

Weschler DC Ammeter Shunts

**Type HA —
1 Through 500
Amperes**



HA Type

ORDERING INFORMATION

Amp	Length	Width	C-C Mounting	Type HA—50 mV Order Code	Type HA—100 mV Order Code
1	6.0"	1.25"	5.25"	HA-1-50	HA-1-100
2	6.0"	1.25"	5.25"	HA-2-50	HA-2-100
5	6.0"	1.25"	5.25"	HA-5-50	HA-5-100
10	6.0"	1.25"	5.25"	HA-10-50	HA-10-100
20	6.0"	1.25"	5.25"	HA-20-50	HA-20-100
50	6.0"	1.25"	5.25"	HA-50-50	HA-50-100
100	6.0"	1.25"	5.25"	HA-100-50	HA-100-100
200	6.0"	1.25"	5.25"	HA-200-50	HA-200-100
300	6.0"	1.25"	5.25"	HA-300-50	HA-300-100
500	6.0"	1.25"	5.25"	HA-500-50	HA-500-100

**Type Lab —
10 Through 1000
Amperes**



Lab Type

ORDERING INFORMATION

Amp	Type Lab — 50 mV			Type Lab — 100 mV		
	Length	Width	Order Code	Length	Width	Order Code
10	5.0"	1.25"	LAB-10-50	6.25"	1.25"	LAB-10-100
15	5.0"	1.25"	LAB-15-50	6.25"	1.25"	LAB-15-100
25	5.0"	1.25"	LAB-25-50	6.25"	1.25"	LAB-25-100
50	5.0"	1.25"	LAB-50-50	6.25"	1.25"	LAB-50-100
100	5.0"	1.25"	LAB-100-50	6.25"	1.25"	LAB-100-100
150	5.0"	1.25"	LAB-150-50	6.25"	1.25"	LAB-150-100
200	5.0"	1.25"	LAB-200-50	6.25"	1.25"	LAB-200-100
250	6.75"	1.87"	LAB-250-50	8.0"	1.875"	LAB-250-100
300	6.75"	1.87"	LAB-300-50	8.0"	1.875"	LAB-300-100
400	6.75"	1.87"	LAB-400-50	8.0"	1.875"	LAB-400-100
1000	6.75"	2.37"	LAB-1000-50	8.0"	2.375"	LAB-1000-100

MLA

**Lightweight
Types**



Type MLC — 800 Through 1200 Amperes

ORDERING INFORMATION— MLC-50 MV

Order Code	Amp	Length	Width
MLC-800-50	800	4.5"	2.5"
MLC-1000-50	1000	4.5"	2.5"
MLC-1200-50	1200	4.5"	2.5"

Type MLA — 5 Through 150 Amperes

ORDERING INFORMATION— MLC-50 MV

Order Code	Amp	Length	Width
MLA-5-50	5	2.0"	1.25"
MLA-10-50	10	2.0"	1.25"
MLA-15-50	15	2.0"	1.25"
MLA-20-50	20	2.0"	1.25"
MLA-30-50	30	2.0"	1.25"
MLA-50-50	50	2.0"	1.25"
MLA-75-50	75	2.0"	1.25"
MLA-80-50	80	2.0"	1.25"
MLA-100-50	100	2.0"	1.25"
MLA-150-50	150	2.0"	1.25"

Type MLB — 170 Through 600 Amperes

ORDERING INFORMATION— MLB-50 MV

Order Code	Amp	Length	Width
MLB-170-50	170	3.25"	1.75"
MLB-200-50	200	3.25"	1.75"
MLB-250-50	250	3.25"	1.75"
MLB-300-50	300	3.25"	1.75"
MLB-400-50	400	3.25"	1.75"
MLB-500-50	500	3.25"	1.75"
MLB-600-50	600	3.25"	1.75"

TRANSDUCERS / SENSORS

NK Technologies DC Current Transducers

- Hall-effect sensor and signal conditioner in a single package
- Jumper selectable input ranges to 400 A



DT4

ORDERING INFORMATION

Order Code *	Description	Output
DT1-005-24U-U	50, 75, and 100 A Range	0-5 VDC
DT1-420-24U-U	50, 75, and 100 A Range	4-20 mA
DT2-005-24U-U	100, 150, and 200 A Range	0-5 VDC
DT2-420-24U-U	100, 150, and 200 A Range	4-20 mA
DT3-005-24U-U	150, 225, and 300 A Range	0-5 VDC
DT3-420-24U-U	150, 225, and 300 A Range	4-20 mA
DT4-005-24U-U	200, 300, and 400 A Range	0-5 VDC
DT4-420-24U-U	200, 300, and 400 A Range	4-20 mA

* Add suffix FL for solid core, SP for split core

SPECIFICATIONS

Output Signal:	4-20 mA, 0-5 VDC or 0-10 VDC
Output Limit:	4-20 mA: 23 mA 0-5 VDC: 5.75 VDC 0-10 VDC: 11.5 VDC
Output Polarity:	Unipolar, Bipolar available
Accuracy:	1.0% FS
Power Supply:	Universal 20-50 VDC, 22-38 VAC, 2VA Max. Power Input and Output Signal are Not Isolated
Power Consumption:	2 VA
Loading:	4-20 mA: 650Ω Maximum 0-5VDC: 25kΩ Min. 0-10VDC: 50kΩ Min.
Linearity:	0.75% FS
Current Ranges:	Jumper Selectable 0-400A
Sensing Aperture:	0.85" (21.5 mm) Sq
Case:	UL 94V-0 Flammability Rated
Environmental:	-4 to 122°F (-20 to 50°C), 0-95% RH Non-Condensing

Empro Shunts



Type A ▲



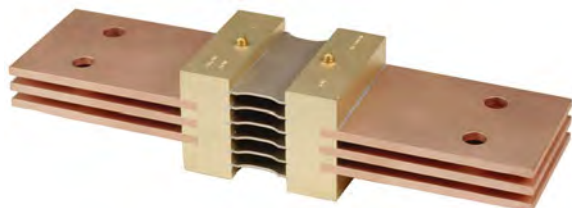
Type B ▲



Type C ▲



Type E ▲



Type WT ▲

Type A — 20 Through 600 Amperes

ORDERING INFORMATION

Amp	Type A — 50 mV			Type A — 100 mV		
	Length	Width	Order Code	Length	Width	Order Code
20	4.125"	0.675"	A-20-50			
50	4.125"	0.675"	A-50-50	5.75"	0.675"	A-50-100
75	4.125"	0.675"	A-75-50	5.75"	0.675"	A-75-100
100	4.125"	0.675"	A-100-50	5.75"	0.675"	A-100-100
125	4.125"	0.813"	A-125-50			
150	4.125"	0.938"	A-150-50	5.75"	0.93"	A-150-100
175	4.125"	0.75"	A-175-50			
200	4.125"	0.813"	A-200-50	5.75"	0.813"	A-200-100
250	4.125"	1.063"	A-250-50	5.75"	1.063"	A-250-100
300	4.125"	1.25"	A-300-50	5.75"	1.25"	A-300-100
375	4.625"	0.938"	A-375-50	6.25"	0.938"	A-375-100
400	4.625"	1.00"	A-400-50	6.25"	1.00"	A-400-100
500	4.625"	1.25"	A-500-50	6.25"	1.25"	A-500-100
600	4.625"	1.50"	A-600-50	6.25"	1.50"	A-600-100

Type B — 300 Through 1000 Amperes

ORDERING INFORMATION

Amp	Type B — 50 mV			Type B — 100 mV		
	Length	Width	Order Code	Length	Width	Order Code
300	5.875"	1.75"	B-300-50	7.75"	1.75"	B-300-100
400	5.875"	2.00"	B-400-50	7.75"	2.00"	B-400-100
500	5.875"	2.00"	B-500-50	7.75"	2.00"	B-500-100
600	5.875"	2.00"	B-600-50	7.75"	2.00"	B-600-100
750	5.875"	2.25"	B-750-50	7.75"	2.25"	B-750-100
800	5.875"	2.375"	B-800-50	7.75"	2.375"	B-800-100
1000	5.875"	2.50"	B-1000-50	7.75"	2.50"	B-1000-100
1200	5.875"	3.00"	B-1200-50	7.75"	3.00"	B-1200-100

Type C — 1000 Through 2000 Amperes

ORDERING INFORMATION

Amp	Type C — 50 mV			Type C — 100 mV		
	Length	Width	Order Code	Length	Width	Order Code
1000	9.063"	2.625"	C-1000-50	10.875"	2.625"	C-1000-100
1200	9.063"	3.00"	C-1200-50	10.875"	3.00"	C-1200-100
1500	9.063"	3.00"	C-1500-50	10.875"	3.00"	C-1500-100
2000	9.063"	3.25"	C-2000-50	10.875"	3.25"	C-2000-100

Type E — 1500 Through 2000 Amperes

ORDERING INFORMATION

Amp	Type E — 50 mV			Type E — 100 mV		
	Length	Width	Order Code	Length	Width	Order Code
1500	9.625"	3.00"	E-1500-50	11.25"	3.00"	E-1500-100
2000	9.625"	4.00"	E-2000-50	11.25"	4.00"	E-2000-100

Type WT — 600 Through 10000 Amperes

ORDERING INFORMATION

Amp	Type WT — 50 mV			Type WT — 100 mV		
	Length	Width	Order Code	Length	Width	Order Code
600				12.0"	3.0"	WT-600-100
750				12.0"	3.0"	WT-750-100
800				12.0"	3.0"	WT-800-100
1000	9.063"	3.0"	WT-1000-50	12.0"	3.0"	WT-1000-100
1200	9.063"	3.0"	WT-1200-50	12.0"	4.0"	WT-1200-100
1500	9.063"	3.0"	WT-1500-50	18.5"	4.0"	WT-1500-100
2000	9.063"	4.0"	WT-2000-50	18.5"	4.0"	WT-2000-100
2500	15.625"	4.0"	WT-2500-50	18.5"	5.0"	WT-2500-100
3000	15.625"	4.0"	WT-3000-50	18.5"	5.0"	WT-3000-100
4000	15.625"	5.0"	WT-4000-50	18.563"	5.0"	WT-4000-100
5000	15.625"	5.0"	WT-5000-50	18.563"	5.0"	WT-5000-100
6000	15.625"	6.0"	WT-6000-50	18.563"	6.0"	WT-6000-100
7500	15.625"	6.0"	WT-7500-50			
8000	15.625"	6.0"	WT-8000-50			
10000	16.0"	8.0"	WT-10000-50			

Instrument Transformer AC Split Core Current Transformers

Model 600 – Window 2 x 5.5"
Model 601 – Window 4.5 x 4.5"
Model 604 – Window 1.42 x 1.53"

- 50-400 Hz
- 0.6kV, BIL 10kV FW



Leads (600, 601, 604) #16 AWG, 24"

ORDERING INFORMATION - MODEL 600

Order Code	Current Ratio	ANSI Metering Class @ 60 Hz			VA @ 1% Class
		B0.1	B0.2	B0.5	
600-401	400:5	2.4	4.8		1.5
600-501	500:5	2.4	4.8		2.0
600-601	600:5	2.4	2.4		2.5
600-801	800:5	1.2	1.2	2.4	5.0
600-102	1000:5	1.2	1.2	2.4	7.5
600-122	1200:5	0.6	1.2	1.2	15.0
600-152	1500:5	0.6	0.6	1.2	20.0
600-162	1600:5	0.6	0.6	1.2	20.0
600-202	2000:5	0.6	0.6	0.6	30.0

ORDERING INFORMATION - MODEL 601

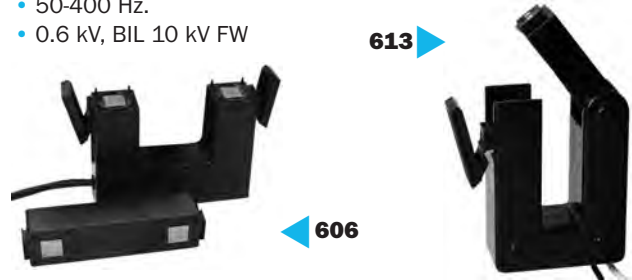
Order Code	Current Ratio	ANSI Metering Class @ 60 Hz			VA @ 1% Class
		B0.1	B0.2	B0.5	
601-401	400:5	4.8	-	-	1.0
601-501	500:5	4.8	4.8	-	1.5
601-601	600:5	2.4	4.8	-	2.0
601-801	800:5	1.2	2.4	4.8	2.5
601-102	1000:5	1.2	1.2	4.8	5.0
601-122	1200:5	1.2	1.2	2.4	10.0
601-152	1500:5	1.2	1.2	1.2	15.0
601-162	1600:5	1.2	1.2	1.2	15.0
601-202	2000:5	0.6	0.6	1.2	20.0

ORDERING INFORMATION - MODEL 604

Order Code	Current Ratio	Burden VA	Accuracy
604-101	100:5	1	±5%
604-1250	125:5	1	±5%
604-151	150:5	2	±4%
604-1750	175:5	2	±3%
604-201	200:5	2	±2%
604-251	250:5	2	±2%
604-301	300:5	2	±1.5%
604-401	400:5	2.5	±1.5%
604-1000T	100:0.1	-	±3%

Model 613 – Window 0.8 x 1.95" (indoor only)
Model 606 Weatherproof - Window 2.7 x 2.75"
Model 608 Weatherproof – Window 2.6 x 6.25"

- 50-400 Hz.
- 0.6 kV, BIL 10 kV FW



Leads (613) #16 AWG, 24"

Secondary Cable (606, 608) #16 AWG, 6ft

ORDERING INFORMATION - MODEL 613

Order Code	Current Ratio	Burden VA	Accuracy 60Hz
613-101	100:5	1	5%
613-1250	125:5	1.25	5%
613-151	150:5	1.5	5%
613-1750	175:5	1.75	5%
613-201	200:5	2.5	4%
613-251	250:5	2.5	4%
613-301	300:5	3	2%
613-401	400:5	3	2%

ORDERING INFORMATION - MODEL 606

Order Code	Current Ratio	Burden VA	Accuracy 60Hz
606-201	200:5	2.5	2%
606-251	250:5	3	1%
606-301	300:5	3.5	1%
606-351	350:5	4	1%
606-401	400:5	5	1%
606-501	500:5	6	1%
606-601	600:5	8	1%
606-751	750:5	10	1%
606-801	800:5	12	1%
606-102	1000:5	15	1%
606-122	1200:5	20	1%

ORDERING INFORMATION - MODEL 608

Order Code	Current Ratio	Burden VA	Accuracy 60Hz
608-501	500:5	6	1%
608-601	600:5	8	1%
608-801	800:5	12	1%
608-102	1000:5	13	1%
608-122	1200:5	16	1%
608-152	1500:5	25	1%
608-162	1600:5	27	1%
606-202	2000:5	33	1%
608-252	2500:5	42	1%
608-302	3000:5	50	1%
608-322	3200:5	54	1%

Weschler AC Voltage Transformers

460 ▶

- 600V Insulation Level, 10kV BIL
- Accuracy Class 0.6W, 1.2x at 60Hz
- 150VA at 30°C, 100VA at 55°C
- 60Hz



ORDERING INFORMATION

Order Code	Voltage Rating (line to line)	Turns Ratio
460-069	69.3:120	0.58:1
460-120	120:120	1:1
460-208	208:120	1.73:1
460-240	240:120	2:1
460-288	288:120	2.4:1
460-300	300:120	2.5:1
460-480	480:120	4:1
460-600	600:120	5:1
460-380	380:120	3.15:1 for 50 Hz

467 ▶

- 600V Insulation Level, 10kV BIL
- ±1% Accuracy Class up to 5VA Burden
- 40VA at 30°C, 27VA at 55°C
- 60Hz



ORDERING INFORMATION

Order Code	Voltage Rating (line to line)	Turns Ratio
467-069	69.3:120	0.58:1
467-120	120:120	1:1
467-208	208:120	1.73:1
467-240	240:120	2:1
467-288	288:120	2.4:1
467-300	300:120	2.5:1
467-480	480:120	4:1
467-600	600:120	5:1
467-380	380:120	3.17:1 for 50 Hz

Flexcore Split Core CT

- Seven Opening Sizes
- 1 or 5 Amp Secondaries
- 0.333V or 1.0V Secondaries
- Indoor or Outdoor Use



Flexible split-core opens with a twisting motion. Silicone rubber encapsulation protects against moisture, dirt, oil and corona. Remains flexible from -45° to +200°C.

FC ▲

SPECIFICATIONS

Insulation Level:	0.6kV, BIL 10kV Full Wave
Frequency:	50-400Hz
Thermal factor:	1.25 at 30°C, 1.0 at 55°C
Accuracy:	
200:5 thru 300:5	4%
400:5 thru 500:5	3%
600:5 thru 800:5	2%
1000:5 thru 6000:5	1%
Leads:	12 feet long with spade connectors, Black wire = X1, White wire = X2

ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: FC-1000/5-8

A - B - C

A	Model	
FC	Split core CT	
FCL	UL Listed (Indoor use only) File E186575	
B	Ratio	
	See chart for available sizes	
C	Inside Diameter (inches)	
	4, 6, 8, 11, 18, R, R411	
	(R= 2-3/4 x 6-5/8, R411= 4 x 11)	

AVAILABLE SIZES

Ratio	4"	6"	8"	11"	18"	R	R411	Burden
200/5	X	-	-	-	-	-	-	2VA
250/5	X	-	-	-	-	-	-	2VA
300/5	X	X	-	-	-	-	-	2VA
400/5	X	X	-	-	-	X	-	2VA
500/5	X	X	-	-	-	X	-	3VA
600/5	X	X	-	-	-	X	-	5VA
800/5	X	X	-	-	-	X	-	5VA
1000/5	X	X	X	-	-	X	-	5VA
1200/5	X	X	X	-	-	X	-	5VA
1500/5	X	X	X	X	-	X	X	15VA
1600/5	X	X	X	X	-	X	X	15VA
2000/5	X	X	X	X	X	X	X	25VA
2400/5	-	X	X	X	X	X	X	30VA
2500/5	-	X	X	X	X	X	X	35VA
3000/5	-	X	X	X	X	X	X	45VA
3500/5	-	X	X	X	X	X	X	45VA
4000/5	-	X	X	X	X	X	X	45VA
5000/5	-	X	X	X	X	X	X	45VA
6000/5	-	X	X	X	X	X	X	45VA

Weschler AC Current Transformers

- Solid Core
- 0.6kV Insulation Class, BIL 10kV Full Wave
- 50-400 Hz
- 8-32 Studs or 24" Leads



▲ RL Case Style



▲ SFT Case Style



▲ SHT Case Style



▲ RBT Case Style



◀ RBL Case Style

▼ DRL Case Style



◀ RT Case Style

Models 2SFT and 2SHT—Window Dia. 1.13"
 Model 2RL—Window Dia. 1.15"
 Model 2DRL—Window Dia. 1"

ORDERING INFORMATION

2SFT, 2SHT, 2RL, 2DRL

Catalog #	Current Ratio	Model 2S, 2R		Model 2DRL	
		Accuracy @ 60 Hz	Burden VA @ 60 Hz	Accuracy @ 60 Hz	Burden VA @ 60 Hz
2**-500	50:5	±3%	2.0	±2%	1.5
2**-600	60:5	±2%	2.0	±1%	2.5
2**-750	75:5	±2%	2.0	±1%	3.5
2**-800	80:5	±2%	2.0	±1%	4.0
2**-101	100:5	±1%	2.0	±1%	5.0
2**-121	120:5	±1%	2.5	±1%	5.0
2**-1250	125:5	±1%	2.5	±1%	5.0
2**-151	150:5	±1%	4.0	±1%	8.0
2**-201	200:5	±1%	4.0	±1%	10.0
2**-251	250:5	±1%	6.0	±1%	12.5
2**-301	300:5	±1%	8.0	±1%	15.0
2**-401	400:5	±1%	10.0	±1%	20.0

Model 5—Window Dia. 1.56"

ORDERING INFORMATION

Model 5SFT, 5SHT, 5RT, 5RBT, 5RL, 5RBL

Catalog #	Current Ratio	Accuracy @ 60 Hz	Burden VA @ 60 Hz
5**-750	75:5	±2%	1.5
5**-101	100:5	±2%	2.0
5**-151	150:5	±1%	5.0
5**-201	200:5	±1%	5.0
5**-251	250:5	±1%	10.0
5**-301	300:5	±1%	12.5
5**-401	400:5	±1%	12.5
5**-501	500:5	±1%	20.0
5**-601	600:5	±1%	25.0
5**-751	750:5	±1%	25.0
5**-801	800:5	±1%	25.0
5**-102	1000:5	±1%	25.0
5**-122	1200:5	±1%	30.0

Model 7—Window Dia. 2.50"

ORDERING INFORMATION

Model 7SFT, 7SHT, 7RT, 7RBT, 7RL, 7RBL

Catalog #	Current Ratio	Accuracy at 60 Hz	Burden at 60 Hz
7**-151	150:5	±1%	5.0
7**-201	200:5	±1%	5.0
7**-251	250:5	±1%	5.0
7**-301	300:5	±1%	12.5
7**-401	400:5	±1%	15.0
7**-501	500:5	±1%	25.0
7**-601	600:5	±1%	30.0
7**-751	750:5	±1%	30.0
7**-801	800:5	±1%	35.0
7**-102	1000:5	±1%	30.0
7**-122	1200:5	±1%	35.0
7**-152	1500:5	±1%	40.0
7**-162	1600:5	±1%	45.0

Model 76—Window Dia. 3.00"

ORDERING INFORMATION

Model 76SFT, 76SHT, 76RT, 76RBT, 76RL, 76RBL

Catalog #	Current Ratio	Accuracy at 60 Hz	Burden at 60 Hz
76**-251	250:5	±1%	5.0
76**-301	300:5	±1%	6.0
76**-401	400:5	±1%	10.0
76**-501	500:5	±1%	10.0
76**-601	600:5	±1%	10.0
76**-751	750:5	±1%	10.0
76**-801	800:5	±1%	12.5
76**-102	1000:5	±1%	10.0
76**-122	1200:5	±1%	10.0
76**-152	1500:5	±1%	12.5
76**-162	1600:5	±1%	12.5
76**-202	2000:5	±1%	15.0

NOTE: **Insert case style when ordering

See CT Application Note in Technical Reference Section.

Weschler AC Current Transformers

3P3 ▶



Model 8 — Window Dia. 3.25"

ORDERING INFORMATION

Model 8SHT, 8RL

Catalog #	Current Ratio	V.A. for ±1%	ANSI Metering Class @ 60 Hz				
	Amperes	Class	B0.1	B0.2	B0.5	B0.9	B1.8
8**-201	200:5	5.0	1.2	1.2	—	—	—
8**-251	250:5	7.5	0.6	1.2	2.4	—	—
8**-301	300:5	15.0	0.6	0.6	1.2	2.4	—
8**-401	400:5	25.0	0.3	0.6	1.2	1.2	—
8**-501	500:5	35.0	0.3	0.3	0.6	1.2	—
8**-601	600:5	50.0	0.3	0.3	0.6	1.2	2.4
8**-751	750:5	50.0	0.3	0.3	0.3	0.6	1.2
8**-801	800:5	60.0	0.3	0.3	0.3	0.6	1.2
8**-102	1000:5	75.0	0.3	0.3	0.3	0.6	1.2
8**-122	1200:5	75.0	0.3	0.3	0.3	0.6	0.6
8**-152	1500:5	90.0	0.3	0.3	0.3	0.6	0.6
8**-162	1600:5	100.0	0.3	0.3	0.3	0.6	0.6
8**-202	2000:5	120.0	0.3	0.3	0.3	0.3	0.3
8**-252	2500:5	50.0	0.3	0.3	0.3	0.3	—
8**-302	3000:5	60.0	0.3	0.3	0.3	0.3	—
8**-352	3200:5	70.0	0.3	0.3	0.3	0.3	—
8**-402	4000:5	80.0	0.3	0.3	0.3	0.3	—

Model 170 — Window Dia. 4.25"

ORDERING INFORMATION

Model 170SHT, 170RL

Catalog #	Current Ratio	V.A. for ±1%	ANSI Metering Class @ 60 Hz				
	Amperes	Class	B0.1	B0.2	B0.5	B0.9	B1.8
170**-201	200:5	5.0	1.2	1.2	—	—	—
170**-251	250:5	5.0	1.2	1.2	—	—	—
170**-301	300:5	12.5	0.6	0.6	1.2	2.4	—
170**-401	400:5	25.0	0.6	0.6	1.2	1.2	2.4
170**-501	500:5	25.0	0.3	0.3	0.6	1.2	2.4
170**-601	600:5	25.0	0.3	0.3	0.6	0.6	1.2
170**-751	750:5	40.0	0.3	0.3	0.3	0.3	0.6
170**-801	800:5	50.0	0.3	0.3	0.3	0.3	0.6
170**-102	1000:5	75.0	0.3	0.3	0.3	0.3	0.6
170**-122	1200:5	100.0	0.3	0.3	0.3	0.3	0.6
170**-152	1500:5	80.0	0.3	0.3	0.3	0.6	0.6
170**-162	1600:5	90.0	0.3	0.3	0.3	0.6	0.6
170**-202	2000:5	105.0	0.3	0.3	0.3	0.3	0.3
170**-252	2500:5	130.0	0.3	0.3	0.3	0.3	0.3
170**-302	3000:5	165.0	0.3	0.3	0.3	0.3	0.3
170**-352	3200:5	190.0	0.3	0.3	0.3	0.3	0.3
170**-402	4000:5	215.0	0.3	0.3	0.3	0.3	0.3

NOTE: **Insert case style when ordering

ORDERING INFORMATION

Model 3P3 — Window Dia. 0.97" Phase Center 2.31"

Catalog #	Current Ratio	Accuracy @ 60 Hz	Burden VA@60Hz
3P3-500	50:5	±3%	2.0
3P3-600	60:5	±2%	2.0
3P3-750	75:5	±2%	2.0
3P3-800	80:5	±2%	2.0
3P3-101	100:5	±1%	2.0
3P3-121	120:5	±1%	2.5
3P3-1250	125:5	±1%	2.5
3P3-151	150:5	±1%	4.0
3P3-201	200:5	±1%	5.0
3P3-251	250:5	±1%	7.5
3P3-301	300:5	±1%	10.0

ORDERING INFORMATION

Model 3P4 — Window Dia. 1.56" Phase Center 3.56"

Catalog #	Current Ratio	ANSI Metering Class @ 60 Hz				
		B0.1	B0.2	B0.5	B0.9	B1.8
3P4-500	50:5	4.8	-	-	-	-
3P4-101	100:5	1.2	2.4	-	-	-
3P4-151	150:5	0.6	1.2	2.4	-	-
3P4-201	200:5	0.6	0.6	1.2	2.4	-
3P4-251	250:5	0.6	0.6	1.2	2.4	2.4
3P4-301	300:5	0.3	0.3	0.6	1.2	2.4
3P4-401	400:5	0.3	0.3	0.6	1.2	1.2
3P4-501	500:5	0.3	0.3	0.6	0.6	1.2
3P4-601	600:5	0.3	0.3	0.6	0.6	1.2
3P4-751	750:5	0.3	0.3	0.6	0.6	0.6
3P4-801	800:5	0.3	0.3	0.6	0.6	0.6
3P4-102	1000:5	0.3	0.3	0.3	0.6	0.6

Model 180/181 — Window Dia. 2.5"

ORDERING INFORMATION

Model 180RL, 180SHT, 181

Catalog #	Current Ratio	V.A. for ±1%	ANSI Metering Class @ 60 Hz				
	Amperes	Class	B0.1	B0.2	B0.5	B0.9	B1.8
180**-101	100:5	2.5	1.2	2.4	—	—	—
180**-151	150:5	5.0	0.6	1.2	—	—	—
180**-201	200:5	12.5	0.6	0.6	1.2	—	—
180**-251	250:5	12.5	0.3	0.3	1.2	—	—
180**-301	300:5	25.0	0.3	0.3	0.6	1.2	2.4
180**-401	400:5	50.0	0.3	0.3	0.3	0.6	1.2
180**-501	500:5	50.0	0.3	0.3	0.3	0.6	1.29
180**-601	600:5	50.0	0.3	0.3	0.3	0.6	0.6
180**-751	750:5	50.0	0.3	0.3	0.3	0.3	0.6
180**-801	800:5	75.0	0.3	0.3	0.3	0.3	0.3
180**-102	1000:5	100.0	0.3	0.3	0.3	0.6	0.6
180**-122	1200:5	125.0	0.3	0.3	0.3	0.6	0.6
180**-152	1500:5	160.0	0.3	0.3	0.3	0.3	0.3
180**-162	1600:5	175.0	0.3	0.3	0.3	0.3	0.3

Instrument Transformer AC Current Transducers

- Large Window Area
- 0.5% FS accuracy
- 4-20mA DC Output
- 120VAC or 24VDC Power

The PCL is a 4 terminal device with separate connections for power and load. The PCM is a two terminal device. 24V is applied between the + terminal and ground. The output load may be inserted in either the - line for negative ground systems or the + line for positive ground systems.



SPECIFICATIONS

Output Signal:	Average responding, RMS calibrated	
Linear Range:	0-120% of rated current (typical)	
Frequency:	50/60Hz	
Operating Temperature:	-30 to 60°C	
Insulation Level:	600V, 10kV BIL full wave	
Maximum Output:	30mA DC	
Output Ripple:	1% max peak	
Supply Voltage:	PCL 120VAC ±10%	
	PCM 24VDC ±10%	
Output Load:	PCL <1000 ohms	
	PCM <600 ohms	
Size (LxWxH, inches)		Window dia
PCL-5 thru 75	2.7 x 2.4 x 4.5	0.94"
PCL-100 & up	4.5 x 4.7 x 4.9	2.13"
PCM-5 thru 20	2.7 x 2.4 x 2.75	0.93"
PCM-30 & up	4.5 x 4.7 x 4.9	1.25"

ORDERING INFORMATION

Model	Rated Current	Connections
PCL-5	5A	#8 screws
PCL-20	10A, 15A, 20A*	
PCL-75	25A, 50A, 75A*	
PCL-100	100A	#8 studs
PCL-150	150A	
PCL-200	200A	
PCL-300	300A	
PCL-400	400A	
PCL-600	600A	
PCM-5	5A	#10 screws
PCM-10	10A	
PCM-20	20A	
PCM-30	30A	
PCM-50	50A	
PCM-75	75A	
PCM-100	100A	
PCM-150	150A	
PCM-200	200A	
PCM-300	300A	#8 studs

*Switch selectable

NK Technologies Ground Fault Sensor

NEW



- Fixed or selectable setpoint
- Solid-state or relay output
- Green LED Power-On indication

Detects ground fault (earth leakage) conditions by monitoring all current-carrying conductors in a grounded single or three phase system.

SPECIFICATIONS

Setpoint:	AG1, AG2: factory calibrated AG3: field jumper selected
Solid-state Output:	Isolated dry contact AC Switch: 1A @ 240VAC DC Switch: 0.15A @ 30VAC Leakage <10 micro Amps (N.O.), <2.5mA (N.C.)
Mechanical Output:	Single pole relay Auto Reset: SPDT, 1A @ 125VAC, 2A @ 30VDC Latching: SPST, 1A @ 125VAC, 2A @ 30VDC
Response Time:	200ms @ 5% above trip point 60ms @ 50% above trip point 15ms @ 500% above trip point
Isolation:	5kVAC (tested)
Frequency:	50-400 Hz (monitored circuit)
Power Supply:	66-132VAC 19.2-28.8VAC/DC
Loading:	2VA max.
Case:	UL94 V0 Flammability Rated
Environment:	-4 to 122°F (-20 to 50°C), < 95% RH, non-condensing
Size:	3.9" W x 3.0" H x 1.5" D (99x76x38mm)
Listings:	UL 1053, Class 1 Recognized, CE

ORDERING INFORMATION

To Order Insert Code for Each Letter to Select Catalog Number

AG A - B - C - D - E Example: AG1-NOAC-120-FS-005

A Setpoint

1	5-100mA factory set
2*	80-950mA factory set
3	5/10/30mA jumper set (TR3 only)

B Output Type

NOAC	Normally Open solid state, 1A @ 240VAC
NCAC	Normally Closed solid state, 1A @ 240VAC
NODC	Normally Open solid state, 0.15A @ 30VDC
NCDC	Normally Closed solid state, 0.15A @ 30VDC
NCR1	Normally Closed SPST Relay (requires LA option)
NOR1	Normally Open SPST Relay (requires LA option)
SDT1	SPDT Relay (Form C) with autoreset (requires DEN or ENE option)

C Power Supply

120	120VAC
24U*	24VAC/VDC

D Options

FS	Normally Energized (solid state output only)
NF	Normally De-energized (solid state output only)
ENE	Normally Energized, auto-reset (SDT1 output only)
DEN	Normally De-energized, autoreset (SDT1 output only)
LA	Latching (NOR1 and NCR1)

E Setpoint

TR3	Tri-set (5/10/30mA)
nnn	Factory set trip point in mA

*Not UL recognized.

Weschler Transducers

CLD001J



AC & DC Transducers—Metal Case

- Accuracy: $\pm 0.2\%$ or 0.5%
- Wide Variety of Input and Output Options
- Rugged Metal Can Construction
- 5 kV Transient Protection
- Sizes:
 - Can size 1: 3.976" L x 2.012" W x 4.096" H
 - Can size 2: 5.236" L x 3.769" W x 4.717" H

AC CURRENT TRANSDUCER

Transducer Type	Input	Output	Aux. Power	Can Size	Part # $\pm 0.5\%$	Part # $\pm 0.2\%$
Single (average sensing)	0-1 AAC	0-1 mADC	None	1	CTA100JA	CTA100ZA
Single (average sensing)	0-1 AAC	4 mA-20 mADC	120 VAC	2	CTD100JA	CTD100ZA
Single (TRMS sensing)	0-1 AAC	0-1 mADC	120 VAC	2	CTA100JT	CTA100ZT
Single (TRMS sensing)	0-1 AAC	4 mA-20 mADC	120 VAC	2	CTD100JT	CTD100ZT
Single (average sensing)	0-5 AAC	0-1 mADC	None	1	CTA500JA	CTA500ZA
Single (average sensing)	0-5 AAC	4 mA-20 mADC	120 VAC	2	CTD500JA	CTD500ZA
Triple (average sensing)	0-5 AAC	0-1 mADC	None	2	CTA503JA	CTA503ZA
Single (TRMS sensing)	0-5 AAC	0-1 mADC	120 VAC	2	CTA500JT	CTA500ZT
Single (TRMS sensing)	0-5 AAC	4 mA-20 mADC	120 VAC	2	CTD500JT	CTD500ZT

Specifications
on PAGE 98.

AC VOLTAGE TRANSDUCER

Transducer Type	Input	Output	Aux. Power	Can Size	Part # $\pm 0.5\%$	Part # $\pm 0.2\%$
Single (average sensing)	0-150 VAC	0-1 mADC	None	1	ETA150JA	ETA150ZA
Single (average sensing)	0-300 VAC	0-1 mADC	None	1	ETA300JA	ETA300ZA
Single (average sensing)	0-600 VAC	0-1 mADC	None	1	ETA600JA	ETA600ZA
Single (average sensing)	0-150 VAC	4 mA-20 mADC	120 VAC	2	ETD150JA	ETD150ZA
Single (average sensing)	0-300 VAC	4 mA-20 mADC	120 VAC	2	ETD300JA	ETD300ZA
Single (average sensing)	0-600 VAC	4 mA-20 mADC	120 VAC	2	ETD600JA	ETD600ZA
3 Inputs (average sensing)	0-150 VAC	0-1 mADC	None	2	ETA153JA	ETA153ZA
3 Inputs (average sensing)	0-300 VAC	0-1 mADC	None	2	ETA303JA	ETA303ZA
Single (TRMS sensing)	0-150 VAC	0-1 mADC	120 VAC	2	ETA150JT	ETA150ZT
Single (TRMS sensing)	0-300 VAC	0-1 mADC	120 VAC	2	ETA300JT	ETA300ZT
Single (TRMS sensing)	0-150 VAC	4 mA-20 mADC	120 VAC	2	ETD150JT	ETD150ZT
Single (TRMS sensing)	0-300 VAC	4 mA-20 mADC	120 VAC	2	ETD300JT	ETD300ZT

Specifications
on PAGE 98.

AC FREQUENCY TRANSDUCER—CAN SIZE "2"

Frequency	Input	Output	Part # $\pm 1.0\%$	Part # $\pm 0.1\%$
45-55 Hz	120V	0-1 mA	FQA050J	FQA050Z
45-65 Hz	120V	0-1 mA	FQA055J	FQA055Z
55-65 Hz	120V	0-1 mA	FQA060J	FQA060Z
375-425 Hz	120V	0-1 mA	FQA400J	FQA400Z
45-55 Hz	120V	4-12-20 mADC	FQD050J	FQD050Z*
45-65 Hz	120V	4-12-20 mADC	FQD055J	FQD055Z*
55-65 Hz	120V	4-12-20 mADC	FQD060J	FQD060Z*
375-425 Hz	120V	4-12-20 mADC	FQD400J	FQD400Z*

Specifications
on PAGE 98.

*Accuracy is 0.2%

Weschler Transducers

AC WATT TRANSDUCER—CAN SIZE "2"

Connection	No. of Elements	Rating	Output	Aux. Power	Part # ±0.5%	Part # ±0.2%
1 \emptyset 2-wire	1 element	120V/5A	±1 mADC	None	WTB010J	WTB010Z
3 \emptyset 3-wire	2 element	120V/5A	±1 mADC	None	WTB020J	WTB020Z
3 \emptyset 4-wire	2 ¹ / ₂ element	120V/5A	±1 mADC	None	WTB025J	WTB025Z
3 \emptyset 4-wire	3 element	120V/5A	±1 mADC	None	WTB030J	WTB030Z
1 \emptyset 2-wire	1 element	120V/5A	4 mA–20 mADC	None	WTD010J	WTD010Z
3 \emptyset 3-wire	2 element	120V/5A	4 mA–20 mADC	None	WTD020J	WTD020Z
3 \emptyset 4-wire	2 ¹ / ₂ element	120V/5A	4 mA–20 mADC	None	WTD025J	WTD025Z
3 \emptyset 4-wire	3 element	120V/5A	4 mA–20 mADC	None	WTD030J	WTD030Z

AC VAR TRANSDUCER—CAN SIZE "2"

Connection	No. of Elements	Rating	Output	Aux. Power	Part # ±0.5%	Part # ±0.2%
1 \emptyset 2-wire	1 element	120V/5A	±1 mADC	None	VTB010J	VTB010Z
3 \emptyset 3-wire	2 element	120V/5A	±1 mADC	None	VTB020J	VTB020Z
3 \emptyset 4-wire	2 ¹ / ₂ element	120V/5A	±1 mADC	None	VTB025J	VTB025Z
3 \emptyset 4-wire	3 element	120V/5A	±1 mADC	None	VTB030J	VTB030Z
1 \emptyset 2-wire	1 element	120V/5A	4-12-20 mADC	None	VTD010J	VTD010Z
3 \emptyset 3-wire	2 element	120V/5A	4-12-20 mADC	None	VTD020J	VTD020Z
3 \emptyset 4-wire	2 ¹ / ₂ element	120V/5A	4-12-20 mADC	None	VTD025J	VTD025Z
3 \emptyset 4-wire	3 element	120V/5A	4-12-20 mADC	None	VTD030J	VTD030Z

AC WATT/VAR TRANSDUCER—CAN SIZE "2"

Connection	No. of Elements	Rating	Output	Part # ±0.5%	Part # ±0.2%
1 \emptyset 2-wire	1 element	120V/5A	±1 mADC x 2	WVB010J	WVB010Z
3 \emptyset 3-wire	2 element	120V/5A	±1 mADC x 2	WVB020J	WVB020Z
3 \emptyset 4-wire	2 ¹ / ₂ element	120V/5A	±1 mADC x 2	WVB025J	WVB025Z
3 \emptyset 4-wire	3 element	120V/5A	±1 mADC x 2	WVB030J	WVB030Z
1 \emptyset 2-wire	1 element	120V/5A	W: 4–20mA, VAR: 4-12–20 mA	WVD010J	WVD010Z
3 \emptyset 3-wire	2 element	120V/5A	W: 4–20mA, VAR: 4-12–20 mA	WVD020J	WVD020Z
3 \emptyset 4-wire	2 ¹ / ₂ element	120V/5A	W: 4–20mA, VAR: 4-12–20 mA	WVD025J	WVD025Z
3 \emptyset 4-wire	3 element	120V/5A	W: 4–20mA, VAR: 4-12–20 mA	WVD030J	WVD030Z

AC POWER FACTOR—CAN SIZE "2"

Connection	Lag—Lead	Output	Part # STD TC	Part # Low TC
1 \emptyset 2-wire	-0.5 to 1.0 to +0.5	1-0-1 mADC	PFB010J	PFB010Z
3 \emptyset 3-wire	-0.5 to 1.0 to +0.5	1-0-1 mADC	PFB020J	PFB020Z
3 \emptyset 4-wire	-0.5 to 1.0 to +0.5	1-0-1 mADC	PFB030J	PFB030Z
1 \emptyset 2-wire	-0.5 to 1.0 to +0.5	4-12-20 mADC	PFF010J	PFF010Z
3 \emptyset 3-wire	-0.5 to 1.0 to +0.5	4-12-20 mADC	PFF020J	PFF020Z
3 \emptyset 4-wire	-0.5 to 1.0 to +0.5	4-12-20 mADC	PFF030J	PFF030Z

AC PHASE ANGLE—CAN SIZE "2"

Connection	Phase Angle	Output	Part # ±2°	Part # ±1°
1 \emptyset 2-wire	60°–0–60°	1-0-1 mADC	PAB010J	PAB010Z
3 \emptyset 3-wire	60°–0–60°	1-0-1 mADC	PAB020J	PAB020Z
3 \emptyset 4-wire	60°–0–60°	1-0-1 mADC	PAB030J	PAB030Z
1 \emptyset 2-wire	60°–0–60°	4-12-20 mADC	PAF010J	PAF010Z
3 \emptyset 3-wire	60°–0–60°	4-12-20 mADC	PAF020J	PAF020Z
3 \emptyset 4-wire	60°–0–60°	4-12-20 mADC	PAF030J	PAF030Z

NOTE: Also available in plastic foot-mounted or DIN rail.
For ranges not listed, contact Weschler.

Weschler Transducers

SPECIFICATIONS - ALL AC MODELS

Output	0-1 or ±1mADC into 10kΩ max., 10VDC compliance 4-20mADC into 750Ω max., 15VDC compliance
Response Time	<400ms (0-99% of output)
Output Ripple	0.5% of span, peak-to-peak max
Isolation	2500VAC input to output, power & case 2000VAC aux. power to output & case 500VAC output to case
External Span Adjustment	Zero: ±1% min; Span: ±2% min
Surge Withstand	IEEE472/ANSI C37.90.1-1989, JIS C111 (5kV, 1.2 x 50μs)
Insulation Resistance	>10MΩ@500VDC input/output/power/case
Operating Temperature	-20°C to 60°C; 0-90% RH non-condensing

AC CURRENT & VOLTAGE TRANSDUCERS

Current Models	
Input Burden	<0.2VA
Ovrange	200% of rated input continuous; 1000% of rated input for 5 sec
Voltage Models	
Input Burden	150VAC: <0.8VA; 300 VAC: <1.6VA (TRMS) 150VAC: <1.8VA; 300 VAC: <3.6VA (Avg. Sensing)
Ovrange	120% of rated input continuous
Temperature Drift	±250ppm/°C of span, 0.5% models ±140ppm/°C of span, 0.2% models
Options (specify when ordering)	
50Hz, 50/60Hz or 400Hz operation (60Hz standard)	
230VAC, 24VDC* or 48VDC* Auxiliary Power (*average sensing models only)	

AC WATT & VAR TRANSDUCERS

Input Burden	Voltage: <0.5VA per element @120V Current: <0.2VA per element
Voltage Input Range	100-135VAC, input powered 0.5% models 85-135VAC, input powered 0.2% models 0-120% of rated input, auxiliary powered models
Voltage Ovrange	150% of rated input continuous (aux. powered only)
Current Input Range	10-200% of rated input with accuracy
Current Ovrange	200% continuous, 1000% for 5 seconds
Output Calibration	120VAC/1A = 0-100 watts/element 120VAC/5A = 0-500 watts/element
Temperature Drift	±250ppm/°C of span, 0.5% models ±80ppm/°C of span, 0.2% models
Influences (% of span)	<0.5% for PF, phase interaction or current imbalance

COMBINED AC WATT/VAR TRANSDUCERS

Input Burden	Voltage: <0.5VA per element Current: <0.2VA per element
Voltage Input Range	100-135VAC, input powered 0.5% models 85-135VAC, input powered 0.2% models 0-120% of rated input, auxiliary powered models
Voltage Ovrange	150% of rated input continuous (aux. powered only)
Current Input Range	10-200% of rated input with accuracy
Current Ovrange	200% continuous, 1000% for 5 seconds
Temperature Drift	±250ppm/°C of span, 0.5% models ±80ppm/°C of span, 0.2% models
Influences (% of span)	<0.5% for PF, phase interaction or current imbalance

Options for Watt, VAR & Watt/VAR Models

50Hz or 400Hz operation (60Hz standard)
1AAC Current Rated
240VAC Voltage Rated
480 VAC Voltage Rated (not available on 0.2% units)
120VAC, 240VAC, 24VDC or 48VDC Auxiliary Power
Special Calibration to Customer PT & CT

POWER FACTOR TRANSDUCERS

Specifications same as Combined Watt/VAR Models except:	
Accuracy	±0.01 power factor
Temperature Drift	±500ppm/°C of span, suffix J models ±150ppm/°C of span, suffix Z models
Low Current Detect	<4%
Influences (% of span)	<1% for voltage, <2% for current

Options for PF Models

1 AAC Current Rated
120VAC, 240VAC, 24VDC or 48VDC Auxiliary Power

AC PHASE ANGLE TRANSDUCERS

Specifications same as Combined Watt/VAR Models except:	
Temperature Drift	±500ppm/°C of span, suffix J models ±80ppm/°C of span, suffix Z models
Influences	<0.5° for voltage, <1° for current

Options for Phase Angle Models

50Hz or 400Hz operation (60Hz standard)
1AAC Current Rated
120VAC, 240VAC, 24VDC or 48VDC Auxiliary Power
Full Scale = Lagging Phase Angle
±90° Phase Angle

FREQUENCY TRANSDUCER

Input Burden	<0.1VA @120V
Voltage Input Range	100-135VAC, input powered models ±20% of rated voltage, aux. powered models
Temperature Drift	±250ppm/°C of span, suffix J models ±50ppm/°C of span, suffix Z models
Harmonics	Fundamental through 9th harmonic

Options for Frequency Models

240 Volt Input
24VDC or 48VDC Aux. Power (0.2% models only)
1-0-1 mADC Output

DC TO DC ISOLATION TRANSDUCERS

Input Burden	<1 mA
Output Compliance	10VDC
Accuracy (>10% of range)	±0.5% of FS
Response Time	500ms (0-99%)
Calibration Adjustments	±5% (zero & FS)
Temperature Range	0-40°C, 20-90% RH non-condensing
Isolation	2600VAC input to output, power & case 1000VAC aux power to output & case 1000VAC output to case
Surge Withstand	IEEE472/ANSI C37.90.1-1989 SWC
Auxiliary Power	120VAC ±10%, 2VA

DC TO DC ORDERING INFO

Input	Output	Aux. Power	Case Size	Part #
0-1mADC	4-20mADC	120VAC	2	CLD001J
0-1mADC	0-1mADC	120VAC	2	CLD002J
0-1mADC	0-10VDC	120VAC	2	CLD003J
0-50mVDC	4-20mADC	120VAC	2	CLD101J
0-50mVDC	0-1mADC	120VAC	2	CLD102J
0-50mVDC	0-10VDC	120VAC	2	CLD103J

NK Technologies AC Current Transducers

AT and ATP current transducers combine a current transformer and signal conditioner in a single package. These transducers offer jumper selected current input ranges with proportional industry standard 4-20 mA, 0-5 VDC and 0-10 VDC outputs. The AT and ATP series are designed for application on "linear" or sinusoidal AC loads. Available in a split core or two types of solid core cases.

ATR and ATPR transducers combine a current transformer and True RMS signal conditioner in a single package. The ATR and ATPR series provide True RMS outputs on distorted waveforms found on VFD and SCR outputs or on linear loads in "noisy" power environments. Available in a solid or split core case.

AT & ATP SPECIFICATIONS

	-005 Models	-010 Models	-420 Models
Output Signal:	0-5 VDC	0-10 VDC	4-20 mA
Output Limit:	10 VDC	15 VDC	40 mA
Accuracy:	1.0% FS	1.0% FS	0.5% FS
Frequency Range:	50-60 Hz	50-60 Hz	20-100 Hz
Power Supply:	Self or External	Self or External	Loop or External
Isolation Voltage:	UL Listed to 1270 VAC, Tested to 5 kV		
Sensing Aperture:	-FF Case: 0.55" (14 mm) Diameter -FT Case: 0.75" (19 mm) Diameter -SP Case: 0.85" (21.5 mm) Sq.		
Case:	UL 94V-0 Flammability Rated		
Environmental:	-4 to 122 °F (-20 to 50 °C), 0-95% RH, Non-Condensing		
Listings:	UL 508 Industrial Control Equipment (USA and Canada), CE		

ATR & ATPR SPECIFICATIONS

Output Signal:	4-20 mA, Loop-Powered, True RMS
Output Limit:	23 mA
Accuracy:	0.8% FS (1.0% on ATR3 & 4)
Frequency Range:	10-400 Hz
Power Supply:	24VDC Nom., 40 VDC Max., 120 VAC
Isolation Voltage:	UL Listed to 1270 VAC, Tested to 5 kV (600 VAC on ATR3 & 4)
Sensing Aperture:	-FT Models: 0.75" (19 mm) Dia. -FL Models: 3.0" (76 mm) Dia. -SP Models: 0.85" (21.5 mm) Sq.
Case:	UL 94V-0 Flammability Rated
Environmental:	-4 to 122 °F (-20 to 50 °C), 0-95% RH, Non-Condensing
Listings:	UL 508 Industrial Control Equipment (USA and Canada)



Loading (All Models)

Loop Power:	$R_L < 500\Omega$
External Power:	$R_L > 50k\Omega$
Self Powered:	Accuracy for $R_L > 1M\Omega$, add 1.3% for $R_L = 100 k\Omega$

ORDERING INFORMATION

A	Model	AT	Average sensing, loop or self-powered
B	Input Ranges	0	0-2/5A
		1	0-10/20/50A
		2	0-100/150/200A
		3	0-375/500/750A
		4	0-1000/1333/2000A
C	Output	420	4-20mA
		005	0-5 VDC (0,1,2 only)
		010	0-10 VDC (0,1,2 only)
D	Power	24L	24 VDC Loop Powered (4-20mA only)
		000	Self powered (DC output only)
E	Case	FF	Fixed core, front terminals (0,1,2 only)
		FT	Fixed core, top terminals (0,1,2 only)
		SP	Split core
		FL	Fixed core (3 & 4 only)

A	Model	ATP	Average sensing, ext. powered
		ATPR	True RMS sensing, ext. powered
B	Input Ranges	0	0-2/5A (ATP only)
		1	0-10/20/50A (ATP only)
		2	0-100/150/200A (ATP only)
		3	0-375/500/750A
		4	0-1000/2000A
C	Output	420	4-20mA
		005	0-5 VDC
		010	0-10 VDC
D	Power	24U	24V AC/DC, isolated output
		120	120VAC
E	Case	FF	Fixed core, front terminals (0,1,2 only)
		FL	Fixed core (3 & 4 only)
		SP	Split core (0,1,2 only)

A	Model	ATR	TRMS sensing, loop powered
B	Input	3	0-375/500/750A
		4	0-1000/1333/2000
C	Output	420	4-20mA
D	Power	24L	24VDC, loop powered
E	Case	FL	Fixed core

Crompton AC Current and Voltage Transducers

- CE Compliant (CE Marked)
- Flexible Design with up to Three Transducers in One Housing
- UL Approved
- Enclosure to IEC529 (IP50)
- Flame Retardant
- 35 mm DIN Rail Mount or Key Hole Slots

AC Current, Voltage, Frequency and DC

- Average Sensing and True RMS
- Self Powered and Auxiliary
- Current Measuring to 0.5% Accuracy
- Isolated Input and Output



253

FREQUENCY

Input	Frequency	Output	Catalog Number
120 VAC	45-55 Hz	0-1 mADC	253-THZU-PQFA-AG
120 VAC	55-65 Hz	0-1 mADC	253-THZU-PQFA-AN
120 VAC	45-65 Hz	0-1 mADC	253-THZU-PQFA-AJ
120 VAC	360-440 Hz	0-1 mADC	253-THZU-PQFA-BI

AC CURRENT

	Input	Auxiliary Power	Output	Catalog Number
AC Current—Average Sensing, Single-Phase	5A AC/60 Hz	Self	0-1 mADC	253-TAAU-LSFA-C6
	5A AC/60 Hz	120 VAC	4-20 mADC	253-TALU-LSHG-C6-DG
AC Current—Average Sensing, 3-Phase, 3 DC Outputs	5A AC/60 Hz	120 VAC	0-1 mADC	256-TASU-LSFA-C6-DG
	5A AC/60 Hz	120 VAC	4-20 mADC	256-TALU-LSHG-C6-DG
AC Current—True RMS Sensing, Single-Phase	5A AC/60 Hz	120 VAC	0-1 mADC	253-TARU-LSFA-C6-DG
AC Current—True RMS Sensing, 3-Phase, 3 DC Outputs	5A AC/60 Hz	120 VAC	0-1 mADC	256-TARU-LSFA-C6-DG
AC Current—Bi-Directional	5A AC/60 Hz	Self (120 VAC)	±1 mADC	256-TABU-LSM1-C6-PQ-T3

AC VOLTAGE

Input	Auxiliary Power	Output	Catalog Number
AC Voltage—Average Sensing, Single-Phase			
120 VAC/60 Hz	Self	0-1 mADC	253-TVAU-PQFA-C6
120 VAC/60 Hz	120 VAC	4-20 mADC	253-TVLU-PQHG-C6-DG
AC Voltage—True RMS Sensing, Single-Phase			
120 VAC/60 Hz	120 VAC	0-1 mADC	253-TVRU-PQFA-C6-DG
AC Voltage—True RMS Sensing, 3-Phase, 3 DC Outputs			
120 VAC/60 Hz	120 VAC	0-1 mADC	256-TVRU-PQFA-C6-DG
Input	System	Output	Catalog Number
AC Voltage—Average Sensing, 3-Phase, 3 DC Outputs			
120 VAC/60 Hz	3-Phase, 3-Wire	4-20 mADC	256-TVLU-PQHG-C6-DG
120 VAC/60 Hz	3-Phase, 4-Wire	0-1 mADC	256-TVSU-PQFA-C6-DG
Input	Auxiliary Power	Output	Catalog Number
AC Voltage—Suppressed Zero AC, Expanded Scale			
108-132 VAC	Self	0-1 mADC	253-TVZU-A9FA-C6

Crompton Transducers

AC Power Transducers

- Wide Range of Transducers to Measure All Forms of Power
- Available in Single-Phase, 3-Phase 3- or 4-Wire
- Self Powered Units Permit Voltage Variations Up to 20% of Nominal Input
- Measures both Import and Export Power
- Accuracy Class 0.5



DC/DC & TEMPERATURE

Input	Auxiliary Power	Output	Catalog Number
DC Current	120 VAC	0-1 mADC	256-TTAU-**FA-DG
DC Millivolts	120 VAC	0-1 mADC	256-TTMU-**FA-DG
DC Voltage	120 VAC	0-1 mADC	256-TTVU-**FA-DG
K Thermocouple	120 VAC	0-1 mADC	256-TTNU-KTFA-DG
T Thermocouple	120 VAC	0-1 mADC	256-TTCU-TTFA-DG
J Thermocouple	120 VAC	0-1 mADC	256-TTFU-JTFA-DG

AC POWER

System	Input	Type	Output	Catalog Number
AC Watts (Active Power)				
1 Ph, 2 Wire	120V/5A	1 Element	0-1 mADC	256-TWКУ-QQFA-C6-**
1 Ph, 3 Wire	240V/10A	1 Element	0-1 mADC	256-TWКУ-Q8FA-C6-**
3 Ph, 3 Wire	120V/5A	2 Element	0-1 mADC	256-TWMU-QQFA-C6-**
3 Ph, 4 Wire	120V/5A	2 ½ Element	0-1 mADC	256-TWNU-QQFA-C6-**
** Specify Range				
AC VARS (Reactive Power)				
1 Ph, 2 Wire	120V/5A	1 Element	0-1 mADC	256-TXКУ-QQFA-C6-**
1 Ph, 3 Wire	240V/10A	1 Element	0-1 mADC	256-TXКУ-Q8FA-C6-**
3 Ph, 3 Wire	120V/5A	2 Element	0-1 mADC	256-TXMU-QQFA-C6-**
3 Ph, 4 Wire	120V/5A	2 ½ Element	0-1 mADC	256-TXNU-QQFA-C6-**
** Specify Range				
AC VA (Apparent Power)				
1 Ph, 3 Wire	120V/10A	1 Element	0-1 mADC	256-TYКУ-QQFA-C6-**
3 Ph, 3 Wire	120V/5A	2 Element	0-1 mADC	256-TYMU-QQFA-C6-**
3 Ph, 4 Wire	120V/5A	2 ½ Element	0-1 mADC	256-TYNU-QQFA-C6-**
** Specify Range				
Power Factor (Suits Analog Meters) - Accuracy Class 0.2				
1 Ph, 2 Wire	120V/5A	0-1-0	1-0-1 mADC	256-XFSU-QQFA-C3-Z1-DG
1 Ph, 2 Wire	120V/5A	1-0-1-0-1	1-0-1 mADC	256-XFAU-QQFA-C3-E4-DG
3 Ph, 3 Wire	120V/5A	0-1-0	1-0-1 mADC	256-XFWV-QQFA-C3-Z1-DG
3 Ph, 3 Wire	120V/5A	1-0-1-0-1	1-0-1 mADC	256-XFGU-QQFA-C3-E4-DG
3 Ph, 4 Wire	120V/5A	0-1-0	1-0-1 mADC	256-XFVU-QQFA-C3-Z1-DG
3 Ph, 4 Wire	120V/5A	1-0-1-0-1	1-0-1 mADC	256-XFDU-QQFA-C3-E4-DG

Crompton Power & Energy Transducer Systems

- Replaces multiple single function transducers
- Measures up to 50 electrical parameters
- True 3 and 4 wire measurement
- Power, energy & power quality data
- Pulsed, analogue and digital outputs
- Programmable VT and CT ratios
- Local or remote configuration & monitoring
- DIN rail or base mounted styles

Up to 50 electrical and power quality parameters can be measured and communicated into building management systems or viewed through the PC configuration software.

These transducers can be programmed using the configuration software or the optional Integra display unit. The display unit can be permanently mounted near the transducer, or connected when configuration or status information is required.

SPECIFICATIONS

Input	Voltage	Current
Max Continuous:	120% nominal	120% nominal
Max Short Duration:	2x for 1 sec.	20x for 1 sec.
Burden:	< 0.2 VA	< 0.6 VA
PT Ratio (primary):	up to 400kV **	
CT Primary:	9999:5A **	
Outputs		
RS485:	Two wire half duplex	
Baud Rate:	2400, 4800, 9600, 19200	
Pulsed:	Clean contact SPNO, 100V DC 0.5A max	
Pulse Duration:	60, 100 or 200 milliseconds	
Auxiliary Supply		
AC/DC:	85-287 V AC / 85-312 V DC Absolute, 45-66 Hz	
DC:	10.2-60 V DC Absolute	
Supply Burden:	6VA	
Measuring Ranges		
Voltage:	80-120% of nominal (functional 5-120%)	
Current:	5-120% of nominal	
Frequency:	45-66Hz	
Power Factor:	0.8 capacitive to 0.8 inductive	
THD:	Up to 31st harmonic 0% - 40%	
Energy:	7 digit resolution	
Accuracy		
Voltage, Current:	±0.17% of range	
Frequency:	0.15% of mid frequency	
Power:	±0.2% of range	
Power Factor:	1% of unity	
Reactive Power (VAR):	±0.5% of range	
Apparent Power (VA):	±0.2% of range	
THD:	±1%	
Neutral Current:	±0.95% of range	
Energy:	KWh 1% IEC1036	
KVArh:	2%	
Analog Output:	±0.2%	
Operating Temperature:	-20 to +60°C, <90% RH	
Enclosure	Polycarbonate	
DIN Transducer:	5.5" H x 3.72" W x 3.72" D (140 x 95 x 95mm)	
Base Mount Transducer:	5.2" H x 3.74" W x 5.24" D (132 x 95 x 134mm)	
Display:	4.31" H x 4.31" W x 2.9" D (110 x 110 x 74mm)	
Panel Cut Out (Display):	4.06" (103mm) diameter, 4 studs	

** 360MW max at 120% of relevant input

1560 ▶



ORDERING INFORMATION

To Order: Insert Code for Each Letter to Select Catalog Number.

Example INT-1563-M-5-M-013-1

INT- - - - - -

A	Model
1561	single phase 5A CT input, DIN Rail
1562	single phase 3 wire 5A CT input, DIN Rail
1563	3 phase 3 wire 5A CT input, DIN Rail
1564	3 phase 4 wire 5A CT input, DIN Rail
1581	single phase 5A CT input, Base mount
1582	single phase 3 wire 5A CT input, Base mount
1583	3 phase 3 wire 5A CT input, Base mount
1584	3 phase 4 wire 5A CT input, Base mount
B	Input Voltage
L	57.7 - 139V L-N (1561 & 1581) 114 - 278 V L-L, 57.7 - 139V L-N (1562 & 1582) 100 - 240 V L-L, 57.7 - 139V L-N (1563,4 & 1583,4)
M	140 - 277 V L-N (1561 & 1581) 279 - 480 V L-L, 140 - 240V L-N (1562 & 1582) 241 - 480 V L-L, 140 - 277V L-N (1563,4 & 1583,4)
C	Input Current
5	5A (CT secondary)
D	Auxiliary Supply
L	12 - 48V DC
M	100 - 250V AC/DC
E	Communications Options
010	1 Modbus
012	1 Modbus, 2 analog
013	1 Modbus, 3 analog
014	1 Modbus, 4 analog
110	1 pulse/relay, 1 Modbus
112	1 pulse/relay, 1 Modbus, 2 analog
113	1 pulse/relay, 1 Modbus, 3 analog
114	1 pulse/relay, 1 Modbus, 4 analog
210	2 pulse/relay, 1 Modbus
212	2 pulse/relay, 1 Modbus, 2 analog
410	4 pulse/relay, 1 Modbus
412	4 pulse/relay, 1 Modbus, 2 analog
610	6 pulse/relay, 1 Modbus
612	6 pulse/relay, 1 Modbus, 2 analog
F	Analog Output Range
0	No output
1	0-20 mA, 10V compliance, user configurable as 4-20 mA (3 channels max)
2	0-1 mA, 10V compliance
3	-1/0/+1 mA, 10V compliance
4	0-5 mA, 10V compliance
6	0-10 mA, 10V compliance

Veris Split Core KW Transducers



- Meter electronics and current transformers in a single package
- Split-core system eliminates the need to remove conductors
- Automatic compensation for CT orientation
- Continuous TRMS Readings

SPECIFICATIONS

Input Primary Voltage	208-480VAC rms, 50/60Hz
Number of Phases Monitored	One or Three
Internal Isolation	2000VAC rms
Insulation Class	600VAC rms
Temperature Range	0 to 60°C, 50°C for 2400A
Humidity Range	0 to 95% non-condensing
Accuracy	±1%
Output	4-20mA
Supply Power (current loop)	9-30VDC; 30mA max.
CT Opening	Small 1.5" x 1.25" (38x32mm) Medium 2.9" x 2.45" (73x62mm) Large 5.5" x 2.45" (140 x 62mm)

Models with Modbus and Pulse Outputs also available.

ORDERING INFORMATION

Single CT Models for Use w/ Balanced 3Ø Loads or 1Ø 2 Wire Installations

Model	Voltage	Max. Amps	CT Size
VE/H8041-0100-2	208/240	100	small
VE/H8041-0300-2	208/240	300	small
VE/H8041-0400-3	208/240	400	medium
VE/H8041-0800-3	208/240	800	medium
VE/H8041-0800-4	208/240	800	large
VE/H8041-1600-4	208/240	1600	large
VE/H8041-2400-4	208/240	2400	large
VE/H8042-0100-2	480	100	small
VE/H8042-0300-2	480	300	small
VE/H8042-0400-3	480	400	medium
VE/H8042-0800-3	480	800	medium
VE/H8042-0800-4	480	800	large
VE/H8042-1600-4	480	1600	large
VE/H8042-2400-4	480	2400	large

Three CT Models for Use with Any 3Ø Load or 1Ø 3 Wire Installations

Model	Voltage	Max. Amps	CT Size
VE/H8043-0100-2	208	100	small
VE/H8043-0300-2	208	300	small
VE/H8043-0400-3	208	400	medium
VE/H8043-0800-3	208	800	medium
VE/H8043-0800-4	208	800	large
VE/H8043-4600-4	208	1600	large
VE/H8043-2400-4	208	2400	large
VE/H8044-0100-2	480	100	small
VE/H8044-0300-2	480	300	small
VE/H8044-0400-3	480	400	medium
VE/H8044-0800-3	480	800	medium
VE/H8044-0800-4	480	800	large
VE/H8044-1600-4	480	1600	large
VE/H8044-2400-4	480	2400	large

TRANSducers / SENSORS

Veris Current Switch & Relay



H735 ▲

- Independent switch & relay operation
- Command & status in one device
- Adjustable setpoint
- Relay & switch status LEDs simplify setup



SPECIFICATIONS

Current Range:	1-135A
Sensor Power:	Induced
Insulation Class:	600VAC rms
Frequency Range:	50/60Hz.
Temperature Range:	-15° to 60°C
Humidity Range:	0-95% non-condensing
Setpoint Adjustable:	1-135A
Hysteresis:	10% Typical
Dimensions:	2.95" x 2.68" x 1.04"
Sensor Opening:	0.75" (19mm) Dia.

ORDERING INFORMATION

Model	Relay	Contacts*	Coil	Solid State Output
VE/H735	Form A (SPST)	5(3)A@250VAC, 30VDC, 1/6HP	24VAC/DC 10mA	0.1A@30VAC/DC N.O.
VE/H738	Form A (SPST)	10(5)A@250VAC, 30VDC, 1/3HP	24VAC/DC 10mA	1.0A@30VAC/DC N.O.
VE/H739	Form A (SPST)	10(5)A@250VAC, 30VDC, 1/3HP	24VAC/DC 10mA	0.2A@120VAC/DC N.O.
VE/H748	Form C (SPDT)	8(3.5)A@250VAC, 30VDC, 1/4HP	24VAC/DC 10mA	1.0A@30VAC/DC N.O.
VE/H749	Form C (SPDT)	8(3.5)A@250VAC, 30VDC, 1/4HP	24VAC/DC 10mA	0.2A@120VAC/DC N.O.
VE/H758	Form A (SPST)	10(5)A@250VAC, 30VDC, 1/3HP	9-12VDC 10mA	1.0A@30VAC/DC N.O.
VE/H759	Form A (SPST)	10(5)A@250VAC, 30VDC, 1/3HP	9-12VDC 10mA	0.2A@120VAC/DC N.O.

* Resistive load (inductive load).

Also available in split core style (H930 series)

NK Technologies AC Current Switches

If you control or monitor electric powered loads, you need current switches. Monitor fans, pumps, lights, and heaters for proper operation. Current switches give positive feedback that the load is operating and are much easier to install than alternatives like pressure switches, optical sensors, or zero speed switches.

AS and ASX current switches combine a current sensor, signal conditioner, and limit alarm in a single package. AS1 series are well suited to automation systems of all kinds with their universal solid-state outputs and a wide frequency response. AS3 series have a high current output that works well with relay logic control schemes. ASX series combine the AS3 design with a built in adjustable time delay. All models feature high visibility LED indication and rugged construction. AC monitoring models are available in solid and split core cases.



SPECIFICATIONS

	AS1 Series	AS3 Series	ASX Series	NEW
Power Required:	None – Self Powered	None – Self Powered	None – Self Powered	
Setpoint Range:	1-150A (fixed core) 1.5-150A (split core)	1-6, 6-40, 40-175A (fixed core) 1-6, 6-40, 40-200A (split core)	1.5-12, 12-55, 50-200 A	
Isolation Voltage:	UL Listed to 1270 VAC	UL Listed to 1270 VAC	UL Listed (pending) to 1270 VAC	
Frequency Range:	6-100 Hz	6-100 Hz	50-100 Hz	
Outputs				
Solid State N.O.:	0.2A @ 240 VAC/VDC	1A @ 240 VAC	1.0A @ 240 VAC	
Solid State N.C.:	0.2A @ 135 VAC/VDC	1A @ 240 VAC	1.0A @ 240 VAC	
Solid State -15 Option:	N/A	15A @ 120 VAC, 10A @240 VAC	N/A	
Off State Leakage:	None	NC only: 2.5 mA	NC only: 2.5 mA	
Response Time:	0.120 Second	0.120 Second	0.1 Second	
Hysteresis:	5% of Setpoint	5% of Setpoint	5% of Setpoint	
Sensing Aperture:	0.55", 14 mm Dia. (FF Case) 0.75", 19 mm Dia. (FT Case) 0.85", 21.5 mm Sq. (SP Case)	0.55", 14 mm Dia. (FF Case) 0.85", 21.5 mm Sq. (SP Case)	0.75", 19 mm Dia. (FT Case) 0.85", 21.5 mm Sq. (SP Case)	
Case:	UL 94V-0 Flammability Rated	UL 94V-0 Flammability Rated	UL 94V-0 Flammability Rated	
Environmental:	-58 to 149° F (-50 to 65° C) 0-95% RH, Non-condensing	-58 to 149° F (-50 to 65° C) 0-95% RH, Non-condensing	5 to 158° F (-15 to 70° C)	
Listings:	UL and ULC 508 Listed, CE	UL and ULC 508 Listed, CE	UL and ULC 508, CE (pending)	

ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Example: AS1 - NCU-FT

A - B - C - D

A	Basic Model		C	Case and Connection	
	AS1	AC Sensing, Single Range	FF	Fixed Core, Front Connection	
	AS3, ASX	AC Sensing, 3 Ranges	FT	Fixed Core, Top Connection (AS1, ASX only)	
B	Output		SP	Split Core	
	NOU	AS1 Normally Open	D	Options	
	NCU	AS1 Normally Closed	GO	Fixed GO/No-GO Setpoint (AS1 only)	
	NOAC	AS3, ASX, Normally Open	(blank)	Adjustable Setpoint	
	NCAC	AS3, ASX, Normally Closed	NL	No LED (AS1, AS3 only)	
			15	15A @ 120 VAC Output (AS3 only)	

Noshok Pressure Transducers and Transmitters

- Thin Film and Diffused Semiconductor Sensor
- High Accuracy and Long Term Stability
- Ranges from 2 through 10,000 psi
- Corrosion Resistant Stainless Steel Construction
- Span and Zero Adjustments

Noshok Series 615 and 625 pressure transmitters and transducers are designed to provide a previously unequalled level of performance, utilizing diffused semiconductor or sputtered thin film technology. Series 625 transmitters were developed for applications that require pressure measurement in potentially explosive environments. RFI, EMI, and ESD protection has been engineered in as a standard feature.


615/625


SPECIFICATIONS

Output Signal:	4-20 mA, 2-wire; 1-5 Vdc, 1-6 Vdc, 0-5 Vdc and 0-10 Vdc, 3-wire
Pressure Ranges:	Vacuum and compound through 10,000 psi
Proof Pressure:	0-2 psi through 0-10000 psi: 1.5 times range
Burst Pressure:	0-2 psi through 0-7500 psi: 4 times range 0-10000 psi; 2 times range
Accuracy BFSL: (includes repeatability, hysteresis, and linearity)	±0.25% FS (standard) ±0.125% FS (standard)
Input Excitation:	10-30 Vdc for current output 14-30 Vdc for voltage output
Stability:	±0.2 %FS per year
Temperature Ranges:	Compensated 32 ° to 175 °F/0 to 80 °C Effect ±0.01%/°F of zero and span Medium: 20 ° to 212 °F/-30 ° to 100 °C Ambient: 15 ° to 175 °F/-10 ° to 80 °C
Response Time:	Less than 1 ms
Durability:	100 million cycles minimum
Adjustment:	±5% FS of zero and span
Environmental Protection:	NEMA 4X, IP65 (IEC 529)
Electromagnetic Capability per IEC 1000 (EN 50081, EN 50082):	4-2 ESD Level 2 4-3 Fields (RFI) Level 2, (EN 50081, EN 50082) 4-4 Burst Level 3, 4-5 Surge Level 2
Electrical Protection:	Reverse polarity, overvoltage, and short circuit protection
Shock:	Less than ±0.05% FS effect for 100 g's @ 20 ms
Vibration:	Less than ±0.01% FS effect for 15 g's @ 0-2000 Hz

ORDERING INFORMATION

To Order Insert Number Code for Each Letter to Select Catalog Number

A - B - C - D - E - F

A	Basic Unit			
615	High Performance			
625	Intrinsically Safe; FM, CSA approved			
B	Pressure Range			
	Code	Range	Code	Range
	30V	0-30 "Hg VAC	30/60	30 "Hg/60 psig
	30/15	30 "Hg/15 psig		
	2	0- 2 psig		
	5	0-5 psig	500	0-500 psig
	15	0-15 psig	750	0-750 psig
	30	0-30 psig	1000	0-1000 psig
	60	0-60 psig	2000	0-2000 psig
	100	0-100 psig	3000	0-3000 psig
	150	0-150 psig	5000	0-5000 psig
	300	0-300 psig	7500	0-7500 psig
			10000	0-10,000 psig
C	Accuracy (BFSL)			
1	±0.25% of FS			
2	±0.125% of FS			
D	Output Signal			
1	4-20 mAdc 2-wire			
2	0-5 Vdc, 3-wire (615 only)			
5	0-10 Vdc, 3-wire (615 only)			
E	Process Connections			
2	1/4" NPT male			
8	1/2" NPT male			
F	Electrical Connections			
1	36" cable (connected to option 8)			
3	6 Pin BENDIX (615 only)			
6	1/2" NPT conduit with 36" cable (615 only)			
8	Hirschmann with mating connector			
G	Options			
ORF	Stainless Steel Threaded Orifice			

Series 1800 Attachable Loop Indicator

SPECIFICATIONS

Display:	0.4" digits, -1999 to 9999
Accuracy:	±0.2 % Full Scale, ±1 digit
Update rate:	5 times/second
Filtering:	Digital, field selectable .2, .5, 1 or 1.5 seconds
Range:	The 4-20mA signal from the transmitter can be assigned any display value within the display range. Both scaling points are individually adjustable using the push buttons inside the case
Temp:	Ambient 32 ° to 122°F (0 ° to 50 °C) Effect : ±0.006% Full Scale/ °F
Electrical:	Requires 4-20mA output and Hirschmann (DIN 43650A) connector
Environmental:	IP65, NEMA 4X according to EN 60529/IEC529

Series 1800 Attachable Loop Indicator

- 4 Digit LCD Display
- Rotates for Best Viewing
- Field Installable on 615 Series

ORDERING INFORMATION

NO/1800



Noshok Pressure Transducers and Transmitters

- Thin Film and Diffused Semiconductor Sensor
- High Accuracy and Long Term Stability
- RFI, EMI, and ESD Protection per IEC 1000
- High Overpressure Protection
- Corrosion Resistant Stainless Steel Construction

Series 100 and 200 pressure transmitters and transducers are designed to provide a previously unequalled level of performance, utilizing diffused semiconductor or sputtered thin film technology. Series 100 and 200 transducers are highly accurate, shock resistant and extremely stable over a long period of time.

ORDERING INFORMATION

To Order: Insert Number Code for Each Letter to Select Catalog Number
Order Example: 100-7500-1-5-2-7-ORF

A	B	C	D	E	F
A Basic Unit					
100	4-20 mAdc Output				
200	DC Voltage Output				
B Pressure Range					
Code	Range	Code	Range		
30V	0-30" VAC	30/60	30"/60 psig		
30/15	30"/15 psig	30/150	30"/150 psig		
30/30	30"/30 psig				
5	0-5 psig	1000	0-1000 psig		
30	0-30 psig	1500	0-1500 psig		
60	0-60 psig	2000	0-2000 psig		
100	0-100 psig	3000	0-3000 psig		
200	0-200 psig	5000	0-5000 psig		
300	0-300 psig	7500	0-7500 psig		
500	0-500 psig				
10000	0-10000 psig				
15A	0-15 psia	150A	0-150 psia		
30A	0-30 psia	200A	0-200 psia		
60A	0-60 psia	300A	0-300 psia		
100A	0-100 psia				
C Accuracy (BFSL)					
1	±0.5% of FS				
2	±0.25% of FS				
D Output Signal					
1	4-20 mAdc, 2-wire (100 only)				
2	0-5 Vdc, 3-wire (200 only)				
4	1-6 Vdc, 3-wire (200 only)				
5	0-10 Vdc, 3-wire (200 only)				
E Process Connections					
1	1/8" NPT male				
2	1/4" NPT male				
3	7/16" 20 UNF-2A male				
F Electrical Connections					
1	36" cable (connected to option 7)				
2	4-pin BENDIX				
3	6-pin BENDIX				
6	1/2" NPT Conduit with 36" Cable				
7	Mini Hirschmann with mating connector				
G Options					
ORF	Stainless steel threaded orifice				



100



SPECIFICATIONS

Output Signal:	4-20 mA, 2-wire; 0-5V, 3-wire; 0-10V, 3-wire; 1-6V, 3-wire; 1-5V, 3-wire; 1-11V, 3-wire
Pressure Ranges:	Vacuum and compound through 15,000 psi; gauge and absolute
Proof Pressure:	0-5, 0-10, 0-7500 through 0-15000 psi: 1.5 times range 0-15 psi through 0-6000 psi: 2 times range
Burst Pressure:	0-5, 0-10, 0-7500 through 0-15000 psi: 2 times range 0-15 psi through 0-6000 psi: 5 times range
Accuracy BFSL: (includes repeatability, hysteresis, and linearity)	±0.5% FS (standard) ±0.25% FS (optional)
Repeatability:	±0.05% FS
Hysteresis:	±0.1% FS
Input Excitation:	14-30 Vdc for voltage output; 12-30 for 4-20 mA
Temperature Ranges:	Compensated 0 ° to 175 °F/-16 to 80°C Effect ±0.02% FS/°F for zero and span Medium -22 ° to 212 °F/-30 ° to 100 °C Ambient -40 ° to 185 °F/-40 ° to 85 °C
Response Time:	Less than 1 ms (between 10-90% FS)
Durability:	100 million cycles minimum
Adjustment:	±5% FS of zero and span
Environmental Protection:	NEMA 4X, IP65 (IEC 529)
Electromagnetic Compatibility per IEC 1000 (EN 50081, EN 50082):	4-2 ESD Level 2 4-3 Fields (RFI) Level 2, (EN 50081, EN 50082) 4-4 Burst Level 3, 4-5 Surge Level 2
Electrical Protection:	Reverse polarity, overvoltage, and short circuit protection
Shock:	Less than ±0.05% FS effect on 100 g's @ 20 ms on any axis
Vibration:	Less than ±0.05% FS effect for 30 g's @ 5-2000 Hz on any axis

Noshok Pressure Transmitter

- Up to 20:1 Span Turn Down
- Proven Diffused Semiconductor or Sputtered Thin Film Strain Gage Technology
- Built-in Process Temperature Display
- Built-in Selectable Process Digital Filtering
- Welded 316 S/S Pressure Chamber
- 32 Point Process Linearization
- Adjustable Display for Easy Viewing
- 12 Different Measurement Units
- CE Compliant

The NOSHOK Series 750 digital pressure transmitter combines the reliability and long life of diffused semiconductor and sputtered thin film strain gage sensors with digital electronics for outstanding performance and value. With up to 20:1 span turn down and -2.5 to 99% zero point adjustment there is maximum flexibility to meet the most unusual application requirements. Additional features including 32 point process linearization, adjustable display orientation and integral process temperature measurement give the Series 750 an advantage over many other pressure transmitters.



▲ 750

ORDERING INFORMATION

To Order Insert Number Code for Each Letter to Select Catalog Number
Order Example: 750-1500-1-1-2-1-ORF

A	B	C	D	E	F
A Basic Unit					
750	Digital Pressure Transmitter				
B Pressure Range	Code	Range	Code	Range	
	5	0 to 5 psig	1500	0 to 1500 psig	
	25	0 to 25 psig	3000	0 to 3000 psig	
	100	0 to 100 psig	7500	0 to 7500 psig	
	250	0 to 250 psig	15000	0 to 15000 psig	
	500	0 to 500 psig			
	5A	0 to 5 psia	100A	0 to 100 psia	
	25A	0 to 25 psia	250A	0 to 250 psia	
C Accuracy (BFSL)					
1	±0.05% of FS				
D Output Signal					
1	4 to 20 mA, 2-wire				
E Process Connections					
2	1/4" NPT male				
8	1/2" NPT male				
F Electrical Connections					
1	Cable gland M2-x1.5 with internal terminal block, accepts cable diameter from .25 to .5 inch				
G Options					
ORF	Stainless steel threaded orifice				

SPECIFICATIONS

Output Signal:	4 to 20 mA, 2-wire
Accuracy	±0.05% Full Scale (Best Fit Straight Line), including the effects of linearity, hysteresis and repeatability; ±0.15% Full Scale for 0 to 15000 psig range
Total accuracy:	±0.15% Full Scale Full Scale, including the effects of linearity, hysteresis
Hysteresis:	±0.04% Full Scale
Repeatability:	±0.05% Full Scale
Stability:	±1 % Full Scale for 1 year
Pressure ranges:	Standard ranges from vacuum through 15,000 psig
Proof pressure:	3.5 times Full Scale for ranges through 0 to 250 psig; 2 times Full Scale for ranges greater than 0 to 250 psig through 0 to 7,500 psig; 1.2 times Full Scale for 0 to 15,000 psig;
Burst Pressure	5 times Full Scale for ranges 0 to 5psi through 0 to 7 500 psi 2 times Full Scale for higher ranges
Power supply:	10 to 30 Vdc, unregulated
Turn down effect on accuracy	Turn down up to 5:1, no effect on accuracy
Adjustment:	Turn down greater than 5:1, accuracy x turndown/5
Response time:	<10 milliseconds (between 10% and 90% Full Scale)
Temperature ranges	Compensated -4° to 176°F (-20° to 80°C) Zero effect is ±0.01% Full Scale/°F within compensated range Span effect is ±0.01% Full Scale/°F within compensated range Ambient -4° to 158°F (-20° to 70°C) Media -22° to 221°F (-30 to 105°C) Storage -31° to 176°F (-35 to 80°C)
Wetted materials:	316 stainless steel (ranges up through 0 to 250 psi) 316 stainless steel with 17-4PH stainless steel diaphragm (ranges 0 to 500 psig and higher)
Housing material:	Fiberglass reinforced PBT (polybutylene terephthalate)
Environmental rating:	IP65, NEMA 4X according to EN 60529/IEC529
Electromagnetic rating:	CE compliant, emission to EN 50081-1. EN 50081-2 compatibility and EN 50082-2 (Radio Frequency Interference, Electromagnetic Interference and Electrostatic Interference protection)
Electrical rating:	Reverse polarity, over-voltage and short circuit protection
Shock:	100g's according to IEC770 for mechanical shock
Vibration:	5g's according to IEC770 under resonance conditions
Weight:	Approximately 24 oz.

Ashcroft Digital Pressure Gauges

- 4 1/2" Digit Display, 1/2" Character Height
- Maximum Pressure Indication
- Selectable Engineering Units
- Chemical Resistant Case
- Optional Weatherproof Boot

The D1005PS is a versatile and economical choice for general pressure applications. Stainless steel wetted parts are suitable for dry air and many other media. Popular features such as backlight, peak hold and engineering units display are standard on the D1005PS.



D1005PS

- 1/4% Full Scale Accuracy
- Extra Large 5 Digit Display
- 4-20mA & Switch Outputs in One Unit (2274)
- NEMA4, IP65 Case
- Selectable Damping, Update Rate, Engineering Units, Auto-Off
- Min/Max (Peak Hold) Display



2174

Specify these multi-function digital gauges when any combination of local indication, 4-20mA output and switching is required. Easy menu configuration speeds installation & setup. All points between zero and full scale remain within stated accuracy even after rezeroing.

SPECIFICATIONS

Case Size:	2 1/2", Noryl®
Accuracy:	1/2% FS standard, 1/4% available
Connection:	1/4 NPT, bottom
Power:	2 AAA batteries 4 level battery indicator in display
Temperature:	-10 °C to 60 °C (14-140 °F)
Proof Pressure:	200%, up to 1000psi 150%, 3000 & 5000psi 120%, 9999psi

Keypad Functions:	
Auto/Off:	Never, 5, 10, 20 minutes
Backlight:	4 auto off options
Max (Peak Hold):	Displays peak value
Zero/Clear:	Zeroes display or clears max value
Engineering Units:	psi, in.H ₂ O, cmHg, mmHg, kPa, mPa, Bar, kg/cm ² , ft.H ₂ O
Field Calibration:	Zero and span

ORDERING INFORMATION

To Order - Insert Range Code and Units to Complete Catalog Number. AS/D1005PS02L-30psi

AS/D1005PS02L - **A**

A Range (include units suffix)

psi	ftH ₂ O	inH ₂ O	inHg/psi
30	70	-30/0	-30/30
60	140	(vacuum)	-30/60
100	230		-30/100
200	460		-30/150
300	700		-30/300
500			(compound)
1000			
3000			
5000			
9999			
10000			
15000			
19999			

Also available:

- kPa, MPa, bar, kg/cm² pressure ranges;
- kPa, mmHg, cmHg, bar, kg/cm² vacuum ranges;
- kPa, bar, kg/cm², ftH₂O compound ranges.

Options:

- ±0.25% of span accuracy
- Protective boot
- 3, 9, 12 o'clock connections

SPECIFICATIONS

Digit Height:	(3") 0.6", (4 1/2") 0.88"
Bargraph:	10 segment % of range
Temperature:	10-60 °C (14-140 °F)
Proof Pressure:	200%
Loop Power:	12-36 VDC
Battery:	(3") Two AA, (4 1/2") Two C
Switch Rating:	30VDC/1A, 25VAC/0.5A
Approvals:	CE, FM, CSA

ORDERING INFORMATION

To Order - Insert Code for Each Letter to Select Catalog Number. Example AS/302274SD02L -100psi-XU1BL

AS/ **A** **B** **C** **D** - **E** - **F**

A Case	30 3" stainless steel 45 4 1/2" thermoplastic	F Options X followed by one or more 2 digit codes: AY Black aluminum case for 4 1/2" size EC Electro polished case for 3" size U1 One SPDT switch (2274 only) U2 Two SPDT switch (2274 only) AO 4-20mA output for 2274 EN Flying leads for 4 1/2" case (terminal blocks std for 4 1/2" case, flying leads std for 3" case) BL Display backlight BK Battery backup for 2174 & 2274 S7 Weatherproof carry case (3" only) B1 Black rubber boot (3" only) B2 Orange rubber boot (3" only) PP Protective front cover (3" only)
B Model	2074 Battery powered 2174 Loop powered, 4-20mA output 2274 Line powered (12-36 VDC, 2VA)	
C Wetted Parts	SD 316 stainless steel (socket) 17-4 stainless steel (sensor)	
D Connection	02L 1/4 NPT 04L 1/2 NPT (4 1/2" case only)	

E Range (include units suffix)

psi	ftH ₂ O	inH ₂ O*	mmH ₂ O	inHg	mmHg	compound
30	30	800	60	60	1500	15#/vac
60	60	1000	100	100	2000	30#/vac
100	160		160	160	3000	60#/vac
160	200		200	200		
200	200		300	300		
300	300		400	400		
600	400		600	600		
800	600		800	800		
1000	1000		1000	1000		
1500				1600		
2000				2000		
3000				3000		
5000				6000		
8000						
10000						
15000						
20000						

* 20 °C, 60 °C & 4 °C reference options

Ashcroft Pressure Gauges

- 4 1/2", Grade 2A (±0.5% FS)
- Long Life, Teflon Coated Movement
- Adjustable, Self-Locking Pointer
- Temperature Compensated
- Liquid-Filled Performance in a Dry Gauge (option XLL)

The 1279 series is designed for long life in harsh industrial applications. The phenolic case provides superior chemical and heat resistance. Five bourdon tube systems handle a wide range of pressures and a variety of media. The Plus™ Performance option (XLL) reduces the effects of pulsations and vibrations without the maintenance problems of liquid filling.



▲ **1279 Duragauge®**

ORDERING INFORMATION

To Order - Insert Code for Each Letter to Select Catalog Number.
Example: AS/1279BS02LXLLSG-0/3000psi

AS/451279 A B C D - E

AS/451279 4 1/2" Duragauge, grade 2A	
A	Tube/Socket Material (max. psi)
A	Phosphor bronze/brass (1000)
B	4130 steel/1019 steel(5000)
R	316 stainless/1019 steel (20000)
S	316SS/ 316SS (20000)
P	K Monel/Monel 400 (30000)
B	Case
S	Solid front
SH	Solid front, hermetic seal
SL	Solid front, liquid fill
C	Connection
02L	1/4 NPT, lower
04L	1/2 NPT, lower
02B	1/4 NPT, back
04B	1/2 NPT, back
D	Options X followed by 1 or more 2 digit codes
LL	Dynamic dampening
OS	Overload stop
TS	Throttle screw
SG	Safety glass
PD	Plastic window
NN	Paper tag
NH	Stainless steel tag
GV	Silicone filled
E	Range (include units suffix)

psi		Compound	Vacuum
0/15	0/800	30"Hg/15psi	30/0 inHg
0/30	0/1000	30"Hg/30psi	34/0 ftH ₂ O
0/60	0/1500	30"Hg/60psi	
0/100	0/2000	30"Hg/100psi	
0/160	0/3000	30"Hg/150psi	
0/200	0/5000	30"Hg/300psi	
0/300	0/10000		
0/400	0/20000		
0/600	0/30000		

Metric ranges also available.
Other features and options available on request.

Call for information on other Ashcroft dial gauges, including:

- Type 1009 2 1/2" & 3 1/2" Process Gauges, with ranges from vacuum to 15000 psi (Grade 1A, ±1% FS)
- Type 1083 3" Test Gauges, with ranges from vacuum to 1000 psi (Grade 2A, ±0.5% FS)

- 4 1/2", Grade 2A (±0.5% FS)
- 4-20 mA, 2-Wire Output
- Adjustable Zero & Span
- Hermetically Sealed Phenolic Case
- FM Approved to 10,000psi

Reliable Duragauge® construction provides the analog pressure indication. An isolated optical sensor drives the transmitter output.



▶ **2279 Duratran®**

SPECIFICATIONS

Operating Temperature:	-40°F to 160°F
Overpressure:	130% of range w/o damage to tube
Power Supply:	12-40VDC
Loop Resistance:	500Ω max at 24V, 1kΩ max at 36V
Adjustments:	Transmitter span & zero adjustment on dial, Gauge zero adjustment on pointer
Case:	Phenolic, hermetically sealed
Lens:	Laminated safety glass
Electrical:	30" leads, 1/2" liquid tight conduit fitting

ORDERING INFORMATION

To Order - Insert Code for Each Letter to Select Catalog Number.
Example AS/452279P04LXFMLL - 0/3000psi

AS/452279 A B C D - E

AS/ 2279 4 1/2" Duratran, grade 2A	
A	Tube/Socket Material
S	316SS / 316SS
P	K Monel / Monel 400
B	Case
SH	Solid front, hermetic seal
C	Connection
04L	1/2 NPT, bottom
D	Options X followed by 1 or more 2 digit codes:
LL	Dynamic damping
FM	FM approval
PD	Plastic window
NN	Paper tag
NH	Stainless steel tag
GB	Oxygen cleaned
E	Range (add psi suffix)

psi	
0/12	0/600
0/15	0/800
0/30	0/1000
0/60	0/1500
0/100	0/2000
0/160	0/3000
0/200	0/5000
0/300	0/10000
0/400	0/20000

Metric, vacuum, compound, dual scale & receiver gauge dials available on request.
Use 2288 series for lower ranges

Ashcroft Test Gauges

- Rugged & Portable
- 0.05% FS Total Error Band
- 0.66" Display Characters
- NEMA 4, IP65 Stainless Steel Case
- Selectable Damping, Update Rate, Engineering Units, Languages
- Meets ASME B40.7



▲ 2089

These Precision Digital Test Gauges are available with 0.05%, 0.1% or 0.25% total error band (TEB) accuracy. TEB accuracy includes the effects of linearity, hysteresis, repeatability and temperature from 0 to 150°F. Ashcroft uses the conservative terminal point accuracy method for TEB. This allows rezeroing to eliminate sensor offset. All points between zero and full scale remain within stated accuracy.

SPECIFICATIONS

Dial:	3"
Case:	300 series stainless steel, electroplated, weatherproof
Proof pressure:	2X gauge pressure
Display:	4 1/2" digit backlit LCD
Bargraph:	10 segment % of range
Temperature:	-18 to 63°C (0-150°F)
Battery:	3 AAA, >1000 hours
EMI:	CE EN50082-1 (1997)

Keypad Functions

Engineering Units: psi, "Hg, "H₂O, ftSW, Bar, mBar, kPa, mPa, mmHg, cmH₂O, mmH₂O, kg/cm²

Update Rate:	10/sec, 5/sec, 2/sec, 1/sec
Auto off:	2, 5, 15, 30 min, never
Dampening:	None, 2, 4, 6, 8 readings
Min/Max:	Stores min/max values when displayed
Zero/Clear:	Zeros display or clears min/max values
Backlight:	on/off, 10 sec., 30 sec., 1 min., 5 min.
Language:	English, Spanish, French, Italian, German, Portuguese, Dutch
Contrast:	Seven levels
Calibration:	10 points, password protected
Configuration:	Scroll thru menu & option choices

ORDERING INFORMATION

To Order - Insert Code for Each Letter to Select Catalog Number.

Example AS/302089SD0L-100psi-XDB1

AS/30 A B C - D - E

A Model
2089 0.05% FS accuracy
2086 0.10% FS accuracy
2084 0.25% FS accuracy
B Wetted Parts
SD 316 stainless steel
C Connection
02L 3/4 NPT, lower
D Range (include units suffix)

E Options
XD 3 o'clock connection
XE 9 o'clock connection
B1 Black rubber boot
B2 Orange rubber boot
NH Metal Tag
NN Paper Tag
CD1 Certificate of Conformance
C4 Certified Calibration data (standard w. 2089)

psi	Compound	psi (absolute)
10	600 15#/vac	15
15	800 30#/vac	25 ⁽¹⁾
30		50
60		
100	2000 ⁽²⁾	
160	2500 ⁽¹⁾	
200 ⁽²⁾	3000	
300	5000	
500	7000	

Temperature options 4°C, 20°C, 60°F.
Metric units available on request.
(1) 2086 and 8084 only.
(2) Accuracy meets ASME B40.7 resolution requirements through 199.9 psi (200 psi) and 1999.9 psi (2000 psi).

Ashcroft Pressure Switches

- Long Life Sensor & Relay (>10 million operations)
- Watertight Metal Enclosure
- Deadband Adjustable to 0.5%
- Bright Local Display (optional)



▲ NPI

This electronic pressure switch will outlast mechanical switches in high cycle applications. The pressure sensor is a stable thin film transducer with proven reliability and long life. The adjustable, narrow deadband solves many pipeline and elevated tank applications that cannot be satisfied with mechanical products. An optional LED display provides local pressure indication and simplifies switchpoint setup.

SPECIFICATIONS

Enclose:	Epoxy coated aluminum NEMA 3, 4, 4X, 13 & IP66 Optional NEMA 7, 9 & Div I or II hazardous locations
Wetted Parts:	14-4 PH stainless steel diaphragm AISI 316 stainless steel fitting
Display:	3 1/2 digit LED indicates process pressure ±1%
Status Lights:	Process pressure, set pressure, reset pressure, relay output
Output:	SPDT Relay rated 10A @250VAC/30VDC
Life:	>10 million operations at rated load
Electrical:	3/4 NPT connection

ORDERING INFORMATION

To Order - Insert Number Code for Each Letter to Select Catalog Number. Example: AS/NPAN7DCS02-100psi

AS/ A B C D E F - G

A Function	G Range	psi	Setpoint Limits	psi Proof	psi Burst
		NPA Single setpoint, adjustable deadband	60	3-60	120
NPI Single setpoint, adjustable deadband, process and setpoint display	100	5-100	200	800	
B Enclosure	200	10-200	400	1600	
					N4 Watertight NEMA 3,4, 4X, 13 & IP66
N7 Explosion proof NEMA 3, 4, 4X, 13, 7, 9 & IP66 (NPA only)	300	15-300	600	2400	
					C Output
D SPDT Relay	500	25-500	1000	4000	
D Power Equipment					
L 110VAC, 50/60Hz	750	35-750	1500	6000	
C 24VDC					
V 250VAC, 50/60Hz	1000	50-1000	2000	8000	
E Pressure Port					
S01 1/8 NPT Male	3000	150-3000	4500	20000	
S02 1/4 NPT Male					
S03 1/8 NPT Female	5000	250-5000	7500	22500	
S04 1/4 NPT Female					
S05 7/16 - 20 SAE - 1/4 SAE	7500	375-7500	9000	25000	
S06 1/2 NPT Male & 1/4 NPT Female					
S07 1/4 AMINCO - Female	10000	500-10000	12000	30000	
F Option					
XEA External Setpoint Adjustment	15000	750-15000	18000	45000	
- None					
	20000	1000-20000	24000	60000	

Kobold Temperature Transmitters

- 4-20mA Output
- Hermetically Sealed Electronics
- Easily Re-Programmable via PC
- Low Cost and Easy Installation

The TST transmitter fits in a low profile housing which is only 2" long. PC calibration software allows temperature range, offset, burnout options and other features to be field selected without recalibration.

TST



SPECIFICATIONS

Maximum Pressure:	
Threaded Version:	1500 PSIG
Tri-clamp Version:	500 PSIG
Probe Material:	316 Stainless Steel
Power Required:	9-30 VDC loop powered
RTD Type:	Pt100, class B
Output Accuracy:	±0.1% of Span
Ambient Temperature:	-40°F to 158°F

ORDERING INFORMATION

To Order - Insert Code for Each Letter to Select Catalog Number.
Example KO/TST-A4-040-PV-06-C

KO/TST - - - - -

A Fitting Style

A2	1/4" NPT, Adjustable immersion depth
A4	1/2" NPT, Adjustable immersion depth
F2	1/4" NPT, fixed immersion depth
F4	1/2" NPT, fixed immersion depth
T15	1 1/2" Tri-clamp
T2	2" Tri-clamp
T25	2 1/2" Tri-clamp
T3	3" Tri-clamp

B Available Immersion Depth

025	2.5"	040	4"
060	6"	090	9"
120	12"	180	18"
240	24"	EP	Custom (specify)

C Cable (6' standard length)

PV	PVC jacket (220°C process max)
TF	Teflon jacket
TA	316 SS armored
TB	316 SS braided
0	None (use for option H)(BELOW)

D Available Measuring Range

02	0 to 120°F	04	0 to 200°F
06	0 to 300°F	08	0 to 400°F
10	0 to 500°F	12	0 to 750°F
14	0 to 950°F	16	0 to 1100°F
18	-58 to 120°F	E	Custom scaling (specify)

E Options

C	1/2" NPT conduit hub
H	DIN43650 Hirshmann Plug in place of cable
EC	Extended cable length, specify length

KO/TST-PKIT Field calibration kit includes 9pin serial cable, 110VAC power pack & Windows software

- 4-20mA Output, Loop Powered
- Rugged 316 SS Construction
- -200 to 600°C Range
- Adjustable Zero & Span

The TMA series is factory calibrated. Zero and span potentiometers are accessible at the connector for recalibration.



TMA
with optional
AUF display

SPECIFICATIONS

Ambient Temperature:	-40°C to +70°C
Max. Pressure:	1450 PSIG
Probe:	316 SS, 1/4" dia
Power Required:	12-36 VDC
RTD Type:	Pt100, class B
Output Accuracy:	±0.1% of Span
Connector:	Hirshmann plug
Protection:	NEMA 4X, IP65

ORDERING INFORMATION

To Order - Insert Code for Each Letter to Select Catalog Number.
Example KO/TMA-S2514A-025-05

KO/TMA - - -

A Fitting Style

S2514F	1/4" NPT, Fixed immersion depth
S2512F	1/2" NPT, Fixed immersion depth
S2514A	1/4" NPT, Adjustable depth
S2512A	1/2" NPT, Adjustable depth

B Available Immersion Depth

025	2.5"	040	4"
060	6"	090	9"
120	12"		

C Available Measuring Range

05	0 to 50°C (32/122°F)
10	0 to 100°C (32/212°F)
15	0 to 150°C (32/302°F)
20	0 to 200°C (32/392°F)
40	0 to 400°C (32/752°F)
60	0 to 600°C (32/1112°F)
55	-50 to 50°C (-58/122°F)
51	-50 to 150°C (-58/302°F)
24	-200 to 400°C (-328/752°F)
26	-200 to 600°C (-328/1112°F)
E	Custom (specify)

The AUF display can be added to any 4-20 mA output that uses the Hirshmann connector. Installed between the transmitter and the cable, the AUF is fully scalable through two control buttons. Power is provided by the 4-20 mA loop, so no additional power supply is required.

SPECIFICATIONS

Display:	4-digit red LED 5/16" tall	Sampling Rate:	0.33-20s, adjustable
Range:	-1999 to 9999	Switch:	Open Collector, 60mA max., PNP
Loop Voltage Load:	5 volts	Protection:	NEMA 4

ORDERING INFORMATION

KO/AUF1000 Local Digital Display KO/AUF1001 Local Display w/Alarm

Raytek Infrared Temperature Sensors

CI Series Compact Infrared Sensor



- Type J or K, or 0-5 V Output
- IP 65 (NEMA-4) Stainless Steel Electronics Housing
- 4:1 Optics at 90% Energy
- Powered by 12-24VDC at 20mA

Replaces traditional probes with J-type or K-type thermocouple output.

Functions accurately when used in conjunction with the thermocouple break protection circuitry in most controllers, displays, and transmitters.

SPECIFICATIONS

Spectral Response	7 to 18 μm
Accuracy	$\pm 2\%$ or $\pm 3^\circ\text{C}$
Resolution	0.5°C
Response Time	350ms (95%)
Emissivity	fixed at 0.95
D:S Ratio	4:1
Cable	1m (3.3') standard
Output Impedance (J/K)	50 Ω
Minimum Load (mV)	50k Ω
Power	12-24VDC $\pm 5\%$, 20mA
Ambient Temperature:	
Sensing head	0 to 70°C
With air cooling	up to 90°C
With water cooling	up to 260°C
Relative Humidity	10 to 95%, non-condensing
Size	0.75" dia. x 3.4" long

ORDERING INFORMATION

RA/CI-1A	IR Temperature Sensor, J T/C, 0-155 $^\circ\text{C}$
RA/CI-2A	IR Temperature Sensor, K T/C, 0-155 $^\circ\text{C}$
RA/CI-3A	IR Temperature Sensor, 10mV/ $^\circ\text{C}$ Linear Voltage, 0-155 $^\circ\text{C}$
RA/CI-1B	IR Temperature Sensor, J T/C, 100-500 $^\circ\text{C}$
RA/CI-2B	IR Temperature Sensor, K T/C, 100-500 $^\circ\text{C}$
RA/CI-3B	IR Temperature Sensor, 10 mV/ $^\circ\text{C}$ Linear Voltage, 100-500 $^\circ\text{C}$

OPTIONS / ACCESSORIES

-10L	3m (10') Cable, 105 $^\circ\text{C}$
-W	Air/water cooled jacket with lens purge & 1m (3.3') 260 $^\circ\text{C}$ cable
RA/CIADJB	Adjustable mounting bracket
RA/CIACFB	Fixed mounting bracket
RA/CIACRA	Right angle mirror
RA/CIAP	Air purge collar
RA/CI1CON	Thermocouple cable extension connector kit for CI1
RA/CI2CON	Thermocouple cable extension connector kit for CI2
RA/CIACCB10H	3 Meter (10', 260 $^\circ\text{C}$) extension cable
RA/CIACCB50H	15 Meter (50', 260 $^\circ\text{C}$) extension cable

MI Series Miniature Infrared Sensors

- Adjustable Emissivity, Peak/Valley Hold & Averaging
- 1% Accuracy from -40 to 600°C (-40 to 1112°F)
- 10:1 Optics
- Sensing Head Accessible for Cleaning
- RS-232 Communications (RS-485 optional)



Two-piece infrared temperature measurement system with a miniature sensing head and die-cast electronics housing.

SPECIFICATIONS

Resolution	0.3°C or 0.5°F
Temperature Range	-40°C to 600°C (-40°F to 1112°F) -25°C to 600°C for JT/C Output
Outputs	4-20mA, 0-20mA, 0-5V (scaleable) J or K thermocouple 10 mV/ $^\circ\text{C}$ head ambient signal
Output Impedance (T/C)	20 Ω
Minimum Load Impedance (mV)	100k Ω
Maximum Loop Impedance	(mA output) 500 Ω with 24VDC power supply
Power	11-26VDC, 100mA
Environmental Rating	IP65 (NEMA-4)
Ambient Temperature:	
MID Sensing Head	0 to 85°C (32 to 185°F)
MIC Sensing Head	0 to 125°C (32 to 257°F)
MIH Sensing Head	0 to 180°C (32 to 356°F)
With air cooling	up to 200°C
Electronics housing	0 to 65°C
Temperature Coefficient	MID 0.15K/K or 0.15%/K MIC, MIH 0.05K/K or 0.05%/K
Size	Sensor 0.55" dia x 1.1" long Housing 3.2" x 2.4" x 1.0"
Spectral Response:	8 to 14 μm
System Accuracy:	(18-28 $^\circ\text{C}$ ambient)
LT	$\pm 1\%$ or $\pm 1^\circ\text{C}$
Thermocouple output	$\pm 1\%$ or $\pm 2.5^\circ\text{C}$
Repeatability	$\pm 0.5\%$ or $\pm 0.5^\circ\text{C}$
System Response Time	150ms (95%)
Emissivity Transmission	0.100 to 1.100 digitally adjustable

ORDERING INFORMATION

RA/MID-10LT	Univ. Output, 10:1 optics, 1m cable, 85 $^\circ\text{C}$ max sensor ambient
RA/MIC-10LT	Univ. Output, 10:1 optics, 1m cable, 125 $^\circ\text{C}$ max sensor ambient
RA/MIH-10LT	Univ. Output, 10:1 optics, 1m cable, 185 $^\circ\text{C}$ max sensor ambient

OPTIONS/ACCESSORIES

- 4	RS485 Multidrop Communication
- CB3	3m (10') Cable
- CB8	8m (26') Cable
- CB15	15m (49') Cable
- V	Display window in electronic housing
RA/XXXMIACFB	Fixed Mounting Bracket
RA/XXXMIACAB	Adjustable Mounting Bracket
RA/XXXMIACAJ	Air Purge Collar
RA/XXXMIACCJ	Air Cooling and Purge System (includes 2.8' insulated air hose)
RA/XXXCIDCPS	Power Supply, 24VDC

Raytek Programmable IR Sensors



▲ CM

- -20 to 500°C (-4 to 932°F) Range
- 13:1 Optics at 90% Energy
- 150ms (95%) Response Time
- RS-232 Digital Communications
- Adjustable Signal Processing
- DataTemp® Multidrop Software Compatible
- Sensor status indicator LED

Designed for easy integration, the CM sensor with J-type or K-type thermocouple output can easily replace traditional contact probes. A user scalable 0-5 volt output is available for applications susceptible to noise. This rugged, single piece NEMA4 sensor has silicon optics to provide excellent optical resolution.

SPECIFICATIONS

Accuracy (mV):	± 1.5% of reading or ± 2°C
Accuracy (T/C):	± 1.5% of reading or ± 4°C
Spectral Response:	8 to 14 microns
Resolution:	0.1°C
Emissivity:	0.10 to 1.10 (adjustable)
Transmissivity:	0.10 to 1.00 (adjustable)
Signal Processing:	Peak hold, valley hold, variable averaging
Output:	100Ω Zout (TC types) 50kΩ min load (Voltage type)
Self-diagnostics:	Alarm, out of range, unstable, fault
Power Supply:	12-24 VDC ±20% @ 10mA
Digital Output:	Two-way RS232 digital output
Alarm Output:	Transistor, 24VDC ±20% <20mA
Ambient Temperature:	0-70°C (32-160°F)
Housing:	IP 65 (NEMA-4) stainless steel
Size:	0.75" dia x 3.7" long, 3/4-16 UNF thread
Cable:	1m (3.3 ft) standard, 3m available

ORDERING INFORMATION

RAYCMLTV	CM sensor, 0-5V user-scalable output
RAYCMLTJ	CM sensor, Type J TC output
RAYCMLTK	CM sensor, Type K TC output

Add suffix 3 for 3m (9.8') cable

Kobold Ultrasonic Level Transmitter

- Measuring ranges to 23 feet in liquids, 11.5 feet in solids
- Narrow 5.5° beam angle
- PVDF wetted parts
- Accuracy 0.25% of full scale
- 2-wire and 4-wire versions



▲ 2083

The NUS series Ultrasonic Level Transmitter is ideal for continuous, non-contact level measurement in liquids and coarse grained or pelletized solids. This sensor allows reliable measurement of dirty, viscous, and coating medium. The NUS boasts an extremely narrow beam to minimize problems due to obstructions in tall tanks. In addition to the 4-20mA output, a front panel LED readout is available.

The NUS series offers many advanced features including 11 point linearization, fixed echo suppression, automatic stirrer echo suppression and output dampening. These features allow the NUS series to be used in applications which render most other ultrasonics useless. Calibration and setup is a simple task performed using a push-button driven menu.

SPECIFICATIONS

Maximum Pressure:	40 PSIG
Process Temperature:	-40°F to 176°F
Accuracy:	0.25% of Max. Range
Resolution:	±0.12"
Beam Cone Angle:	5.5°
Maximum Loop Load:	600Ω
Optional Display:	4 digit LED
Case:	Epoxy coated Aluminum
Protection:	NEMA 4X, IP65
Electrical Connection:	1/2" NPT
Measuring Range	
2" NPT Models:	1.3 to 23.0 ft in liquids, 1.3 to 15 ft in solids
1 1/2" NPT Models:	0.8 to 13.1 ft in liquids, 0.8 to 6.6 ft in solids

ORDERING INFORMATION

KO/NUS-1053N	1 1/2" fitting, 12-36VDC, 2-wire Transmitter
KO/NUS-1051N	1 1/2" fitting, 90-127VAC, 4-wire Transmitter
KO/NUS-2053N	1 1/2" fitting, 12-36VDC, 2-wire with Display
KO/NUS-2051N	1 1/2" fitting, 90-127VAC, 4-wire with Display
KO/NUS-1083N	2" fitting, 12-36VDC, 2-wire Transmitter
KO/NUS-1081N	2" fitting, 90-127VAC, 4-wire Transmitter
KO/NUS-2083N	2" fitting, 12-36VDC, 2-wire with Display
KO/NUS-2081N	2" fitting, 90

Newport USB Sensors

Humidity/Temperature

- Connects Directly to Computer USB Port
- Free Software Converts PC into Humidity/Temperature Meter, Data Logger or Chart Recorder
- 316 Stainless Steel Housing & Removable Filter
- Optional Wall Mount Kit


RH-USB

SPECIFICATIONS

Relative Humidity Range:	2 to 98% RH
Accuracy:	±3% RH (@ 15 to 90% RH)
Repeatability:	±1% RH
Temperature Range:	-17 to 49°C (1 to 120°F)
Accuracy:	±1°C (±1.8°F)
USB Connector:	Type A plug on 2m (6') shielded cord
Software (included free):	Requires Windows® 2000, XP, VISTA (32-bit) or Windows 7 (64-bit)
Housing Material:	316 stainless steel
Dimensions:	138 L x 16 mm Dia (5.5 x 0.625")

ORDERING INFORMATION

RH-USB	Humidity temperature sensor with USB connector
CAL-3-HU	NIST traceable calibration certificate.
HX70-MKIT	Wall/duct mounting kit

Pressure

- 1000 Updates per Second
- USB2.0 Compatible
- Free Software Converts PC into Data Logger or Chart Recorder
- 316 Stainless Steel Wetted Parts
- Gage or Absolute Pressure


PX409

SPECIFICATIONS

Accuracy:	0.08% BSL typical (linearity, hysteresis & repeatability)		
Long Term Stability:	±0.1% FS typical, 1-Year		
Isolation:	100MΩ @50Vdc (2 MΩ after EMI filter), case to terminal		
A to D Conversion:	24-bit, 1000 updates per second		
USB Connector:	Type A plug on 2m (6') shielded cord		
Temperature:	-29 to 85°C (-20 to 185°F) compensated range		
Wetted Parts:	316L stainless steel, IP65 rating		
Sensor Type/Life:	Micro-machined silicon /1 million pressure cycles (min)		
Shock:	50 g, 11 ms half sine, vertical and horizontal axis		
Dimensions:	119 L x 22 mm Dia (4.1 x 0.88"), ¼-18 NPT fitting		

ORDERING INFORMATION

RANGE		GAGE	ABSOLUTE
psi	bar	Model No.	Model No.
0 to 10.00 inH2O	0 to 25.00 mb	PX409-10WGUSB	—
0 to 1.000	0 to 69.00 mb	PX409-001GUSB	—
0 to 2.500	0 to 172.0 mb	PX409-2.5GUSB	—
0 to 5.000	0 to 345.0 mb	PX409-005GUSB	—
0 to 15.00	0 to 1.000	PX409-015GUSB	PX409-015AUSB
0 to 30.00	0 to 2.100	PX409-030GUSB	PX409-030AUSB
0 to 50.00	0 to 3.400	PX409-050GUSB	PX409-050AUSB
0 to 100.0	0 to 6.900	PX409-100GUSB	PX409-100AUSB
0 to 150.0	0 to 10.30	PX409-150GUSB	PX409-150AUSB
0 to 250.0	0 to 17.20	PX409-250GUSB	PX409-250AUSB
0 to 500.0	0 to 34.50	PX409-500GUSB	PX409-500AUSB
0 to 750.0	0 to 51.70	PX409-600GUSB	PX409-600AUSB
0 to 1000	0 to 69.00	PX409-1.0KGUSB	PX409-1.0KAUSB
0 to 1500	0 to 103.0	PX409-1.5KGUSB	PX409-1.5KAUSB
0 to 2500	0 to 172.0	PX409-2.5KGUSB	PX409-2.5KAUSB
0 to 3500	0 to 241.0	PX409-3.5KGUSB	PX409-3.5KAUSB
0 to 5000	0 to 345.0	PX409-5.0KGUSB	PX409-5.0KAUSB

Kobold Low Flow Sensor

- 0.4 to 400 GPH sizes
- Compact Size, Low Cost
- Resistant to Aggressive Media

The DPL Series is ideal for applications requiring accurate flow measurement of transparent liquid media. A paddle wheel turbine interrupts an internal infra-red beam to generate a frequency output proportional to flow. The sapphire axle and bearing system assures long service life.


DPL

SPECIFICATIONS

Detector	
Power:	4.6-16 VDC, 15mA max.
Output Sink:	18mA max.
Pull-up:	Internal 10kohm
Output Signal:	Frequency
Emitter LED:	
Supply:	15-50mA,
Forward Voltage:	1.2-1.5VDC
Wiring:	6 ft. PVC cable
Accuracy:	±5% of full scale ±1.5% optional
Linearity:	±1.5% optional
Wetted Parts	
Body:	Polypropylene, sapphire, polysulfone
Seals:	Buna-N standard, Viton, EPDM optional
Fittings:	½" bsp standard, hose-barb ½" PVC optional
Max. Pressure:	145 PSIG
Temperature:	-40°F to 160°F
Protection:	NEMA 4X

ORDERING INFORMATION

Freq. at Model	Range		max flow (Hz)	Nom (PSI)
	Max DP GPH	oz/sec		
KO/DPL-1005	0.4 - 8.0	0.014 - 0.28	272	11
KO/DPL-1018	0.8 - 28	0.028 - 1.0	471	11
KO/DPL-1060	3.0 - 95	0.11 - 3.4	528	10
KO/DPL-1120	6.0 - 190	0.21 - 6.8	300	15
KO/DPL-1250	16 - 400	0.57 - 14	399	19

OPTIONS

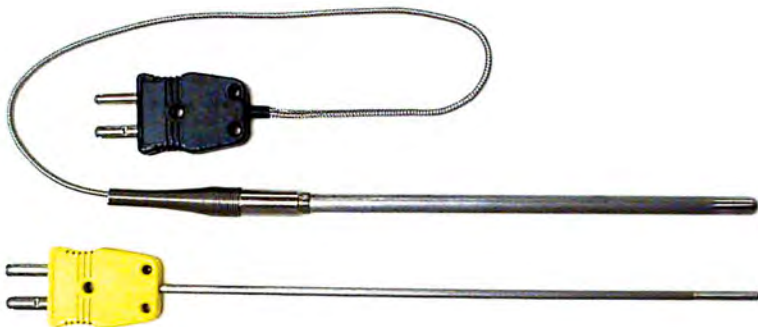
-V	Viton seals
-E	EPDM seals
-S	Hose Barb fittings, ½" PVC
-F2	1/2 frequency
-F4	1/4 frequency
-F8	1/8 frequency
-C	±1.5% accuracy calibration

Pyromation Insulated Thermocouples

The thermocouple element is encased in a metal sheath that can be formed and bent.

Extension leadwire of the same thermocouple material connects to remote panel meters or transmitters. Sheath fittings can be specified to mount the probe in thermowells with NPT threads.

Standard or Miniature Thermocouple Plugs are available to simplify field installation. These can be ordered with or without extension leadwire.



SPECIFICATIONS

Thermocouples and Thermocouple Wire		Reference Junction 0°C (32°F)	
T/C Type	Temperature Range	Limits of Error	
		Standard	Special
J	0 to 293°C (32 to 559°F) 293 to 750°C (559 to 1382°F)	± 2.2°C (4°F) ± 0.75%	± 1.1°C (2°F) ± 0.4%
K	0 to 293°C (32 to 559°F) 293 to 1250°C (559 to 2282°F)	± 2.2°C (4°F) ± 0.75%	± 1.1°C (2°F) ± 0.4%
E	0 to 340°C (32 to 644°F) 340 to 900°C (644 to 1652°F)	± 1.7°C (3°F) ± 0.5%	± 1°C (2°F) ± 0.4%
T	0 to 133°C (32 to 270°F) 133 to 350°C (270 to 662°F)	± 1°C (2°F) ± 0.75%	± 0.5°C (1°F) ± 0.4%
N	0 to 293°C (32 to 559°F) 0 to 1250°C (559 to 2282°F)	± 2.2°C (4°F) ± 0.75%	± 1.1°C (2°F) ± 0.4%

Thermocouple Extension Wire		Reference Junction 0°C (32°F)	
Ext. Wire Type	Temperature Range	Limits of Error	
		Standard	Special
KX	0 to 200°C (32 to 392°F)	± 2.2°C (4°F)	—
JX	0 to 200°C (32 to 392°F)	± 2.2°C (4°F)	± 1.1°C (2°F)
EX	0 to 200°C (32 to 392°F)	± 1.7°C (3°F)	—
TX	0 to 100°C (32 to 212°F)	± 1.0°C (2°F)	± 0.5°C (1°F)
NX	0 to 200°C (32 to 392°F)	± 2.2°C (4°F)	—

* For sheathed thermocouples without leadwire or plug, part number ends with

H	Sheath Terminations	
	10(1)	Sheath stripped 1"
	10(2)	Sheath stripped 2"
	10(3)	Sheath stripped 3"
Example	PM/J43GM-012-00-10(1)	

ORDERING INFORMATION

To Order: Insert Code for Each Letter to Select Catalog Number
Order Example PM/J43GM-012-10B-15-F3-036-2

ABCDE-F-G-H-I-J-K

A	Thermocouple Type
PM/J	Type J
PM/K	Type K
PM/E	Type E
PM/T	Type T
PM/N	Type N
B	Sheath Diameters
1	1/16" (0.063)
2	1/8" (0.125)
3	3/16" (0.188)
4	1/4" (0.250)
6	3/8" (0.375)
C	Sheath Material
8	316 stainless steel (type J, K, E, T)
3	Inconel 600 (type J, K, E, T)
9	304 stainless steel (type J, K, N)
D	Junction Type
G	Grounded
U	Ungrounded
E	Limits of Error
-	Standard
M	Special
F	Sheath Length
nnn	Three digit sheath length in inches
G	Re-Adjustable Compression Fitting
00	None
10B	1/4" NPT SS for 1/4", 3/8" sheath OD
10C	1/2" NPT SS for 3/16", 1/4"
11B	1/4" NPT Brass for 1/8", 3/16", 1/4", 3/8"
11C	1/2" NPT Brass for 1/4", 3/8"
H	Leadwire Transition*
15	Relief spring (400°F rating)
13	Same size transition
00	None
I	Extension Leadwire
F3	Fiberglass (stranded)
F3B	Fiberglass with stainless steel overbraid (stranded)
T3	Teflon (stranded)
T3B	Teflon with stainless steel overbraid (stranded)
00	None
J	Leadwire Length
nnn	Lead length in inches using 3 digits
K	Wire Terminations
2	2" split leads
3	2" split leads w/ spade lugs
4	Standard male plug
6	Miniature male plug
4MC	Standard male plug with mating connector
6MC	Miniature male plug with mating connector

Other types and configurations available on request

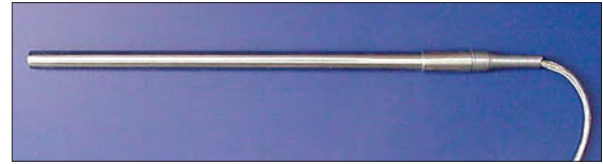
Pyromation Platinum RTD's

- Low and High temperature ranges
- 3 or 4 wire elements
- Accuracy exceeds DIN class B requirements
- Rugged 316 stainless sheath

These high accuracy platinum RTDs are built to DIN specifications, with $\alpha=0.00385$ and accuracy of $\pm 0.1\%$ @ 0°C . Call for other resistance values or configurations

To Order: Insert Code for Each Letter to Select Catalog Number
 Order Example PM/R1T185H483-12-00-15-T3-048-2
 PM/ABCDE-F-G-H-I

A Temperature Range	
R1T185L	Low-temp -200°C to 204°C
R1T185H	Hi-temp -200°C to 600°C
B Sheath Diameters	
28	1/8" (0.125)
38	3/16" (0.188)
48	1/4" (0.250)
68	3/8" (0.375)
C RTD Element	
3	3 wire
4	4 wire
D Sheath Length	
nn	Two digit sheath length in inches



E Re-Adjustable Compression Fitting	
00	none
10B	1/4" NPT SS for 1/4", 3/8" sheath OD
10C	1/2" NPT SS for 3/16", 1/4"
11B	1/4" NPT Brass for 1/8", 3/16", 1/4", 3/8"
11C	1/2" NPT Brass for 1/4", 3/8"
F Leadwire Transition	
15	Relief spring (400°F rating)
13	Same size transition
G Extension Leadwire	
T3	3 conductor teflon insulation
T3A	3 conductor teflon insulation with stainless steel flex armor
F3	3 conductor fiberglass insulation
F3A	3 conductor fiberglass with flex stainless steel armor
H Leadwire Length	
nnn	Lead length in inches using 3 digits
I Wire Terminations	
2	Leads split 2" with 1/4" strip
3	Leads split 2" with spade lugs

Vaisala Transmitters

NEW

CO₂ Transmitters

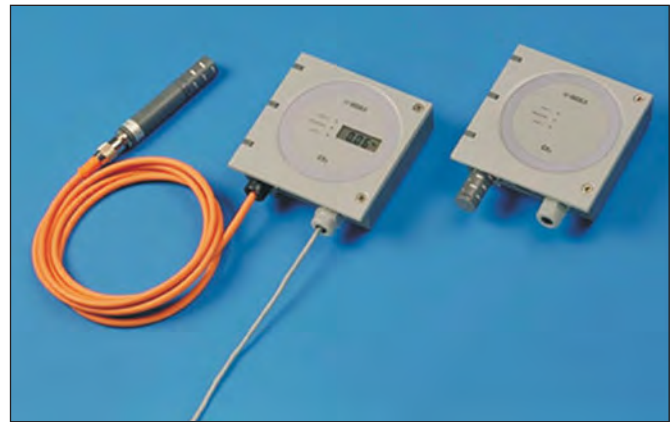
- Silicon-Based NDIR Sensor
- NEMA 4X enclosure
- Interchangeable Probes
- Easy Installation
- LCD Display Option
- Analog Retransmit
- Two Alarm/Relay Outputs

The GMT Series Transmitters measure CO₂ in harsh and humid environments. A patented sensor provides outstanding time and temperature stability. The case is sealed and corrosion resistant. Choose from 10 measurement ranges:
 2%, 3%, 5%, 10%, 20% full scale versions in the GMT221.
 2000, 3000, 5000, 7000 or 10000 ppm versions in the GMT222.

Humidity Transmitter

- Fixed or remote probe
- Optional LCD display
- Full 0-100% RH measurement
- Durable HUMICAP sensor
- Quick-change probe
- NEMA 4X, IP65 case

The HMT100 Series Transmitters are designed for humidity & temperature monitoring in demanding environments. The patented humidity sensor is resistant to dust & most chemicals. Single channel models transmit humidity or dewpoint. Dual channel models also transmit temperature. Measurement range is 0-100% RH, -40 to 80°C temperature, -20 to 80°C dew point temperature. Units with 4-20mA output(s) are loop powered. Voltage output models require an external 9-24VAC or 10-36VDC power supply.



SPECIFICATIONS

Dimensions:	4.7 x 4.7 x 1.3" + 4" sensor or remote probe
Housing:	ABS plastic
Operating Temperature (transmitter without display):	-40 to 60°C (HMT100), -20 to 60°C (GMT220)
Probe Cable:	Cable lengths to 39ft (10m) available

Vaisala Humidity & Temperature Transmitters

- Measure humidity, temperature, dew point, mixing ratio, absolute humidity and wet bulb temperature
- Small sensor head for use in tight spaces
- Small sensor mass for fast response
- Graphical display shows trends & 1 year history
- Analog & alarm relay outputs
- Corrosion resistant NEMA 4 (IP65) housing
- Single point field calibration



HMT333 ▲

The HMT333 Transmitter is a full featured front end for industrial and commercial humidity measurements. The HMT333 sensor provides accurate reading with excellent long-term stability, over the entire temperature range. The sensor is immune to particle contamination and most chemicals. A chemical purge to clean the sensor (via heating) can be initiated manually or at set intervals.

Two analog outputs easily connect to meters, controllers, recorders and other equipment. The RS-232 interface simplifies setup and calibration. RS-485 & Ethernet options permit networking the HMT333 with other devices. Windows software is available to download and display the measurement data.

Datalogger option records up to 4 years of data.

SPECIFICATIONS

Parameters:	
Standard:	Relative Humidity (RH) Temperature (T)
Optional:	Dewpoint Temperature (Td) Absolute Humidity g/m ³ (a) Wet Bulb Temperature (Tw) Mixing Ratio g/Kg (x) Enthalpy (h)
Temperature Range:	-40 to 80°C (176 °F)
Accuracy at 20°C:	±0.2°C
Temperature dependence:	±0.0025°C/°C
Temperature sensor:	Pt100 class B
RH Accuracy:	
0-90 %RH:	±2% RH
90-100 %RH:	±1.7% RH
Response time:	8 sec. in still air
Accuracy of analog output:	±0.05% full scale
External loads:	
Current outputs:	<500Ω
0-1V output:	>2kΩ
0-5V & 0-10V outputs:	>10kΩ
Power consumption @24VDC:	110mA max, 220ma during purge
Operating temperature:	-40 to 60°C (-40 to 140°F)
with local display:	0 to 60°C (32 to 140°F)
Keypad:	Sealed pushbuttons
Display menus:	English, Spanish, French, German,
Alarm relays:	0.5A@250VAC, SPDT
RS 485/422 interface:	Full or half duplex, 9600 baud
Dimensions:	
Housing:	7.2x4.7x3.0" (183x119x77mm)
Probe:	3.5" x 0.5" dia (89x 12mm)

Additional HMT330 models available for high temperature (180°C), high pressure, vacuum, high humidity and other applications. Also available: HMT360 Series Intrinsically Safe Transmitters.

ORDERING INFORMATION

To Order—Insert Code for Each Letter to Select Catalog Number.
Order Example: HMT333 E0B201BCDC1B01AABC

HMT333	A	B	C	D	E	F	G	H	I	J	K
	L	M	N	O							
A	Cable Length										
E0	2m (6.5ft)										
F0	5m (16.3ft)										
G0	10m (32.5ft)										
B	Transmitter Type										
A	RH+T										
B	RH+T+Td+Tdf+a+Tw+x+ppm+pw+pws+h+dT										
C	Display										
0	No display										
1	Graphic LCD with keypad										
D	Power Supply, Alarm Output										
0	10-35 VDC, 24 VAC										
1	10-35 VDC, 24 VAC isolated										
3	100-240 VAC with 115V cord										
E	Analog Output Level										
1	4-20 mA										
2	0-20 mA										
3	0-1 V										
4	0-5 V										
5	0-10 V										
F	Analog Output Signal (3 digits: Ch1, Ch2, Ch3)										
B	RH 0 to 100%RH										
C	T										
D	Td -20 to +100 °C (-4 to +212 °F)										
E	Tdf -20 to +100 °C (-4 to +212 °F)										
F	a 0 to 600 g/m ³ (0 to +262 gr/ft ³)										
G	Tw 0 to +100 °C (32 to 212 °F)										
H	x 0 to 500 g/kg d.a. (0 to 3500 gr/lb d.a.)										
J	h -40 to 1500 kJ/ kg (-17.2 to 644.9 Btu/lb)										
K	ppm 0 to 5000										
L	pw 0 to 1000 hPa (0 to 14.5 psi)										
M	pws 0 to 1000 hPa (0 to 14.5 psi)										
N	dT -10 to 50 °C (14 to 122 °F)										
G	Analog Output Range for Temperature										
C	-40 to +80 °C (-40 to +176 °F)										
D	-40 to +120°C (-40 to +248°F)										
H	Output Units										
1	Metric										
2	Non-metric										
I	Options (2 Digits: Slot 1, Slot 2)										
1	Relay Output								2	RS-485	
4	Ethernet (requires external power)								6	Datalogger	
0	None										
J	Cable Fitting										
A	Cable gland M20* 1.5										
B	1/2 NPT conduit fitting										
K	Mounting										
0	Normal										
1	Wall plate										
4	DIN rail										
L	Humidity Sensor										
1	General purpose, Humicap180										
2	with sensor purge, Humicap180C										
M	Sensor Protection										
A	PPS grid & stainless steel netting (14 microns)										
B	PPS plastic grid										
C	Sintered stainless filter										
N	Installation Kit										
AB	None										
BB	Duct										
O	PC Accessories										
A	None										
B	Serial cable										
C	Software & cable										

Kobold Digital Temperature Sensor

- Measuring Range -58 to 250°F
- Semiconductor Sensor
- Scalable 4-20mA Output
- Easy-to-Read LED Display
- All Stainless Steel Construction



Programmable Features

- Lockout Code
- Dampening
- Transmitter Span

SPECIFICATIONS

Display Type:	3-digit red LED
Display Resolution:	0.5° from -10° to +100°, 1° below -10 and above 100°
Accuracy:	14 to 185°F: ±0.9°F 14 to -58°F: ±3.6°F 185 to 250°F: ±3.6°F
Pressure:	1150 PSIG max.
Process Temp:	250°F max.
Ambient Temp:	120°F max.
Material:	316L Stainless Steel housing & probe
Remote Probe Cable:	Teflon, 8ft. std.
Power:	24 VDC ±20% @ 20 mA
Output:	4-20 mA, 3-wire, 500Ω max. load
Sample Rate:	0.5 Sec./sample
Dampening:	Averaging 2, 4, 8, 16, 32, or 64 samples
Electrical Connection:	4-Pin Micro-DC male plug or PVC jacketed cable
Electrical Protection:	NEMA 4/IP 65

ORDERING INFORMATION

To Order: Insert Code for Each Letter to Select Catalog Number

TDA -15 - - - - Example TDA-15-N4-F2-0-L3M

A	Process Connection				
	N4	1/2" NPT	N5	3/4" NPT	
	R4	1/2" BSP	R5	3/4" BSP	
	D6	Remote Probe (Smooth Shank)			
B	Measuring Range				
	F2	0 to 250°F			
	F3	-58 to 250°F (only available with Remote Probe)			
	H2	-20 to 120°C			
	H3	-50 to 125°C (only available with Remote Probe)			
C	Probe Length				
	0	12mm / 1/2" (not Available with Remote Probe)			
	1	100mm / 4"			
	2	185mm / 7.25" (not Available with Remote Probe)			
D	Electrical Connection				
	L3M	Micro-DC plug, 4-Pin male			
	L3P	3 Ft. PVC cable			
	L3S	Custom length PVC cable			

Kobold Magneto-Inductive Flowmeters

NEW

- Flow Rates from 0.26 GPM to 200 GPM
- Use with Conductive Liquids, Acids & Caustic
- No Moving Parts
- Digital Display Option
- Frequency or mA Output



SPECIFICATIONS

Liquid:	Conductivity >30 μS/cm
Accuracy:	±2.0% of full scale
Repeatability:	±1% of full scale
Straight Pipe:	Requires 3X dia. upstream, 2X downstream
Operating Temp.:	32-176°F (140°F max. with PVC fittings)
Pressure:	145 PSIG max @ 70°F
Pressure Drop:	3.6 PSI max @ 100% rated flow
Electrical Protection:	NEMA 4X/IP 65
Power Supply:	24 VDC ±20% required
Connector:	Micro-DC male, 4-pin (5-pin on C34)
Frequency Output	PNP open collector, 200 mA max.
Analog Output	4-20 mA, 3-wire, 500Ω max.
Switch Output	PNP or NPN open collector, 300 mA max.

Compact electronic units (C34 Output Type) have a digital display and programmable switch setpoint, reset point, switch logic, 4-20 mA span/zero, dampening & lockout code. Set via 2-button keypad. Models with Integral Totalizer & Batch Controller electronics are also available.

ORDERING INFORMATION

MIK- - - - Example MIK-5NAU4NL343

A	Body Material					
	5NA	Ryton with Buna-N Seal, 316L Electrode				
	5VA	Ryton with FKM Seal, 316L Electrode				
	6FC	PVDF with FFKM Seal, Hastelloy C4 Electrode				
B	Range					
		Fitting Set Size (")				
		GPM	N	P	M	A
	U1	0.013-0.26				
	U2	0.04-0.8	1/4	1/2	--	1/2
	U4	0.13-2.6				
	U5	0.2-4.0	3/8	3/4	3/8	1/2
	U7	0.4-8.0				
	U8	0.65-13	1/2	1	1/2	1
	UA	0.8-16				
	UB	1.3-26	1	--	1	1-1/2
	UD	2.0-40				
	UE	4.0-80	1-1/2	--	1-1/2	2
	UG	6.5-130				
	UH	10-200	2	--	2	2-3/4
C	Fitting Set*					
	N	NPT female PVC				
	P	PVC hose barb				
	M	PVC glue socket				
	A	BSPP male				
D	Output					
	F300	Frequency 0-500Hz				
	F390	User Specified 50-1000Hz full scale				
	L343	4-20mA				
	C34N	4-20mA & NPN switch				
	C34P	4-20mA & PNP switch				

* PVDF butt weld tube & polypro NPT female fittings also available for some ranges.

Kobold Differential Pressure & Thermal Flow Sensors

- 1-7 through 100-600 GPM Rates
- Bronze or Stainless Housing
- 4-20mA Process Output
- Rugged 316 Stainless Steel Bellows

The RCD series uses an orifice technique to generate a differential pressure which varies with flowrate but is unaffected by system pressure fluctuations. The single measuring bellows is coupled to a high accuracy hall effect detector.



SPECIFICATIONS

Maximum Pressure:	580 PSIG
Maximum Temperature:	176°F
Seals:	Buna-N
Display:	3 digit LED
Output:	4-20mA, 3 wire
Output Accuracy:	±3% of full scale
Input Power:	24VDC ±20%, 80mA
Optional Switch:	PNP or NPN open collector, 80mA max.
Electronics Housing:	304 SS, NEMA 4x
Electrical Connection:	Micro-DC male, 5 pin

ORDERING INFORMATION

KO/RCD- ABCD Example KO/RCD-1105GN4C34P

A Material

11	Bronze
12	Stainless Steel

B Flow Rate & Fitting Size

05GN4	1-7.2 GPM, 1/2" NPT
10GN4	2-11.2 GPM, 1/2" NPT
15GN5	2-17.6 GPM, 3/4" NPT
20GN5	2.5-22.5 GPM, 3/4" NPT
25GN6	5-35 GPM, 1" NPT
30GN6	8-44.5 GPM, 1" NPT
35GN8	10-73 GPM, 1 1/2" NPT
40GN8	20-114 GPM, 1 1/2" NPT
45GN9	20-184 GPM, 2" NPT
50GN9	25-240 GPM, 2" NPT
55GNB	30-280 GPM, 3" NPT
60GNB	50-410 GPM, 3" NPT
65GNB	100-620 GPM, 3" NPT

C Type

C3	Compact Electronics
----	---------------------

D Output

4P	4-20mA and 1 PNP switch
4N	4-20mA and 1 NPN switch
OR	2 PNP switches
OM	2 NPN switches

Options

-C	Calibrate for specific gravity other than water (<0.95 or >1.05)
-V	Calibrate for viscous liquids (viscosity >10cSt)

Gas flowmeters also available.

- Temperature Independent Output
- 8 Segment LED Flow Rate Bar
- Optional Setpoint Relay
- Wide Viscosity Range
- No Moving Parts
- Extremely Low Pressure Loss
- NPT & Sanitary Fittings



The KAL-A uses the calorimetric principle to continuously monitor the flow of both viscous and non-viscous media. Flow rate is transmitted via a 4-20mA output, while an optional switch provides an alarm function. A single RTD element is used to both heat the probe tip and measure temperature. The internal microprocessor compensates for media temperature changes. An absence of protrusions prevents contaminants from building up on the probe tip.

SPECIFICATIONS

Sensing Range	
Water:	0.05 - 2 m/s
Oils (approx.):	0.1 - 4 m/s
Response Time:	5.6s typ.
Maximum Pressure:	1450 PSIG (Sanitary 600 PSIG)
Ambient Temperature:	0°F to 176°F
CIP Temperature:	280°F
Housing:	NEMA 4 Nylon, Explosion Proof (AI) optional
Output:	4-20mA, 3-wire into 500Ω max.
Linearity:	±10% of full scale
Zero Adjustment:	0-75% of range
Span Adjustment:	25-100% of range
Power:	24±2VDC, 300mA max
Switch Option:	
Adjustment:	by Potentiometer
Output:	PNP open collector, 24V, 400mA max.
Status Indicator:	Bi-colored LED

ORDERING INFORMATION

KO/KAL-7215	304 SS Sensor, 1/2" NPT fitting
KO/KAL-7315	316-Ti SS Sensor, 1/2" NPT fitting
KO/KAL-7320	316-Ti SS Sensor, 3/4" NPT fitting
KO/KAL-7340S	316-Ti SS Sensor, 1 1/2" Tri-Clamp fitting

OPTIONS

-P	PNP Switch
-M12	6' cable & Micro DC connector

Also available with switch output in place of 4-20mA output.

Kobold Target-Type Flow Sensor

- 1.5-8 to 225-500 GPM Water,
- Bronze and Stainless Bodies
- Variety of Wetted Materials
- Line Sizes 3/8" to 3" NPT
- Compact LED display with switch and 4-20 mA flow transmitter



DPT-C ▲

Standard Ranges (specify bronze or stainless body):

Fitting	GPM water
3/8" NPT	1.5-8 3-12.5
1/2" NPT	1.5-8 3-18
3/4" NPT	1.7-15 5-25
1" NPT	5-20 20-35
1 1/2" NPT	15-45 25-60
2" NPT	25-120 40-200
3" NPT	175-400 225-500

SPECIFICATIONS

Flow Range, Liquids:	1.5-8 GPM through 225-500 GPM water
Accuracy:	±3% of full scale
Repeatability:	±1% of full scale
Straight Pipe Required:	Inlet: 10 X Diameter Outlet: 5 X Diameter
Operating Temperature:	-10 to 176°F
Maximum Pressure:	580 PSIG @ 70°F
Wetted Materials:	
Bronze Versions:	Bronze, 316-Ti stainless steel, buna-N, ceramic
Stainless Versions:	316-Ti stainless steel, viton, ceramic
Programmable Functions:	Lockout code, switch logic, switch setpoint and hysteresis, dampening
Input Power:	24 VDC ±20%, 80 mA Max.
Display:	3 digit LED
Switch Type:	PNP open collector
Switch Rating:	300 mA Max. short circuit protected
Analog Output:	4-20 mA, 3-wire, RL=500 Ohms Max.

Westcon Photoelectric Sensors

- Designed to NEMA 6 / IP67
- Visible Narrow Beam for Small Object Detection
- Input 10-30 VDC, Dual Output (PNP & NPN)
- Separate Power and Signal LEDs
- PICO Style Quick Disconnect or 6" Pig Tail Available

W7703 ▲



- Designed to NEMA 6 / IP67
- Background Suppression
- Light-ON and Dark-ON Operate (Switch Selectable)
- Highly visible Power and Output LEDs
- Small Object Detection
- Maximum Sensing Distance: 4", 6" or 8"

W7706 ▲



- Small footprint, M18 Compatible Housing
- Visible Narrow Beam for Small Object Detection
- Easy Setup
- Separate Power and Signal LED's
- Retroreflective or Diffuse



W7708 ▲

SPECIFICATIONS

OPERATION	Polarized Retroreflective (Model 3BR) Retroreflective or Diffuse (Model 3AR)
DETECTION RANGE	Up to 160 ft. (48.8m) - Retroreflective Up to 12" (30.5cm) - Diffuse
OUTPUT	Bi-Polar PNP/NPN
RESPONSE TIME/ FREQUENCY	<2mS / >500Hz
VOLTAGE REQUIREMENTS	10 to 30 VDC

ORDERING INFORMATION

770	3AR	04	N	3	B	QP
BASIC MODEL	3AR Retro-reflective/Diffuse	3BR Polarized	OPERATION	04 Switch selectable (light on/dark on)	POWER	N 10 - 30 VDC
BEAM TYPE	3 Laser	OUTPUT	B Bi-Polar (NPN & PNP)	FEATURES	QP Quick Disconnect Standard (PICO M8 4 Pin)	K Special
					PT Pig Tail 6" standard (Micro 4 Pin)	

SPECIFICATIONS

OPERATION	Convergent Beam
DETECTION RANGE	4 in., 6 in., 8 in. (10.16, 15.2, 20.3cm)
OUTPUT	Bi-Polar PNP/NPN
RESPONSE TIME/ FREQUENCY	<2mS / >500Hz
VOLTAGE REQUIREMENTS	10-30 VDC

ORDERING INFORMATION

770	6AD	04	N	3	B	QP
BASIC MODEL	6AD Diffuse	OPERATION	04 Switch selectable (light on/dark on)	POWER	N 10 - 30 VDC	BEAM TYPE
					3 Laser (Convergent)	OUTPUT
					B Bi-Polar (NPN & PNP)	FEATURES
					QP Quick Disconnect Standard (PICO M8 4 Pin)	K Special

SPECIFICATIONS

OPERATION	Polarized Retroreflective Retroreflective or Diffuse
DETECTION RANGE	Up to 160 ft. (48.8m) - Retroreflective Up to 12" (30.5cm) - Diffuse
OUTPUT	Bi-Polar PNP/NPN
RESPONSE TIME/ FREQUENCY	<2mS / >500Hz
VOLTAGE REQUIREMENTS	10 to 30 VDC

ORDERING INFORMATION

770	8AR	04	N	3	B	QP
BASIC MODEL	8AR Retroreflective	8BR Polarized Retroreflective	OPERATION	04 On/Off	POWER REQUIREMENTS	N 10 - 30 VDC
BEAM TYPE	3 Laser	OUTPUT	B Bi-Polar (NPN & PNP)	FEATURES	QP Quick Disconnect Standard (PICO M8 4 Pin)	K Special
					PT Pig Tail 6 in. Standard (micro 4 pin)	

ATC Westcon Tach Generators

- Corrosion-Resistant
- 15,000 Hour Running Time
- Watertight Housings (Optional)
- Explosion-Proof—UL Listed (Type E)

SPECIFICATIONS

OUTPUT

Model 750: 6 VDC per 1000 RPM (5000 RPM max)

Model 758: 10 VAC per 1000

Frequency Responsive Speed Ranges

F86 Series: 500 RPM-20,000 RPM

F44 Series: 500 RPM-40,000 RPM

F25: 40,000 RPM-100,000 RPM

MODEL 750 DC GENERATORS



A



J2/M2



K3



W/E

Type A 750-9901000
Type A140R 750-282799

Type K3 750-9903000
Type K30 750-9905000

Type J2 750-9906000
Type J2R 750-9906002
Type M2 750-9906001

Type W 750-9905002
Type E 750-9905001

MODEL 758 AC GENERATORS



AB



JB2



KB3

Type AB 758-9901000
Type ABF 758-9901001

Type JB2 758-9905000
Type JBF2 758-0133477-902
Type JB5 758-9905001
Type JBF5 758-0134030-901

Type KB3 758-9907000
Type KBF3 758-9911000
Type KB6 758-9908000

Type KBF6 758-0136522-902
Type KB30 758-0134277-901
Type KBF30 758-0134277-903

Type W 758-9910002
Type WF 758-0133484-902

Type E 758-9910001
Type EF 758-0131483-902

BEARINGLESS AC GENERATORS

Type XF86 758-9989002
Type XPF86 758-0077533
Type GF86 758-9912002
Type GPF86 758-0300008

Type XF44 758-0088466
Type GF44 758-0049982
Type GP44 758-0084866

Monarch Speed Sensors

ROS-W

Optical (1 to 250,000 RPM). Remote Optical Sensor with visible Red LED light source and Green LED on-target indicator. Complete with mounting bracket and 8' cable. Operates up to 3 feet and 45° from reflective target. Stainless Steel Sensor .625" dia. By 2.9".

P5-11

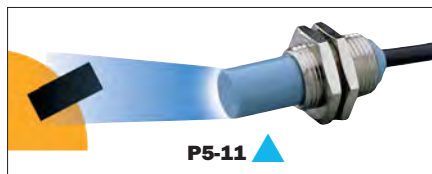
Proximity (1 to 60,000 RPM). Probe style inductive sensor for use up to .2 inches from a .5" metallic target. Can work with one pulse per revolution from bolt head, keyway, etc. Sensor Dimensions: M14X1 thread, 1.26" long.

MT-190W

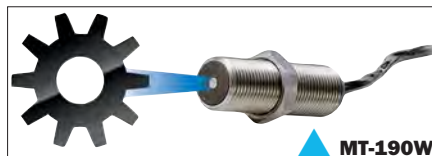
Magnetic Sensor with Amplifier (1 to 100,000 RPM). Recommended for use with 60 tooth gear, .25" gap, .106" pole piece dia., Sensor Dimensions: 5/8 x 18 UNF thread, 2" long.

IRS-W

Infrared (1 to 999,990 RPM). Infrared Sensor with 8' cable. Use without Reflective Tape at .5" sensing gap from target. Senses white to black contrasting marks or beam can be interrupted by solid objects. Dimensions: 0.625"DIA x 2.9"L.



P5-11



MT-190W



ROS-W



IRS-W

ORDERING INFORMATION

ROS-W	Remote Optical Sensor
MT-190W	Magnetic Sensor
P5-11	Proximity Sensor
IRS-W	Infrared Sensor

Accessories

T-5	Reflective Tape (5' x ½")
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Newport Load Cells

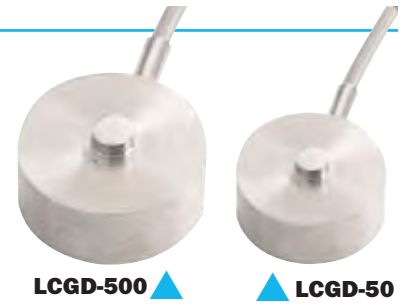
Miniature Compression Load Cell

ORDERING INFORMATION

Capacity (lb.)	Model Number
0-25	LCGD-25
0-50	LCGD-50
0-100	LCGD-100
0-250	LCGD-250
0-500	LCGD-500
0-1000	LCGD-1K
0-2000	LCGD-2K
0-5000	LCGD-5K
0-10,000	LCGD-10K
0-50,000	LCGD-50K

SPECIFICATIONS

Excitation:	10 VAC/ DC
Output:	2 mV/ V nominal
Accuracy Class:	0.25%
Material:	Stainless Steel
Linearity:	±0.25% FSO
Hysteresis:	±0.20% FSO
Repeatability:	±0.10% FSO
Safe Overload:	150% FSO


LCGD-500 ▲

 ▲ **LCGD-50**

Cantilever Beams

- Tension/Compression
- Load Button, Rod End and Base Plate Mounting Accessories


 ◀ **Model LC501**

SPECIFICATIONS

Output:	3 mV/ V ±0.0075 mV/ V
Excitation:	10 VDC (15 VDC max)
Accuracy:	0.03% FSO
Calibrated Air:	0%, 50%, 100%, 50%, 0%
Linearity:	0.03% FSO
Hysteresis:	0.02% FSO
Repeatability:	0.02% FSO
Zero Balance:	±1% FSO
Safe Overload:	150% FSO
Material:	Stainless Steel

ORDERING INFORMATION

Capacity (lb.)	Model Number	Accessories for LC501 Series		
		Load Button Model	Rod End Model	Base Plate Model
±100	LC501-100	LBC-012	REC-012M	BP-10
±200	LC501-200	LBC-012	REC-012M	BP-10
±500	LC501-500	LBC-012	REC-012M	BP-10
±1000	LC501-1K	LBC-012	REC-012M	BP-15
±2000	LC501-2K	LBC-012	REC-012M	BP-15
±5000	LC501-5K	LBC-012	REC-012M	BP-15
±10,000	LC501-10K	LBC-034	REC-034M	BP-20

Low Profile Load Cells

ORDERING INFORMATION

Compression			Tension/Compression	
Capacity (lb.)	Cable Style Model No.	Connector Style Model No.	Capacity	Model No.
0-50	LC401-50	LC411-50	±50	LCHD-50
0-100	LC401-100	LC411-100	±100	LCHD-100
0-250	LC401-250	LC411-250	±500	LCHD-500
0-500	LC401-500	LC411-500	±1K	LCHD-500
0-1000	LC401-1K	LC411-1K	±3K	LCHD-3K
0-3000	LC401-3K	LC411-3K	±5K	LCHD-5K
0-5000	LC401-5K	LC411-5K	±10K	LCHD-10K
0-10,000	LC401-10K	LC411-10K	±20K	LCHD-20K
0-20,000	LC401-20K	LC411-20K	±30K	LCHD-30K
0-50,000	LC401-50K	LC411-50K	±50K	LCHD-50K


 ▲ **Model LC411**

SPECIFICATIONS

Output (FSO):	3 mV/ V ±0.25%		
Excitation:	10 VDC (15 VDC max)		
Calibrated at:	0%, 50%, 100%, 50%, 0%		
Zero Balance:	±1% FSO		
Safe Overload:	150% FSO		
		Compression	
Linearity:	≥3000 lb:	0.10% FSO	Tension/Compression
	<3000 lb:	0.13% FSO	0.10% FSO
Hysteresis:	≥3000 lb:	0.10% FSO	0.08% FSO
	<3000 lb:	0.12% FSO	0.08% FSO
Repeatability:		0.05% FSO	0.03% FSO