


BULLHORN PRODUCT SPECIFICATIONS


	AMR6-GSM AMR6-ORB AMR6-SAT	APM4AM-GSM APM4AM-ORB	APM4AMCP-ORB APM4AMCP-SAT APM4AM-SAT
Data Inputs	<p>1 Dry Contact Closure or Active Digital</p> <p>Accumulates up to a 6 digit reading</p> <p>Dry Contact: 22 µA source current Max rate = 2.5 cycle/sec. Min. Width = 100 Millisec/state change</p> <p>Active Digital: Logic 1 = 2Vmin Logic 0 = 800mV max</p> <p>Accumulators: Max Input Rate of 2.5 cycles/sec. Min Width=100 millisec/state change</p>	<p><i>Channel & Function Choices</i></p> <ol style="list-style-type: none"> 1 Analog (± 5VDC, ±50 mVDC or 4-20 mA) or Active Digital 2 Same as Channel 1 3 Same as Channel 1 4 Same as Channel 1 5 Digital, Accumulator or Active Digital 6 Digital, Accumulator, Active Digital or Acc. reset <p>Analog Inputs (Ch. 1 – 4) are isolated</p> <p>Active Digital: Ch. 1 - 6 Logic 1 = 2Vmin Logic 0 = 800mV max</p> <p>Accumulators: Ch. 5 & 6 Max Input Rate of 2.5 cycles/sec. Min Width=100 millisec/state change</p> <p>Digital = Form A contact closure Ch. 5 & 6: Dry contact closure, 40µA source current</p>	<p><i>Channel & Function Choices</i></p> <ol style="list-style-type: none"> 1 Analog (± 5VDC, ±50 mVDC or 4-20 mA) or Active Digital 2 Analog (± 100 VDC) or Active Digital 3 Same as Channel 1 4 Same as Channel 1 5 Digital, Accumulator or Active Digital 6 Digital, Active Digital or Acc. Reset <p>Analog Inputs (Ch. 1 – 4) are isolated</p> <p>Active Digital: Ch. 1 - 6 Logic 1 = 2Vmin Logic 0 = 800mV max</p> <p>1 Accumulator: Max input rate = 1 cycle/2 sec. Min Width = 1 sec/state change</p> <p>Digital = Form A contact closure</p> <p>Dry contact closure 40µA source current See bottom of page for more notes</p>
Outputs	N/A	N/A	N/A
Config. Parameters	Meter factor; Initial meter index reading; Daily accounting time; Number of daily health checks	Description of each input; Alarm conditions per input; Number of daily health checks	Description of each input; Alarm conditions per input; Number of daily health checks
Supporting Products	Requires configuration kit; Contact closure not included; Optional high gain antenna	Requires configuration kit; Contact closure not included; Optional high gain antenna, Rectifier Interface, Test Point Filter, Surge Protector and AC Monitor	Standard w/ built-in surge protection, select from built-in rectifier interface functionality and/or test point filtering; Requires configuration kit; Optional AC Monitor
Power Supply	Sealed Lead-acid gel cell battery w/ solar or AC charger; Optional lithium battery for cellular model only	Sealed Lead-acid gel cell battery w/ solar or AC charger; Optional lithium battery for cellular model only	Sealed Lead-acid gel cell battery w/ solar or AC charger
Physical Description	Cellular version: anodized aluminum can (3.66 X 5.5" w/o antenna); sealed, self-contained unit includes antenna, power supply & mounting bracket; also available in plastic box enclosure (8.5 X 6.5 X 4.5"). Satellite unit in plastic box enclosure only.	Cellular version: anodized aluminum can (3.66 X 5.5" w/o antenna); sealed, self-contained unit includes antenna, power supply & mounting bracket or plastic box enclosure (8.5 X 6.5 X 4.5"). Satellite unit in plastic box enclosure only.	Plastic box enclosure only: 8.5 X 6.5 X 4.5"
Data Integrity	Data stored in non-volatile (EEPROM) memory	Data stored in non-volatile (EEPROM) memory	Data stored in non-volatile (EEPROM) memory
Environment	Temp: -30 degrees C to +70 degrees C; Humidity: 0-95% non-condensing	Temp: -30 degrees C to +70 degrees C; Humidity: 0-95% non-condensing	Temp: -30 degrees C to +70 degrees C; Humidity: 0-95% non-condensing
Compliance	Aluminum can enclosure: UL CUL Class 1, Div II; Hazardous Certifications; All enclosures: NEMA; 4X compliant for all Bullhorn types; FCC Part 15	FCC Part 15; Enclosure: NEMA 4X compliant for all models and enclosures.	FCC Part 15; Enclosure: NEMA 4X compliant for all models and enclosures.
Software Interface	Bullhorn secure website. Standard web browsers. AI Network operations center	Bullhorn secure website. Standard web browsers. AI Network operations center	Bullhorn secure website. Standard web browsers. AI Network operations center
Comm.	GSM Digital Cellular; Orbcomm Satellite; Inmarsat D+ Satellite	GSM Digital Cellular; Orbcomm Satellite; Inmarsat D+ Satellite	Orbcomm Satellite; Inmarsat D+ Satellite

Note 1: On analog channel

Note 2: All 6 channels transmit in one packet on 4AM-GSM, 4AM-ORB and 4AMCP-ORB; For 4AM-SAT and 4AMCP-SAT, channels 1-4 produce one packet of information and channels 5-6 produce another. If all 6 packets are requested or if a channel from 1-4 and channels 5 and 6 are requested, 2 packets will be sent.

American Innovations strives to improve products constantly; as such, specs are subject to change without notice.

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	SDT16	ICP+
Data Inputs and Outputs	User Selectable Inputs: Up to 16 6-digit register readings, 8 12-digit register readings or a combination of both via RS232 direct connection. 1 Digital alarm contact closure Protocols: <ul style="list-style-type: none"> • Modbus (RTU or ASCII) • Mercury • Dresser • Reynolds 	Up to 4 Analog channels in standard product Available analog input ranges: +/- 250 VDC +/- 100 VDC +/- 10 VDC +/- 100 mVDC +/- 25mVDC Analog inputs are isolated Inputs specified at time of order Available I/O Module: <ul style="list-style-type: none"> • 1 Analog Output, 5 Discrete Inputs, 2 Discrete Outputs • Up to 3 DI's can be used as accumulators (Max pulse rate = 1 pulse/sec.)
Config. Parameters	Description of each input; Alarm conditions per input; Number of daily health checks	Configuration via web interface and local configuration possible via program port using the Universal Config. Tool
Supporting Products	Requires configuration kit	Optional MicroMax GPS80 Interrupter, I/O Module, AC Monitor, ICP Isolator
Power Supply	Sealed Lead-acid gel cell battery w/ solar or AC charger; optional lithium battery for cellular model only	AC (Line power supplied by customer) w/ nominal voltage of 110VAC. DC (line power supplied by customer) with input voltage of 12-26VDC. Backup battery has a nominal voltage of 12 VDC and 7AH Capacity. Solar power option available for additional fee
Physical Description	Cellular version: anodized aluminum can (3.66 X 5.5" w/o antenna); sealed, self-contained unit includes antenna, power supply & mounting bracket; optional 3" PVC enclosure or plastic box enclosure (8.5 X 6.5 X 4.5"). Satellite version in plastic box enclosure only	Aluminum or fiberglass enclosure available: Height:13.5 inches, Width: 11.5 inches, Depth: 7.125 inches
Data Integrity	Data stored in non-volatile (EEPROM) memory	Data stored in non-volatile (EEPROM) memory
Environment	Temp: 30 degrees C to +70 degrees C; Humidity: 0-95% non-condensing	Temp: -40 degrees C to +85 degrees C; Humidity: 0-95% non-condensing
Compliance	FCC Part 15; Enclosure: NEMA 4X compliant for all Bullhorn types	TUV Certified; FCC Part 15; Enclosure designed to NEMA 4X standard
Software Interface	Bullhorn secure website. Standard web browsers. AI Network operations center	Bullhorn secure website. Standard web browsers. AI Network operations center
Comm.	GSM Digital Cellular or Orbcomm satellite	Orbcomm satellite

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Products protected by one or more of the following patents:

AI Specs Sheet: 2/23/2009 U.S. D437,243 S

Canadian No. 92670

U.S. 5,933,092

U.S. 5,785,842

U.S. 7,027,957

About American Innovations:

Based in Austin, Texas, American Innovations (AI) is a fast growing provider of products and services for the oil & gas, water & wastewater and agriculture industries, including web-based remote monitoring & equipment control, total survey solutions for corrosion monitoring, automatic meter reading, alarm point monitoring and integrity management. AI product lines include: Bullhorn® Remote Monitoring, MicroMax® Current Interrupters, CP Loggers, Allegro Field PC®, Pipeline Compliance System (PCS) and Risk Intelligence™ Platform and Solutions. AI also offers cathodic protection services via Bass Engineering.

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