

Accutech BR20

DIN rail mounted base radio





At the heart of any Accutech wireless instrument network is the wireless base radio. The Accutech BR20 automatically communicates with deployed instrumentation field units attached to it in a local area star network and makes the field data available to an existing control system through a local serial Modbus interface. An optional integrated long-haul data radio, for links to centralised data collection sites, is available.

One base radio can communicate with up to a maximum 100 field units. With the capability to scale up to as many as 256 base radios, Accutech easily accommodates your expansion plans.

Product Data Sheet Accutech Base Radio Specifications



Accutech BR20

Functional

Device	Base Radio
Location	Interfaced with long-haul radio, controller or PC
Frequency Range	900MHz and 2.4GHz license-free bands
Input Power	0.5W maximum, 30mA maximum (at 13.8VDC nominal)

Features

Configuration Interface

Local:	LCD and Keypad
Remote:	Accutech Manager, Windows™-based GUI software, providing network-wide monitoring and performance-management features and field unit configuration capabilities
RF Characteristics	<p>900MHz:</p> <ul style="list-style-type: none"> • 902 to 928MHz Frequency Hopping Spread Spectrum (FHSS); FCC certified ISM license-free band • 915 to 928MHz (Australia) • 921 to 928MHz (New Zealand) • Data Rates: 4,800, 19,200 or 76,800bps <p>2.4GHz:</p> <ul style="list-style-type: none"> • 2400 to 2483.5MHz ISM license-free band Frequency Hopping Spread Spectrum (FHSS) Radio • Typical Electrical Transmit Power: +10.6dBm • Typical Receive Sensitivity (0.1% BER): -102dBm @ 50kbps, -99dBm @ 100kbps, -99dBm @ 200kbps • Typical CW Receiver Blocking Rejection: 64dB for CW @ +/- 5MHz, 74dB for CW @ +/- 30MHz • Data Rates: 50 and 100kbps (FSK Modulation), 200 kbps (GFSK Modulation)
Output Options	<ul style="list-style-type: none"> • RS-485 digital communications with conversion to RS-232 or USB for interface with PC or server and Accutech Manager. • Serial Modbus RTU (Binary) over RS-485 • Modbus over TCP/IP (via optional converter)

Connections

Data	<ul style="list-style-type: none"> • RS-232 or RS-485, RJ45 • RS-232 (DTE - Rx/D, Tx/D) • RS-485 (2 wires, Termination DIP switch enabled) • Tx, Rx LED
Diagnostics	<ul style="list-style-type: none"> • RS-232 or RS-485, RJ45 • RS-232 (DTE - Rx/D, Tx/D) • RS-485 (2 wires, Termination DIP switch enabled) • Tx, Rx LED
Antenna Type	1/2 wave dipole, 6dB maximum gain allowable
Antenna Connector	RPSMA

General

Input Voltage	<ul style="list-style-type: none"> • 11 to 30VDC, 30VDC maximum
Input Current	30mA maximum (at 13.8VDC nominal)
Input Power	0.5W maximum (11 to 30VDC)
Dimensions:	<ul style="list-style-type: none"> • 108mm (4.25in.) wide • 118mm (4.625in.) high • 44mm (1.75in.) deep
Packaging	Corrosion-resistant zinc plated steel with black enamel paint
Terminations	<ul style="list-style-type: none"> • 5-pole removable terminal block, 12-22AWG, 15A contacts • 8-pole RJ-45 style jacks
Environment	<ul style="list-style-type: none"> • 5% RH to 95% RH, non-condensing • -40°C to 70°C (-40°F to 158°F) operation • -40°C to 85°C (-40°F to 185°F) storage
LED Power Enable	LEDs can be disabled with DIP switch
Certifications	<p>North America HAZLOC:</p> <ul style="list-style-type: none"> • cCSAus • Non-Incendive • Class I, Div. 2, Groups A, B, C & D, T4 <p>ATEX/IECEX HAZLOC:</p> <ul style="list-style-type: none"> • LCIE • ATEX II 3G, Ex nA IIC T4 per EN 60079-15, protection type n (Zone 2) • IECEX, Ex nA IIC T4 per IEC 60079-15, protection type n (Zone 2) <p>EMC & Radio:</p> <ul style="list-style-type: none"> • North America: FCC, IC • Europe: CE Mark • Australia/New Zealand: C-Tick
Warranty	3-Year parts and labor

Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com.

Product Data Sheet Accutech Base Radio Specifications



Long-Haul Trio K-Series Radio (To be ordered at time of purchase. Radio cannot be retrofitted in field)

Functional

Location	Master, remote, repeater or network-bridge
Radio Frequency Range	<ul style="list-style-type: none"> • 902MHz - 928MHz band (FCC/IC) • 915MHz - 928MHz band (Australia) • 915MHz - 921MHz band (New Zealand)
RF Channel Data Rate	32,000, 64,000, 128,000 or 256,000bps

Features

Configuration Interface	TView+: Windows™-based GUI software, providing configuration, network management and diagnostics
Radio Frequency Accuracy	±2.5ppm

Transmitter

Power	0.01W - 1W (+30 dBm) in 0.5 dB steps
Protection	Over-temperature and reverse power
Modulation	2 Level GFSK
Tx Key-up Time	<50µs

Receiver

Selectivity	Better than 50dB
Intermodulation	Better than 65dB

Connections

Data Ports	2 x RJ45 female port wired as DCE (modem)
System/Diagnostics Port	1 x RJ45 for diagnostic, configuration and re-programming
Antenna	Two SMA
Terminations	<ul style="list-style-type: none"> • 5-pole removable terminal block, 12-22AWG, 15A contacts • 8-pole RJ-45 style jacks
LED Display	Four Bi-color Red/Green LEDs: Power/Tx, Sync/NoRx, Port A Rx/Tx, Port B Rx/Tx

Modem

Data Serial Port A	RS-232 RJ45 (DCE - Rx/D, Tx/D, CTS, RTS, DTR, DCD) Or RS-485 RJ45 (2 wires, Termination DIP switch-enabled)
Data Serial Port B	RS-232 RJ45 (DCE - Rx/D, Tx/D) Rx/D and Tx/D are 3.3V CMOS signals. (Shared with the System/Diagnostics connection)
System/Diagnostics Port	RS-232 RJ45 (DTE - Rx/D, Tx/D) Rx/D and Tx/D are 3.3V CMOS signals. (Shared with Push to Talk (PTT) input.) (RJ45 Shared with the Port B connection.)
Flow Control	Hardware or 3-wire interface
Bit Error Rate	<1 x 10 ⁻⁶ @ -109dBm
Encryption	256-bit AES encryption (within North America/Australia only)
Collision Avoidance	Channelshare™ collision avoidance system
Multistream™	Simultaneous delivery of multiple data protocols

General

Transmit Current	500mA (at 13.8VDC nominal)
Receive Current	<120mA (at 13.8VDC nominal)
RSSI Output	Receive Signal Strength Indication analog output available on P1 connector
Factory Default Input	Restore Factory Defaults available on P1 connector
1PPS	1PPS (pulse per second) input available on P1 connector
Push-to-Talk	PTT input available on Port B/DIAG COM port connector. DIP Switch-enabled
Power Supply Voltage Monitor	Yes
Operating Modes	<ul style="list-style-type: none"> • 5% RH to 95% RH, non-condensing • -40°C to 70°C (-40°F to 158°F) operation • -40°C to 85°C (-40°F to 185°F) storage
Diagnostics	<ul style="list-style-type: none"> • Network-wide operation from any remote terminal • Non-intrusive protocol - runs simultaneously with the application • Over-the-air re-configuration of parameters • Storage of data error and channel occupancy statistics • Built-in error rate testing capabilities

Approvals and Certifications

IC	RSS 139 (RSS 210)
ACA	AS1468-2003
Hazardous Locations North America:	<ul style="list-style-type: none"> • CCSAUS Non-Incendive Electrical Equipment for use in Class I, Division 2 Hazardous Locations per CSA Std C22.2 No. 213-M1987 / UL1604 (3rd Ed.) Temperature Code T4 • CAN/CSA Std. C22.2 No.0-M91 (R2001) and CSA C22.2 No. 142-M1987 and UL508 (17th Ed.) in Canada and USA
Digital Emissions	<ul style="list-style-type: none"> • FCC 47 CFR Part 15, Subpart B, Class A Verification • ICES-003 Issue 4 (Canada) • AS/NZS CISPR 22: 2996 (Australia/New Zealand) • C-Tick. Registration number N15744
Warranty	3-Year parts and labor

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Product Data Sheet Accutech Base Radio

Model Code and Dimensions

	TBUABR20-1000 represents a typical part number
Model	Type
TBUABR20	Wireless Base Radio
Code	Select: RF Module Type
1	902MHz - 928MHz band (FCC / IC)
2	915MHz - 928MHz band (Australia)
3	915MHz - 921MHz band (New Zealand)
5	2.4GHz (CSA certified) *
6	2.4GHz (ATEX & IECEx certified) *
Code	Select: Long Haul Radio
0	None
	900MHz Frequency Band (No antenna or cables included)
B	900MHz Trio Spread Spectrum Radio with encryption, 902-928MHz (FCC / IC)
C	900MHz Trio Spread Spectrum Radio with encryption, 915-928MHz (AUS)
D	900MHz Trio Spread Spectrum Radio, 915-928MHz (BRAZIL)
E	900MHz Trio Spread Spectrum Radio, 921-928MHz (NZ)
	2.4 GHz Frequency Band (No antenna or cables included)
K	2.4GHz Trio Spread Spectrum Radio with Encryption, 500mW (CANADA, USA & AUSTRALIA)
L	2.4GHz Trio Spread Spectrum Radio, 500mW (OUTSIDE OF EUROPE, CANADA, USA & AUSTRALIA)
Code	Future Option
0	None
Code	Future Option
0	None

* A high gain antenna is recommended when selecting this option – see Accutech Accessories data sheet

