

EZ Modulevel®

Displacer operated level transmitter

DESCRIPTION

EZ Modulevel are electronic 24 V DC, loop powered level transmitters utilizing Magnetrol's buoyancy principle to detect and convert liquid level changes into a stable 4-20 mA output signal.

The linkage between the level sensing element and output electronics greatly simplifies mechanical design and construction. The in-line vertical design of the transmitter reduces instrument weight and the effects of process vibration on electronic circuitry components while simplifying installation.

FEATURES

- Operation functions include:
 - interface measurement and detection
 - continuous level measurement
 - density measurement
- Easy bench calibration via Hart® terminal, AMS® protocol or PACTware®
 - full calibration (dry set point, 4-20 mA by %)
 - setting of Specific Gravity
 - signal damping
 - error signal.
- Two-wire, intrinsically safe loop powered level transmitter.
- 360° rotatable housing can be dismantled without depressurizing the vessel.
- Integral or remote electronics.
- Special options, materials and custom engineered features.
- Suited for SIL 1 and SIL 2 loops (full FMEDA report available).



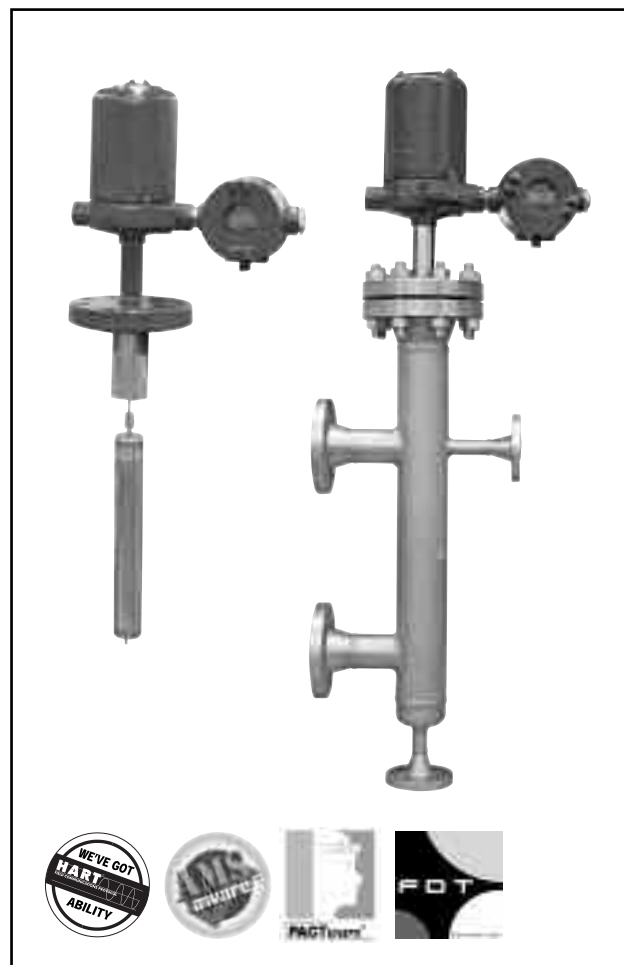
APPLICATIONS

MEDIA: liquids with a S.G. as low as 0,23 up to 2,2 and interfaces with a density difference of minimum 0,10.

VESSELS: most process vessels up to 315 °C (600 °F) process temperature and pressures up to 355 bar (5150 psi) or storage vessels e.g:

- feedwater heaters
- condensate Drip Pots
- scrubbers
- separators
- receivers
- flash tanks
- knock out drums
- boilers

For continuous level or liquid-liquid interface



AGENCY APPROVALS

Agency	Approval
ATEX ^①	II 1G EEx ia II C T6, intrinsically safe II 1/2G EEx d II C T6, explosion proof
FM/CSA ^②	Explosion proof and intrinsically safe
RosTech/FSTS GOST-K/GGTN-K ^①	Russian Authorisation Standards

^① Cast aluminium housing is available for intrinsically safe units only. Not valid for FM/CSA

^② Consult factory for proper partnumbers.

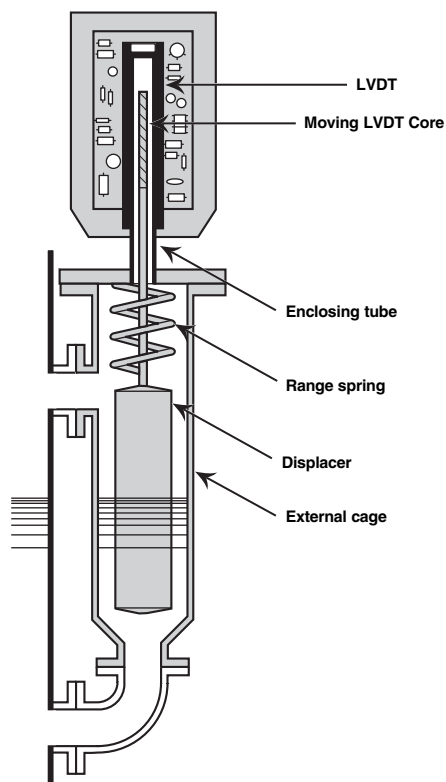
PRINCIPLE OF OPERATION

Liquid level change acts upon the range spring supported displacer causing vertical motion of a core within a linear variable differential transformer (LVDT).

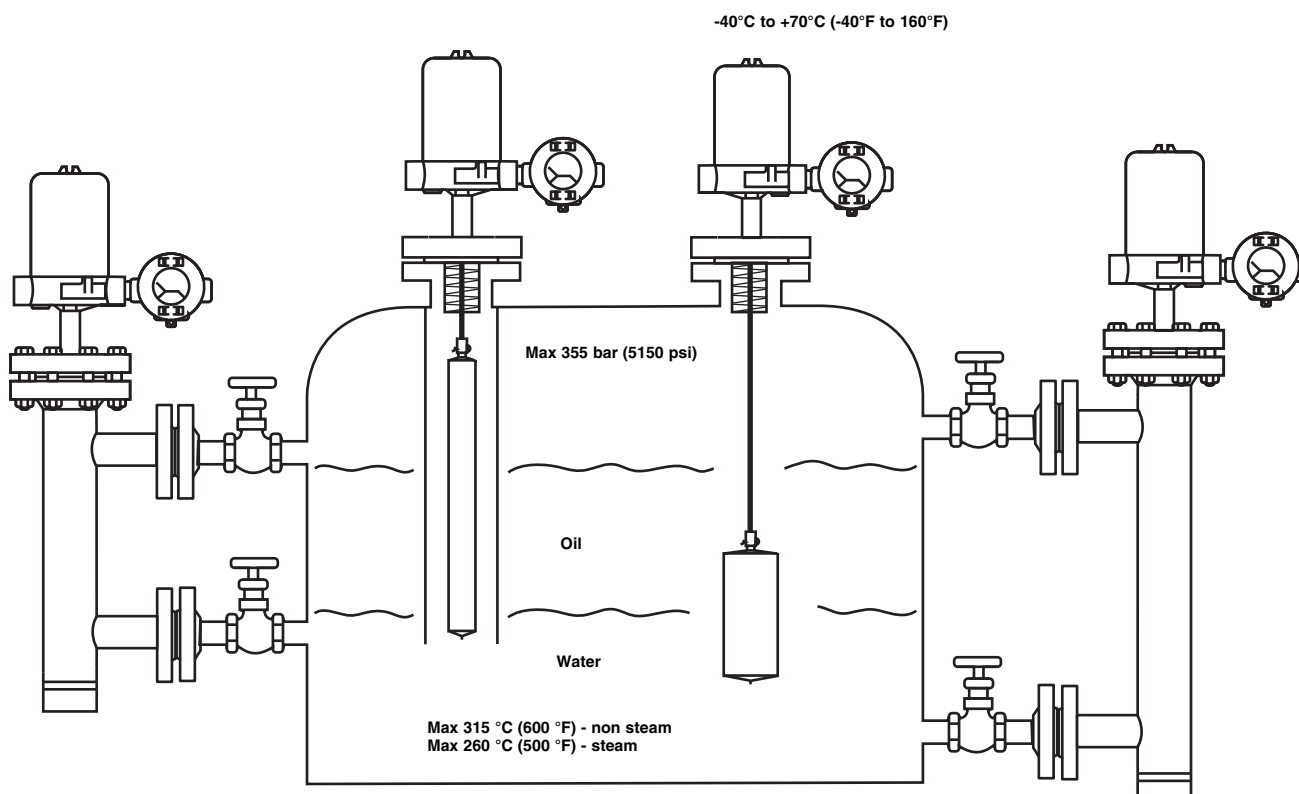
The enclosing tube acts as a static isolation barrier between the LVDT and the process media.

As core position changes with liquid level, voltages are induced in the secondary windings of the LVDT.

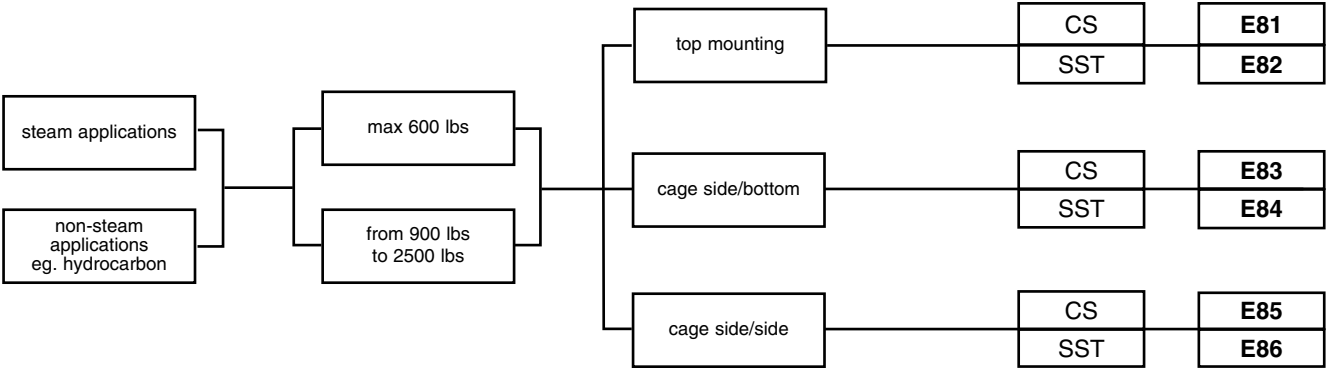
These signals are processed in the electronic circuitry and used to control the current in the 4-20 mA output current loop.



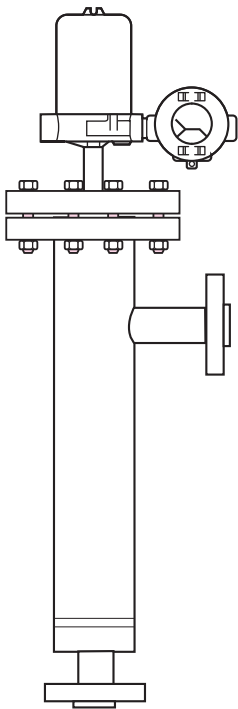
MOUNTING



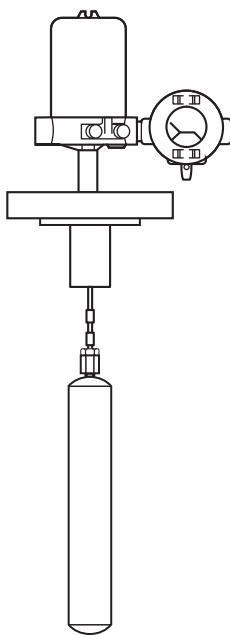
SELECTION DATA



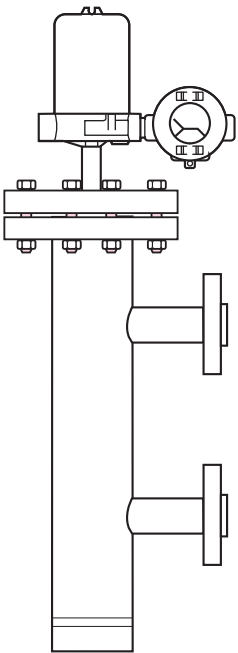
CONFIGURATIONS



E83/E84
Side/Bottom



E81/E82
Flanged Top



E85/E86
Side/Side

 EXPEDITE SHIP PLAN (ESP)

Several EZ Modulelevel devices are available for quick shipment, within max. 3 weeks after factory receipt of purchase order, through the Expedite Ship Plan (ESP).

Models covered by ESP service are conveniently grey coded in the selection data charts.

To take advantage of ESP, simply match the grey coded model number codes (standard dimensions apply).

ESP service may not apply to orders of ten units or more. Contact your local representative for lead times on larger volume orders, as well as other products and options.

SELECTION DATA - Options:

- 1 Adjustable displacer hanger for top mounted units, cable length 2,5 m (8'). Order code **032-3110-004** – required when distance between the top of the displacer and the flange face is > dimension **A** (see page 10 & 11) + 60 mm (2.36").
- 2 Calibraton stand for bench calibration, order code **031-6107-001**.
- 3 HAND HELD communicator, consult factory.

SELECTION DATA – non steam applications (max 600 lbs)

A complete measuring system consists of:

- One order code for a complete standard EZ Modulelevel® transmitter.
Order code for modified models/adders: put an "X" in front of the closest matching order code and specify the modification/adders separately.
e.g: XE85-KQ3A-ESD X = material certification EN 10204 / DIN 50049-3.1.B
Aluminium housing
- Options - see page 3

1. Order code for Standard EZ Modulelevel® transmitter – non steam applications

BASIC MODEL NUMBER

E 8 1	top mounted EZ Modulelevel	- Carbon steel construction
E 8 2	top mounted EZ Modulelevel	- Stainless steel construction
E 8 3	EZ Modulelevel with side/bottom cage	- Carbon steel construction
E 8 4	EZ Modulelevel with side/bottom cage	- Stainless steel construction
E 8 5	EZ Modulelevel with side/side cage	- Carbon steel construction
E 8 6	EZ Modulelevel with side/side cage	- Stainless steel construction

SPECIFIC GRAVITY AND PROCESS TEMPERATURE (consult factory for interface applications)

integral 150°C	integral 200°C	integral 230°C	integral 290°C	remote 315°C	mounting max. temp.
J	A	M	D	Q	0.23 - 0.54 specific gravity
K	B	N	E	R	0.55 - 1.09 specific gravity
L	C	P	F	T	1.10 - 2.20 specific gravity

PROCESS CONNECTION

a. For top mounted connection type

E81/E82 - ANSI HEAD Flange rating					E81/E82 - DIN / EN 1092-1 HEAD Flange rating				
150 lbs RF	300 lbs RF	600 lbs		Size	Type B1 PN 16	Type B1 PN 25/40	Type B2 PN 63	Type B2 PN 100	Size
		RF	RJ						
G3	G4	G5	G6	3"	EA	EB	ED	EE	DN 80
H3	H4	H5	H6	4"	FA	FB	FD	FE	DN 100
K3	K4	K5	K6	6"	GA	GB	GD	GE	DN 150

b. For external cage models

E83 ... E86 - ANSI Flange/Cage rating					E83 ... E86 - DIN / EN 1092-1 Flange rating				
150 lbs RF	300 lbs RF	600 lbs		Size	Type B1 PN 16	Type B1 PN 25/40	Type B2 PN 63	Type B2 PN 100	Size
		RF	RJ						
P3	P4	P5	P6	1 1/2" flanged	CA	CB	CD	CE	DN 40 flanged
Q3	Q4	Q5	Q6	2" flanged					
R3	R4	R5		1 1/2" NPT-F					
S3	S4	S5		2" NPT-F	DA	DB	DD	DE	DN 50 flanged
T3	T4	T5		1 1/2" S.W.					
U3	U4	U5		2" S.W.					

LEVEL RANGE

356 14	813 32	1219 48	1524 60	1829 72	2134 84	2438 96	2743 108	3048 120	mm inches
A	B	C	D	E	F	G	H	I	code

TRANSMITTER – ELECTRONICS

Standard codes apply for cast iron housing - use "X" description for stainless steel or cast aluminium housing

INTEGRAL MOUNT ELECTRONICS Max 290 °C (All except Q, R, T)			REMOTE ELECTRONICS Max 315 °C (Q, R or T)			24 V DC amplifier head Process Temperature (codes as per digit 4)	
Blind	with meter		Blind	with meter		Local meter	Output & Safety approvals
	Analog	Digital		Analog	Digital		
ESD	ESI	ESJ	RSQ	RST	RSZ	4 - 20 mA with HART®, intrinsically safe	
ESA	ESG	ES9	RSW	RSX	RS4	4 - 20 mA with HART®, explosion proof	
EZA	EZG	—	RZW	RZX	—	4 - 20 mA, explosion proof	

E 8

complete order code for EZ Modulelevel transmitter –
non steam applications

SELECTION DATA – steam applications (max 600 lbs)

A complete measuring system consists of:

- One order code for a complete standard EZ Modulelevel® transmitter.
Order code for modified models/adders: put an "X" in front of the closest matching order code and specify the modification/adders separately.
e.g: XE85-KQ3A-ESD X = material certification EN 10204 / DIN 50049-3.1.B
Aluminium housing
- Options - see page 3

1. Order code for Standard EZ Modulelevel® transmitter – steam applications

BASIC MODEL NUMBER

E 8 1	top mounted EZ Modulelevel	- Carbon steel construction
E 8 2	top mounted EZ Modulelevel	- Stainless steel construction
E 8 3	EZ Modulelevel with side/bottom cage	- Carbon steel construction
E 8 4	EZ Modulelevel with side/bottom cage	- Stainless steel construction
E 8 5	EZ Modulelevel with side/side cage	- Carbon steel construction
E 8 6	EZ Modulelevel with side/side cage	- Stainless steel construction

SPECIFIC GRAVITY AND PROCESS TEMPERATURE (consult factory for interface applications)

integral 150°C	integral 200°C	integral 230°C	remote 260°C	mounting max. temp.
J	A	M	Q	0.23 - 0.54 specific gravity
K	B	N	R	0.55 - 1.09 specific gravity
L	C	P	T	1.10 - 2.20 specific gravity

PROCESS CONNECTION

a. For top mounted connection type

E81/E82 - ANSI HEAD Flange rating					E81/E82 - DIN / EN 1092-1 HEAD Flange rating				
150 lbs RF	300 lbs RF	600 lbs		Size	Type B1 PN 16	Type B1 PN 25/40	Type B2 PN 63	Type B2 PN 100	Size
		RF	RJ						
G3	G4	G5	G6	3"	EA	EB	ED	EE	DN 80
H3	H4	H5	H6	4"	FA	FB	FD	FE	DN 100
K3	K4	K5	K6	6"	GA	GB	GD	GE	DN 150

b. For external cage models

E83 ... E86 - ANSI Flange/Cage rating					E83 ... E86 - DIN / EN 1092-1 Flange rating				
150 lbs RF	300 lbs RF	600 lbs		Size	Type B1 PN 16	Type B1 PN 25/40	Type B2 PN 63	Type B2 PN 100	Size
		RF	RJ						
P3	P4	P5	P6	1½" flanged	CA	CB	CD	CE	DN 40 flanged
Q3	Q4	Q5	Q6	2" flanged					
R3	R4	R5		1½" NPT-F					
S3	S4	S5		2" NPT-F	DA	DB	DD	DE	DN 50 flanged
T3	T4	T5		1½" S.W.					
U3	U4	U5		2" S.W.					

LEVEL RANGE

356 14	813 32	1219 48	1524 60	1829 72	2134 84	2438 96	2743 108	3048 120	mm inches
A	B	C	D	E	F	G	H	I	code

TRANSMITTER – ELECTRONICS

Standard codes apply for cast iron housing - use "X" description for stainless steel or cast aluminium housing

INTEGRAL MOUNT ELECTRONICS						REMOTE ELECTRONICS			24 V DC amplifier head	
Max +150 °C (J, K or L)			Max +230 °C (A, B, C, M, N or P)			Max +260 °C (Q, R or T)			Process Temperature (codes as per digit 4)	
Blind	with meter		Blind	with meter		Blind	with meter		Local meter	Output & Safety approvals
	Analog	Digital		Analog	Digital		Analog	Digital		
ESD	ESI	ESJ	ESH	ESK	ES8	RSQ	RST	RSZ	4 - 20 mA with HART®, intrinsically safe	
ESA	ESG	ES9	ESE	ESF	ES7	RSW	RSX	RS4	4 - 20 mA with HART®, explosion proof	
EZA	EZG	-	EZE	EZF	-	RZW	RZX	-	4 - 20 mA, explosion proof	

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complete order code for EZ Modulelevel transmitter – steam applications

SELECTION DATA – non steam applications (from 900 lbs to 2500 lbs)

A complete measuring system consists of:

- One order code for a complete standard EZ Modulelevel® transmitter.
Order code for modified models/adders: put an "X" in front of the closest matching order code and specify the modification/adders separately.
e.g: XE85-KQ8A-ESD X = Material certification EN 10204 / DIN 50049-3.1.B
Aluminium housing
- Options - see page 3

1. Order code for Standard EZ Modulelevel® transmitter – non steam applications / high pressure

BASIC MODEL NUMBER

E 8 1	top mounted EZ Modulelevel	- Carbon steel construction
E 8 2	top mounted EZ Modulelevel	- Stainless steel construction
E 8 3	EZ Modulelevel with side/bottom cage	- Carbon steel construction
E 8 4	EZ Modulelevel with side/bottom cage	- Stainless steel construction
E 8 5	EZ Modulelevel with side/side cage	- Carbon steel construction
E 8 6	EZ Modulelevel with side/side cage	- Stainless steel construction

SPECIFIC GRAVITY AND PROCESS TEMPERATURE (consult factory for interface applications)

integral 150°C	integral 200°C	integral 230°C	integral 290°C	remote 315°C	mounting max. temp.
K	B	N	E	R	0.55 - 1.09 specific gravity

PROCESS CONNECTION (for DIN flanges consult factory)

a. For top mounted connection type (E81, E82) - head flange rating

900lbs RJ	1500lbs RJ	2500lbs RJ	Type / size
G7	—	—	3" size
H7	H8	H9	4" size
K7	K8	K9	6" size

b. For external cage models (E83, ... E86) - ANSI rating

900lbs RJ	1500lbs RJ	2500lbs RJ	Flange rating / connection
P7	P8	P9	1 1/2" ANSI Flanges
Q7	Q8	Q9	2" ANSI Flanges
900lbs	1500lbs	2500lbs	Cage rating / connection
R7	R8	R9	1 1/2" NPT-F
S7	S8	S9	2" NPT-F
T7	T8	T9	1 1/2" Socket Weld
U7	U8	U9	2" Socket Weld

LEVEL RANGE (consult factory for longer level range)

356 14	813 32	1219 48	1524 60	mm inches
A	B	C	D	code

TRANSMITTER – ELECTRONICS

Standard codes apply for cast iron housing - use "X" description for stainless steel or cast aluminium housing

INTEGRAL MOUNT ELECTRONICS Max 290 °C (K, B, N or E)			REMOTE ELECTRONICS Max 315 °C (R only)			24 V DC amplifier head Process Temperature (codes as per digit 4)	
Blind	with meter		Blind	with meter		Local meter	Output & Safety approvals
	Analog	Digital		Analog	Digital		
ESD	ESI	ESJ	RSQ	RST	RSZ	4 - 20 mA with HART®, intrinsically safe	
ESA	ESG	ES9	RSW	RSX	RS4	4 - 20 mA with HART®, explosion proof	
EZA	EZG	—	RZW	RZX	—	4 - 20 mA, explosion proof	

E	8								
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complete order code for EZ Modulelevel transmitter –
non steam applications / high pressure

SELECTION DATA – steam applications (from 900 lbs to 2500 lbs)

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- One order code for a complete standard EZ Modulelevel® transmitter.
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e.g: XE85-KQ8A-ESD X = material certification EN 10204 / DIN 50049-3.1.B
Aluminium housing
- Options - see page 3

1. Order code for Standard EZ Modulelevel® transmitter – steam applications / high pressure

BASIC MODEL NUMBER

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E 8 4	EZ Modulelevel with side/bottom cage	- Stainless steel construction
E 8 5	EZ Modulelevel with side/side cage	- Carbon steel construction
E 8 6	EZ Modulelevel with side/side cage	- Stainless steel construction

SPECIFIC GRAVITY AND PROCESS TEMPERATURE (consult factory for interface applications)

integral 150° C	integral 200° C	integral 230° C	remote 260° C	mounting max. temp.
K	B	N	R	0.55 - 1.09 specific gravity

PROCESS CONNECTION (for DIN flanges consult factory)

a. For top mounted connection type (E81, E82) - head flange rating

900 lbs RJ	1500 lbs RJ	2500 lbs RJ	Type / size
G7	—	—	3" size
H7	H8	H9	4" size
K7	K8	K9	6" size

b. For external cage models (E83, ... E86) - ANSI rating

900 lbs RJ	1500 lbs RJ	2500 lbs RJ	Flange rating / connection
P7	P8	P9	1 1/2" ANSI Flanges
Q7	Q8	Q9	2" ANSI Flanges
900 lbs	1500 lbs	2500 lbs	Cage rating / connection
R7	R8	R9	1 1/2" NPT-F
S7	S8	S9	2" NPT-F
T7	T8	T9	1 1/2" Socket Weld
U7	U8	U9	2" Socket Weld

LEVEL RANGE (consult factory for longer level range)

356 14	813 32	1219 48	1524 60	mm inches
A	B	C	D	code

TRANSMITTER – ELECTRONICS

Standard codes apply for cast iron housing - use "X" description for stainless steel or cast aluminium housing

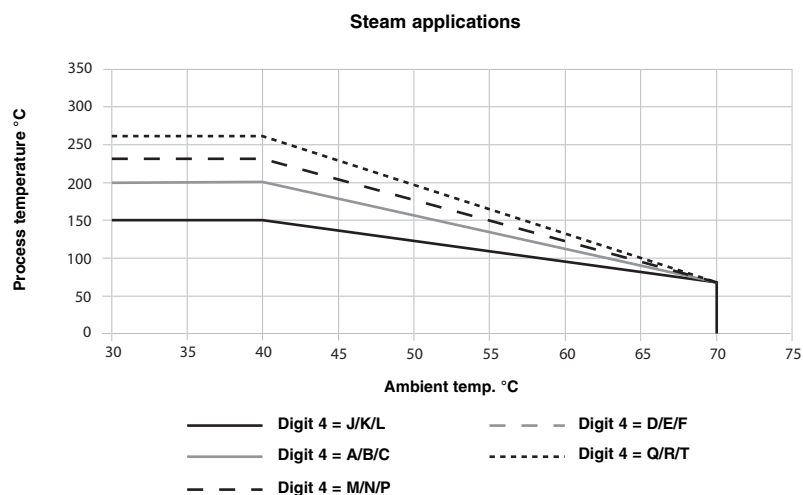
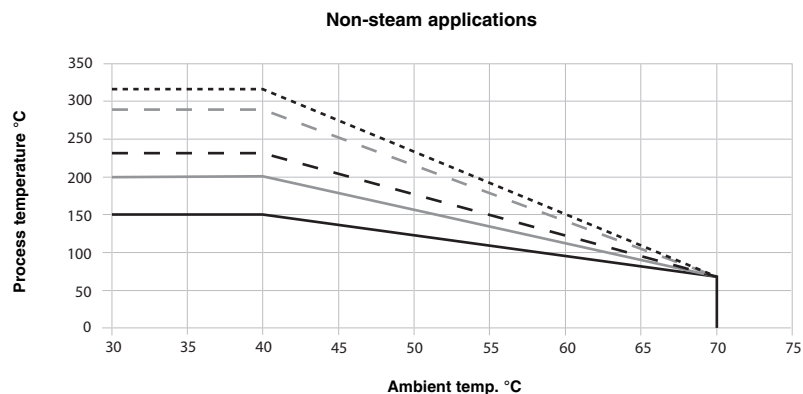
INTEGRAL MOUNT ELECTRONICS						REMOTE ELECTRONICS			24 V DC amplifier head	
Max +150 °C (K only)			Max +230 °C (B or N)			Max +260 °C (R only)			Process Temperature (codes as per digit 4)	
Blind	with meter		Blind	with meter		Blind	with meter		Local meter	Output & Safety approvals
	Analog	Digital		Analog	Digital		Analog	Digital		
ESD	ESI	ESJ	ESH	ESK	ES8	RSQ	RST	RSZ	4 - 20 mA with HART®, intrinsically safe	
ESA	ESG	ES9	ESE	ESF	ES7	RSW	RSX	RS4	4 - 20 mA with HART®, explosion proof	
EZA	EZG	—	EZE	EZF	—	RZW	RZX	—	4 - 20 mA, explosion proof	

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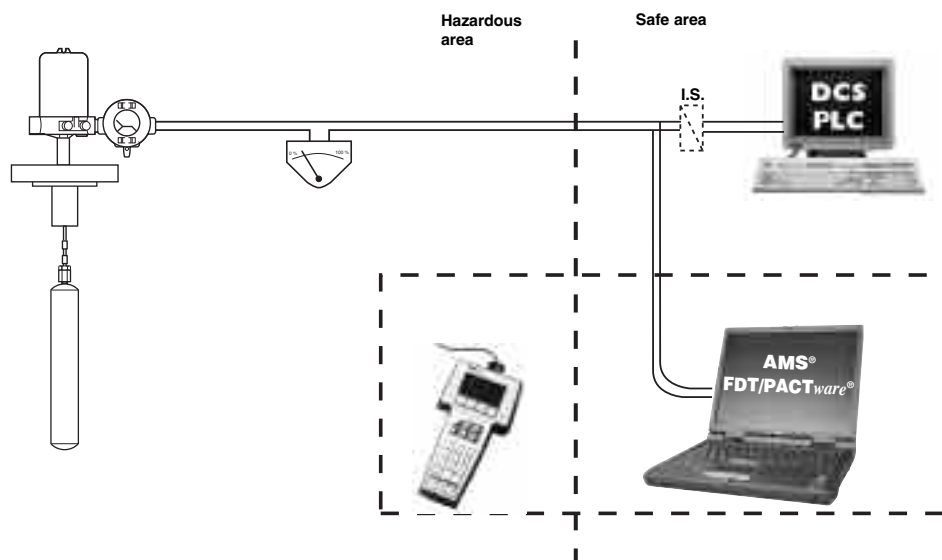
complete order code for EZ Modulelevel transmitter – steam applications / high pressure

OPERATING TEMPERATURES

The following charts lists combinations of process and ambient temperatures that should not be exceeded, with standard instruments



ELECTRICAL WIRING



PHYSICAL/ELECTRICAL SPECIFICATIONS

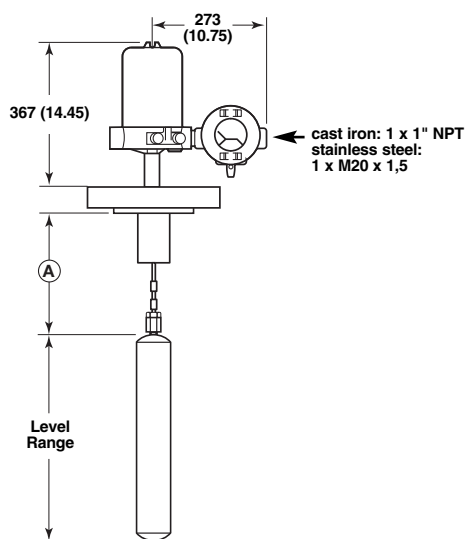
Description		EZ Modulelevel with Hart®	EZ Modulelevel without Hart®
Power (at terminals)		ATEX intrinsically safe: 12 to 28,4 V DC (@ 94 mA) ATEX explosion proof / Non Ex: 12 to 36 V DC	
Signal output		4 – 20 mA (direct / reverse action) 3,8 to 20,5 mA usable (meets NAMUR NE 43) with Hart® and AMS® supported	4 – 20 mA (direct / reverse action)
Span		356 mm up to 3048 mm (14" up to 120") (other ranges at request)	
Loop resistance		600 Ohm at 24 V DC Max 545 Ohm when used in combination with 22 mA error signal	480 Ohm at 24 V DC
Damping		0 to 60 s	none
Diagnostic alarm		3,6 mA or 22 mA	none
User interface		Zero/span and error LED's 3-button keypad and/or HART® / AMS® PACTware®	External explosion proof potentiometers for zero and span
Display		None (blind), or with local analog or digital meter	None (blind), or with analog meter
Housing material		IP 66, polyester coated cast iron - 1 x 1" NPT cable entry IP 66, stainless steel - 1 x M20 x 1,5 cable entry IP 66, polyester coated cast aluminium - 2 x M20 x 1,5 cable entries (one plugged off)	
Wetted materials	Spring	Inconel (other materials at request)	
	Displacer	316/316L SST (1.4401/1.4404) or 304 SST (1.4301)	
Cage materials		Carbon steel or 316/316L SST (1.4401/1.4404) (other materials at request)	
Approvals		ATEX II 1G EEx ia II C T6, intrinsically safe ATEX II 1/2G EEx d II C T6, explosion proof FM/CSA/SAA, explosion proof GOST-K/GGTN-K – RosTECH/FSTS: Russian Authorisation Standards LRS, Lloyds Register of Shipment (marine applications) Other approvals are available, consult factory	
SIL (Safety Integrity Level)		Functional safety to SIL 1 / SIL 2 in accordance to IEC 61508 - SFF 66,5 %. – full FMEDA reports and declaration sheets available at request.	
Electrical data		Ui = 28,4 V; Ii = 94 mA; Pi = 0,68 W	
Equivalent data		Ci = 5 nF; Li = 800 µH	
Net and gross weight		14 kg (31 lbs) (cast iron housing with meter) - integral unit 6,3 kg (13,80 lbs) (cast aluminium housing with meter) - integral unit 15 kg (33 lbs) (stainless steel housing with meter) - integral unit	

PERFORMANCE

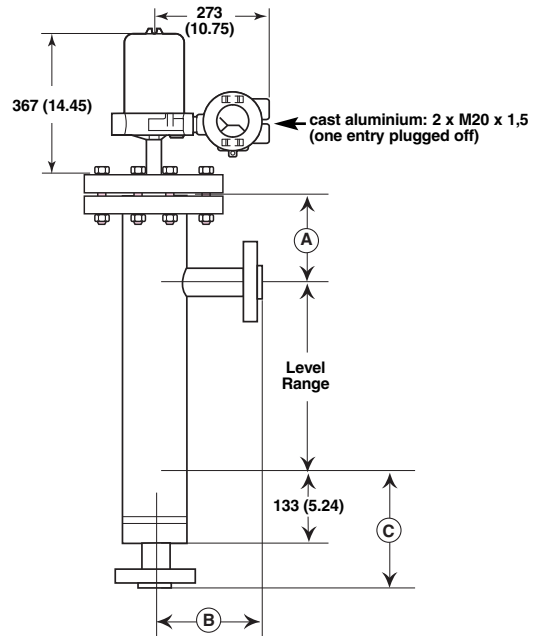
Description	Specifications
Linearity	± 0,25 % of full span for level measurement
Accuracy	0,5 %
Resolution	0,05 % of range ± 1 digit
Repeatability	± 0,20 % of full span
Response time	Less than 1s (electronics)
Sampling rate	15 times / s (digital meter: 1.33 / s)
Ambient temperature	-40 °C to +70 °C (-40 °F to +160 °F)
Process temperature	-30 °C to +315 °C (+260 °C for steam) @ +40 °C ambient temp (-20 °F to +500 °F (+600 °F for steam) @ +100 °F ambient temp) Max. temp. needs to be derated in case of higher ambient temperature. For lower process temperature – use Stainless steel constructions.
Process pressure	Max 355 bar (5150 psi) Flanged models are downrated to the design pressure of the selected flange.
Max. ambient temp. effect	< 0,056 % / °C (< 0,031 % / °F)
Density range	Min 0,23 S.G. – Max 2,20 S.G.
Humidity	0-99 %, non condensing
Electromagnetic compatibility	Meets CE requirements (EN-50081-2, EN 50082-2)

DIMENSIONS in mm (inches)

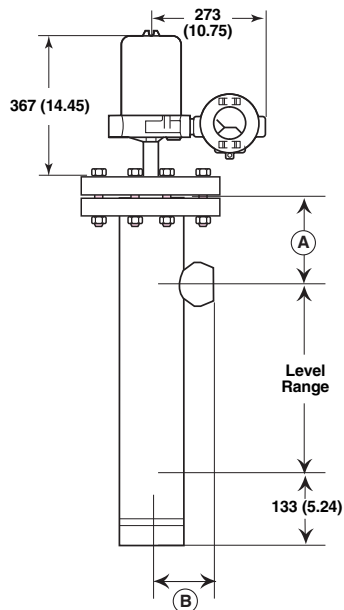
**Top Mounted
E81/E82 - J/K/L**



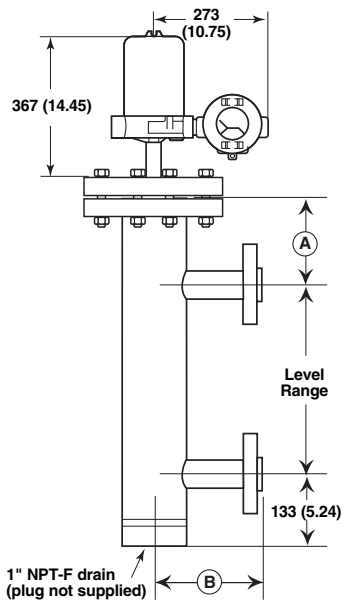
**Side/bottom cage
E83/E84 - J/K/L**



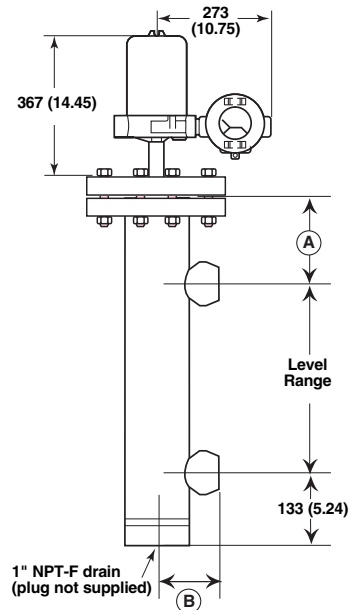
**Side/bottom cage
E83/E84 - J/K/L**



**Side/side cage
E85/E86 - J/K/L**

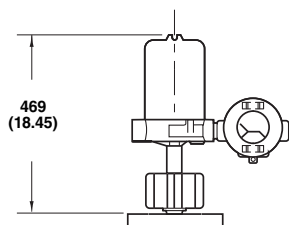


**Side/side cage
E85/E86 - J/K/L**

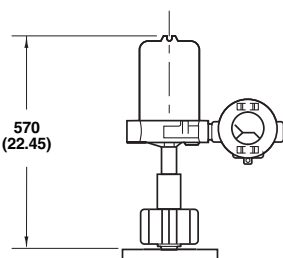


TEMPERATURE EXTENSIONS

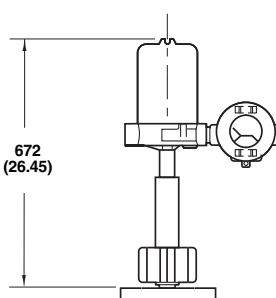
Models E8x-A/B/C



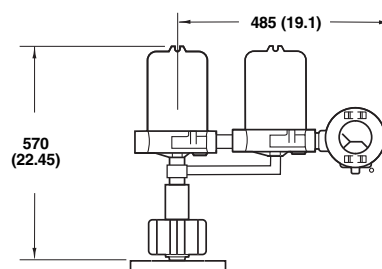
Models E8x-M/N/P



Models E8x-D/E/F



Models E8x-Q/R/T



DIMENSIONS in mm (inches)

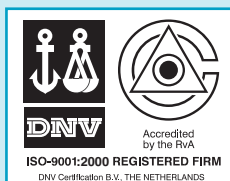
Dimension A for all models

Cage rating	SG range	4 th digit	Dimension A
150 / 300 / 600 lbs PN 16 .. PN 100	0.23 - 0.54	J/A/M/D/Q	236 (9.29)
	0.55 - 1.09	K/B/N/E/R	186 (7.32)
	1.10 - 2.20	L/C/P/F/T	186 (7.32)
900 / 1500 lbs	0.55 - 1.09	K/B/N/E/R	236 (9.29)
2500 lbs			315 (12.40)

Dimensions B and C for external cage models (E83/E84/E85/E86)

Flanged process connections				
Flange size	Flange rating	Connection type	Dimensions	
			B	C
1 1/2"	150 / 300 / 600 lbs	Slip on - ANSI RF	180 (7.09)	268 (10.55)
	600 lbs	Weldneck - ANSI RJ	180 (7.09)	268 (10.55)
	900 / 1500 lbs	Weldneck - ANSI RJ	193 (7.60)	283 (11.14)
	2500 lbs	Weldneck - ANSI RJ	235 (9.25)	313 (12.32)
2"	150 / 300 / 600 lbs	Slip on - ANSI RF	185 (7.28)	273 (10.75)
	600 lbs	Weldneck - ANSI RJ	185 (7.28)	273 (10.75)
	900 / 1500 lbs	Weldneck - ANSI RJ	214 (8.43)	303 (11.93)
	2500 lbs	Weldneck - ANSI RJ	250 (9.84)	328 (12.91)
DN 40	PN 16 .. PN 100	EN/DIN	180 (7.09)	268 (10.55)
DN 50	PN 16 .. PN 100	EN/DIN	185 (7.28)	273 (10.75)

Threaded / Socket weld process connections				
Size	Cage rating	Connection type	Dimensions	
			B	C
1 1/2"	150 / 300 / 600 lbs	NPT/SW	81 (3.19)	—
	900 / 1500 lbs	NPT	81 (3.19)	
	900 lbs	SW	81 (3.19)	
	1500 lbs	SW	89 (3.50)	
	2500 lbs	NPT/SW	102 (4.02)	
2"	150 / 300 / 600 lbs	NPT/SW	84 (3.31)	
	900 / 1500 lbs	NPT	84 (3.31)	
	900 lbs	SW	84 (3.31)	
	1500 lbs	SW	99 (3.90)	
	2500 lbs	NPT/SW	112 (4.41)	



QUALITY ASSURANCE - ISO 9001:2000

THE QUALITY ASSURANCE SYSTEM IN PLACE AT MAGNETROL GUARANTEES THE HIGHEST LEVEL OF QUALITY DURING THE DESIGN, THE CONSTRUCTION AND THE SERVICE OF CONTROLS. OUR QUALITY ASSURANCE SYSTEM IS APPROVED AND CERTIFIED TO **ISO 9001:2000** AND OUR TOTAL COMPANY IS COMMITTED TO PROVIDING FULL CUSTOMER SATISFACTION BOTH IN QUALITY PRODUCTS AND QUALITY SERVICE.

PRODUCT WARRANTY

ALL EZ MODULE LEVEL CONTROLS ARE WARRANTED FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR FIVE FULL YEARS (MECHANICAL PARTS) / ONE FULL YEAR (ELECTRONIC PARTS) FROM THE DATE OF ORIGINAL FACTORY SHIPMENT.

IF RETURNED WITHIN THE WARRANTY PERIOD; AND, UPON FACTORY INSPECTION OF THE CONTROL, THE CAUSE OF THE CLAIM IS DETERMINED TO BE COVERED UNDER THE WARRANTY; THEN, MAGNETROL INTERNATIONAL WILL REPAIR OR REPLACE THE CONTROL AT NO COST TO THE PURCHASER (OR OWNER) OTHER THAN TRANSPORTATION.

MAGNETROL SHALL NOT BE LIABLE FOR MISAPPLICATION, LABOR CLAIMS, DIRECT OR CONSEQUENTIAL DAMAGE OR EXPENSE ARISING FROM THE INSTALLATION OR USE OF THE EQUIPMENT. THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED, EXCEPT, SPECIAL WRITTEN WARRANTIES COVERING SOME MAGNETROL PRODUCTS.



UNDER RESERVE OF MODIFICATIONS

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