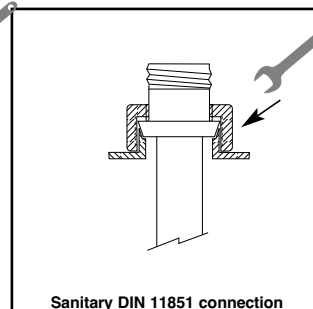
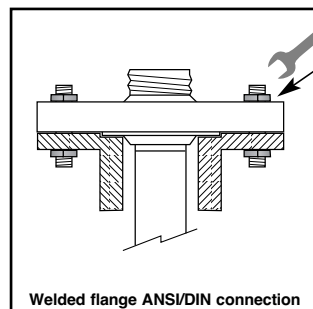
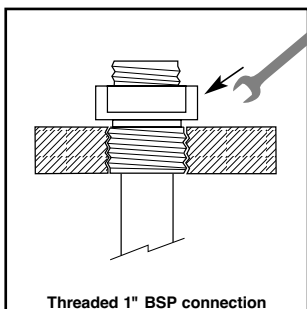
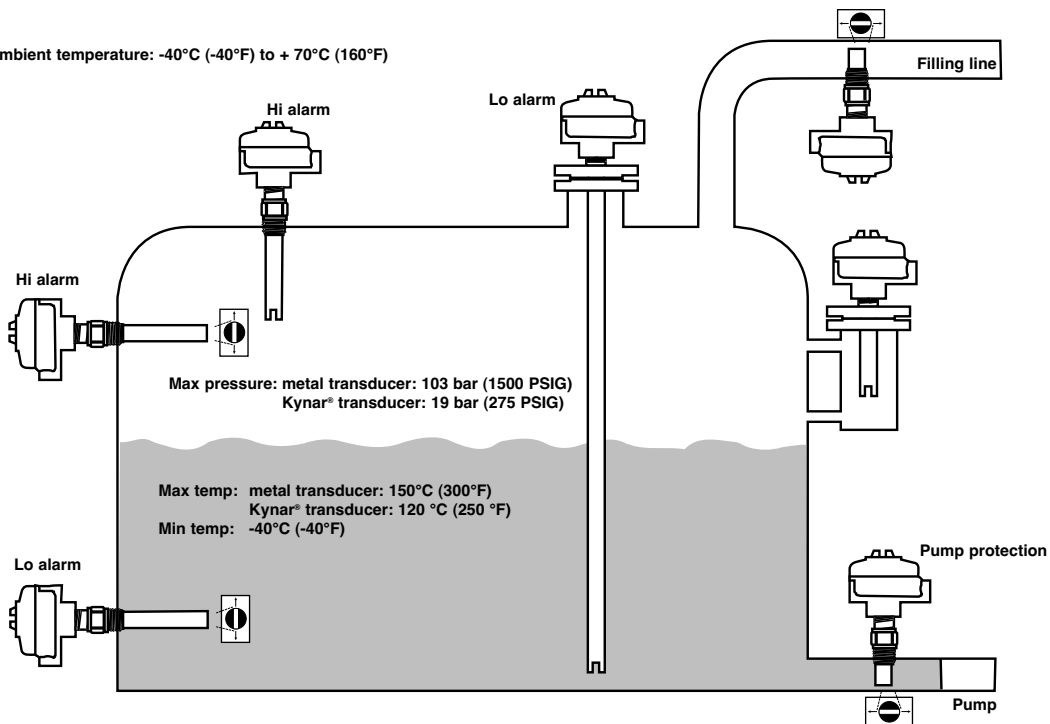


These units are in compliance with:

1. The EMC directive 89/336/EEC. The units have been tested to EN 61000-6-4 & EN 61000-6-2.
2. Directive 94/9/EC (ATEX 95A) for equipment or protective system intended for use in potentially explosive atmospheres. EC-type examination certificate number ISSeP00ATEX008X (915-P only) - intrinsically safe and ISSeP03ATEX100 (915-P only) - explosion proof.

MOUNTING

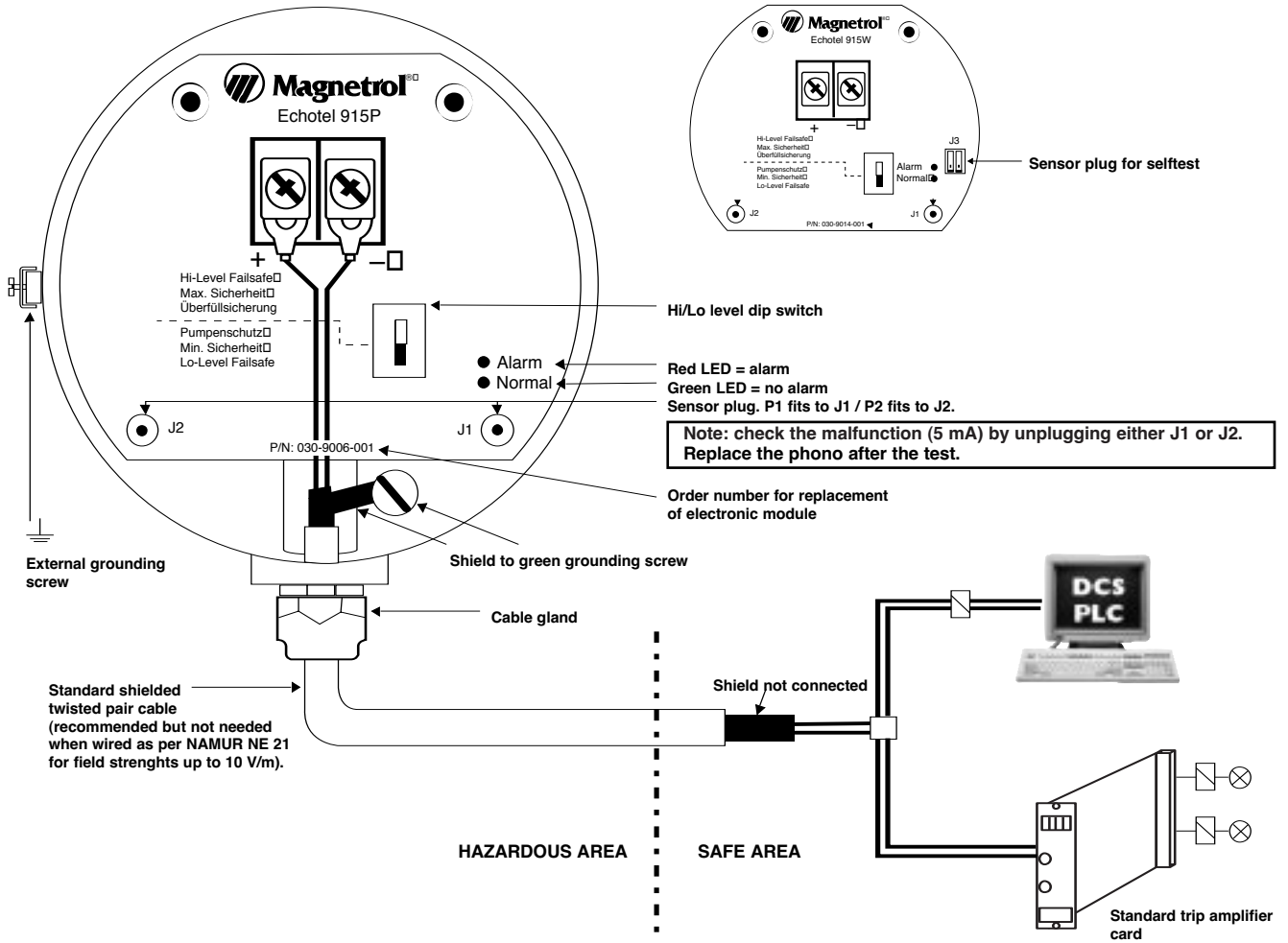
Ambient temperature: -40°C (-40°F) to +70°C (160°F)



WIRING

Echotel® 915-P electronics

Echotel® 915-W electronics



Important: Connect the unit to the ground for avoiding earth potential drifts. Use either the external or internal grounding screw or both.

FAILSAFE – ALARM STATUS

Mode	Level	Output signal	LED indication	
			green (safe mode)	red (alarm mode)
High level failsafe		16 mA ± 1 mA		
		8 mA ± 1 mA		
Low level failsafe		16 mA ± 1 mA		
		8 mA ± 1 mA		

= lit (on)

= unlit (off)

SPECIFICATIONS

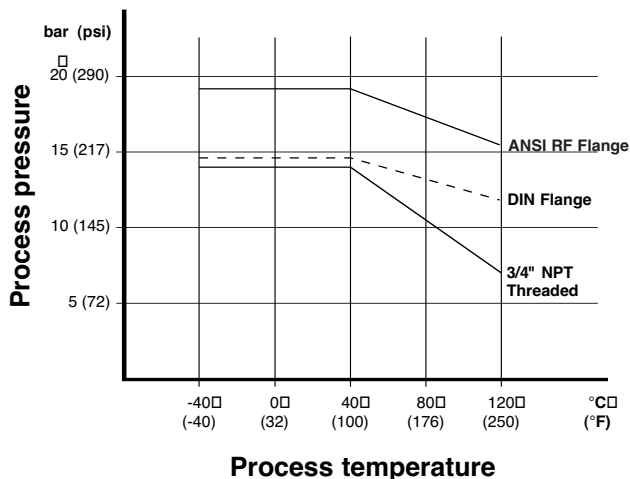
PHYSICAL/FUNCTIONAL SPECIFICATIONS

Description		Specification
Input Voltage		10-35 V DC (24 V DC) – 2 wire loop powered
Power Consumption		1 Watt maximum
Signal Output	Normal operation	16 mA ± 1 mA
	Alarm	8 mA ± 1 mA
	Malfunction	5 mA ± 1 mA
Indication	Normal operation	Green LED on
	Alarm	Red LED on
	Malfunction	No LED's on
Housing material		IP65, cast aluminium or stainless steel
Approvals	ATEX (metal transducers)	II 1 G EEx ia II C T6, intrinsically safe - ambient temp. up to +55 °C (+130 °F) II 1 G EEx ia II C T5, intrinsically safe - ambient temp. up to +70 °C (+160 °F) II 1/2 G EEx d II C T6, explosion proof
	FM/CSA	Non incendive, intrinsically safe and explosion proof
	Overfill Prevention	TÜV - WHG § 19 / VLAREM II 5.17.7
SIL (Safety Integrity Level)		Functional safety to SIL 2 loops / SIL 3 loops (redundant installation) – full FMEDA report by Exida available
Electrical data		U _i = 28,4 V, I _i = 94 mA, P _i = 0,67 W
Equivalent data		C _i = 25 nF, L _i = 400 µH
Shock/Vibration		ANSI/ISA-dS71.03 SA1 (shock), ANSI/ISA-dS71.03 VC2 (vibration)
Net Weight		1,6 kg / 3.5 lbs (unit with 50 mm SST transducer)

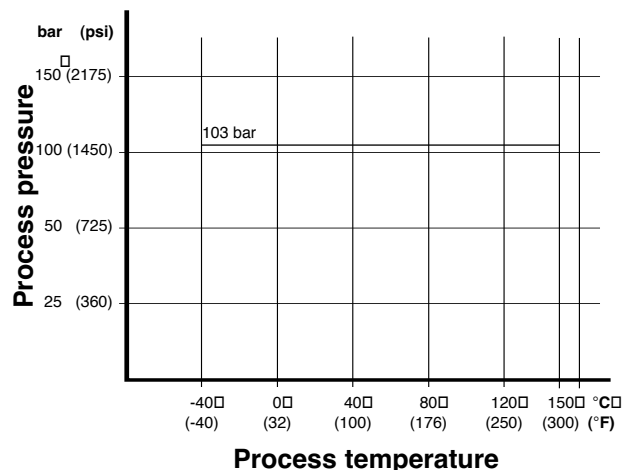
TRANSDUCERS SPECIFICATIONS

Description	9W1 transducers (plastic)	9D1 transducers (metal)
Transducer materials	Kynar® (PVDF)	316/316L SST (1.4401/1.4404) Hastelloy® C (2.4819) Monel® (2.4360)
Mounting	Threaded (NPT) – Flanged (ANSI - EN/DIN)	
Actuation length	From 40 mm up to 3300 mm (2" up to 130")	From 30 mm up to 3300 mm (1" up to 130")
Max process temp.	-40 °C up to 120 °C (-40 °F up to 250 °F)	-40 °C up to 150 °C (-40 °F up to 300 °F)
Max pressure	19 bar @ 40 °C (275 psi @ 100 °F)	103 bar @ 150 °C (1500 psi up to 300 °F)
	Flanged models are downrated to the design pressure of the selected flange	
Max viscosity	10.000 cP	

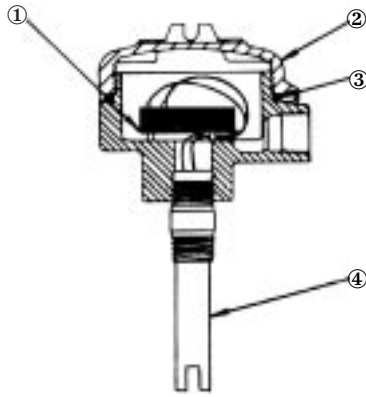
PRESSURE/TEMPERATURE RATING FOR 9W1 TRANSDUCERS (PLASTIC)



PRESSURE/TEMPERATURE RATING FOR 9D1 TRANSDUCERS (METAL)



REPLACEMENT PARTS



No.	Description	Part Number
1	PC board 915-P22A-0X0	030-9006-001
	915-P32A-0X0	030-9006-002
	915-W22A-0X0	030-9014-001
2	Cover EEx i	04-9105-001
	Cover EEx d	04-9105-005
3	O-Ring	12-2101-345
4	Transducer	Consult part number description (see page 6)

TROUBLESHOOTING

Symptom	Solution
No signal with level change.	<p>Check wiring. A minimum of 10 V DC must be at the terminal block.</p> <p>Make sure liquid is filling the transducer gap.</p> <p>Check for dense foam on surface or dried product in the gap. Unit will not function properly if either condition exists.</p>
No change in loop current between wet gap or dry gap.	<p>Check to see if transducer gap is plugged with solids.</p> <p>Check for dense foam in gap.</p>
Output current at 0 mA.	Check wiring to make sure input voltage is between 10 - 35 V DC.

MODEL IDENTIFICATION

A complete measuring system consists of:

- One order code for electronics
- One order code for transducer

- Code for Echotel 915 – electronics**
2-wire, 24 V DC potted electronics with 8 or 16 mA output
5 mA error signal

SENSOR MATERIAL

9 1 5 – W 2 2 A	Echotel 915W electronics for Kynar® (PVDF) transducer
9 1 5 – P 2 2 A	Echotel 915P electronics for 316/316L (1.4401/1.4404) SST transducer
9 1 5 – P 3 2 A	Echotel 915P electronics for Hastelloy C (2.4819) and Monel (2.4360) transducers

HOUSING / CABLE / SAFETY APPROVAL – IP65 / WHG § 19

5	Aluminium,	M20 x 1.5	general purpose and ATEX intrinsically safe
6	Aluminium,	PG 13.5	general purpose and ATEX intrinsically safe
7	Aluminium,	PG 16	general purpose and ATEX intrinsically safe
I	Aluminium,	3/4" NPT	general purpose and ATEX intrinsically safe
Y	316 stainless steel,	3/4" NPT	general purpose and ATEX intrinsically safe

HOUSING / CABLE / SAFETY APPROVAL – IP65 / WHG § 19

T	Aluminium,	M20 x 1.5	ATEX explosion proof
M	Aluminium,	PG 13.5	ATEX explosion proof
Z	Aluminium,	PG 16	ATEX explosion proof
K	Aluminium,	3/4" NPT	ATEX explosion proof

9 1 5 — 2 A — 0 0 complete code for Echotel 915 electronics

MODEL IDENTIFICATION

2. Code for Echotel 915 transducer

BASIC MODEL NUMBER

9 W 1	Echotel 915-W – Kynar® transducers
9 D 1	Echotel 915-P – metal transducers

PROCESS CONNECTION

Threaded

1	Threaded 3/4" NPT connection
2	Threaded 1" NPT connection
9	Threaded 1" BSP (G1) connection (minimum length transducer = 50 mm (2"))

ANSI RF Flanges

B	1"	150 lbs - Raised Face
C	1 1/2"	150 lbs - Raised Face
D	2"	150 lbs - Raised Face
E	1"	300 lbs - Raised Face
F	1 1/2"	300 lbs - Raised Face
G	2"	300 lbs - Raised Face
H	1"	600 lbs - Raised Face
J	2"	600 lbs - Raised Face

DIN Flanges

K	DN 25/PN 16,	EN 1092-1 Type A
L	DN 40/PN 16,	EN 1092-1 Type A
M	DN 50/PN 16,	EN 1092-1 Type A
N	DN 25/PN 25,	EN 1092-1 Type A
P	DN 40/PN 25,	EN 1092-1 Type A
Q	DN 50/PN 25,	EN 1092-1 Type A
R	DN 25/PN 40,	EN 1092-1 Type A
S	DN 40/PN 40,	EN 1092-1 Type A
T	DN 50/PN 40,	EN 1092-1 Type A
U	DN 25/PN 63,	EN 1092-1 Type B2
V	DN 40/PN 63,	EN 1092-1 Type B2
W	DN 50/PN 63,	EN 1092-1 Type B2
X	DN 25/PN 100,	EN 1092-1 Type B2
Y	DN 40/PN 100,	EN 1092-1 Type B2
Z	DN 50/PN 100,	EN 1092-1 Type B2

SANITARY Flanges

3	1 1/2"	(3 A approved - not for WHG § 19)
4	2"	(3 A approved - not for WHG § 19)
5	DN 25,	DIN 11851
6	DN 32,	DIN 11851
7	DN 40,	DIN 11851
8	DN 50,	DIN 11851

TRANSDUCER MATERIALS

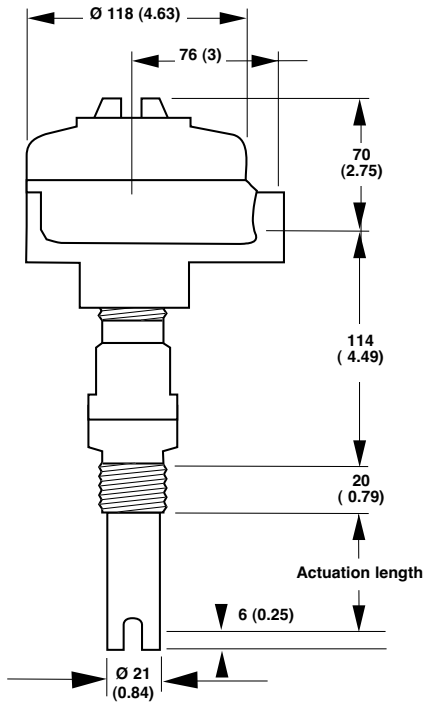
K K M	Kynar (PVDF)
2 2 1	316/316L - 1.4401/1.4404
M M 1	Monel - 2.4360
H C 1	Hastelloy C - 2.4819

ACTUATION LENGTH – specify in cm (per 0.39") increments
 Total insertion length = actuation length + 6 mm (0.25")

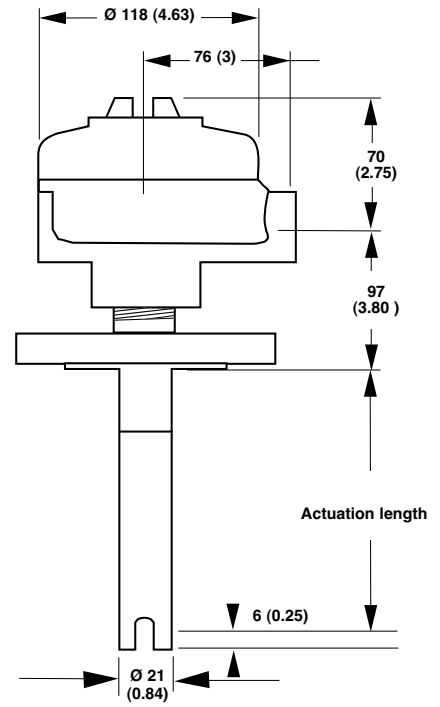
0 0 3	30 mm - min actuation length
3 3 0	3300 mm - maximum actuation length

9 D 1 complete code for Echotel 915 transducers

DIMENSIONS IN mm (inches) – ECHOTEL® 915-W

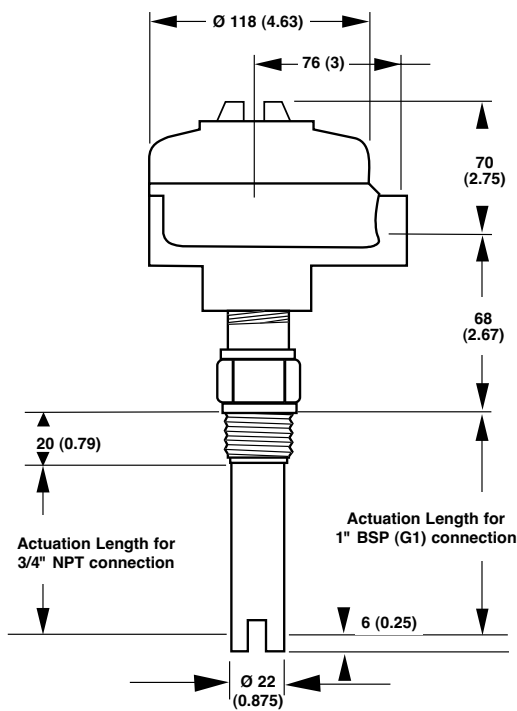


Threaded unit

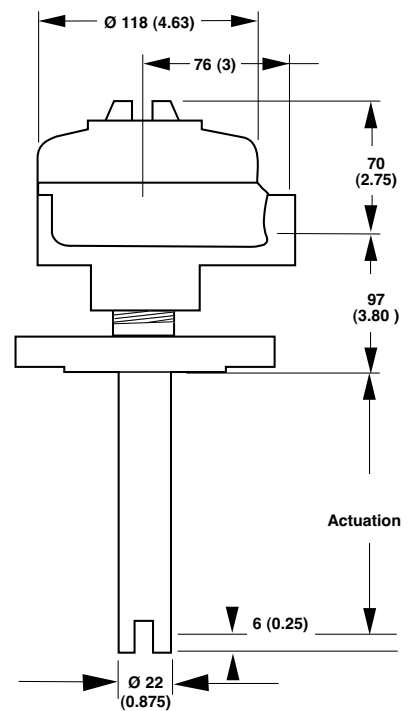


Flanged unit

DIMENSIONS IN mm (inches) – ECHOTEL® 915-P



Threaded unit



Flanged unit

IMPORTANT

SERVICE POLICY

Owners of Magnetrol products may request the return of a control; or, any part of a control for complete rebuilding or replacement. They will be rebuilt or replaced promptly. Magnetrol International will repair or replace the control, at no cost to the purchaser, (or owner) **other than transportation cost** if:

- a. Returned within the warranty period; and,
- b. The factory inspection finds the cause of the malfunction to be defective material or workmanship.

If the trouble is the result of conditions beyond our control; or, is **NOT** covered by the warranty, there will be charges for labour and the parts required to rebuild or replace the equipment.

In some cases, it may be expedient to ship replacement parts; or, in extreme cases a complete new control, to replace the original equipment before it is returned. If this is desired, notify the factory of both the model and serial numbers of the control to be replaced. In such cases, credit for the materials returned, will be determined on the basis of the applicability of our warranty.

No claims for misapplication, labour, direct or consequential damage will be allowed.

RETURNED MATERIAL PROCEDURE

So that we may efficiently process any materials that are returned, it is essential that a "Return Material Authorisation" (RMA) form will be obtained from the factory. It is mandatory that this form will be attached to each material returned. This form is available through Magnetrol's local representative or by contacting the factory. Please supply the following information:

1. Purchaser Name
2. Description of Material
3. Serial Number and Ref Number
4. Desired Action
5. Reason for Return
6. Process details

All shipments returned to the factory must be by prepaid transportation. Magnetrol **will not accept** collect shipments. All replacements will be shipped FOB factory.

BULLETIN N°: BE 51-635.5
EFFECTIVE: MAY 2005
SUPERSEDES: October 2003

UNDER RESERVE OF MODIFICATIONS



www.magnetrol.com

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