The fastest way to wireless.

AeroComm's ACE RF data modem combines high performance and reliability with heavy-duty packaging designed to withstand harsh environmental conditions—splashing water, corrosive agents, dirt, ice and snow. ACE suits rugged industrial applications where outdoor communications and NEMA-4x ratings are essential. ACE provides high output power to deliver line-of-sight ranges up to 20 miles with high-gain antennas.

ACE embeds two different protocols to complement a variety of industrial uses. ACE6790 utilizes a dynamic addressing peer-to-peer protocol for enabling true mesh topology, while the ACE6490 employs AeroComm's signature client/server architecture for point-to-point or point-to-multipoint networks.

ACE modems are completely compatible with AeroComm's AC4490 transceivers and CL4490 commercial modems. This allows OEMs to construct systems which utilize ruggedized devices only where necessary, saving system costs.

ACE Product Highlights

- ***NEMA-4x** rated packaging.*
- ***One full watt** of RF output power.*
- ***Industrial temp** range -40° to +80° C.*
- ***Standard interface,** RS232 or RS485.*

Applications

Field Surveillance
Small yet durable, ACEs make it possible to set up communication points anywhere they are needed. Use in SCADA, utilities and other outdoor applications.

Process Control
Set up any factory or lab conveniently. Engineers and technicians can quickly move data links from machine to machine without costly wiring.

Weigh Scales
Instantly access weight and measurement data. ACE virtually cuts wires to all brands and sizes of scale equipment, from indicators to receipt printers.

Data Logging
Upload data to your PC from your logger or monitor without getting up from the chair. Use ACE for level monitoring, control instruments, etc.

Electronic Signs
Faster, cheaper and less invasive than trenching to lay cable, ACEs simply attach to the serial ports of both the PC and sign or scoreboard.

Specifications

PARAMETER	ACE6490 MODEL	ACE6790 MODEL
Network architecture	Client/server	Peer-to-peer
Standard interface	RS232 or RS485	RS232 or RS485
Frequency, modulation	902-928 MHz FHSS FSK	902-928 MHz FHSS FSK
Serial interface data rate	Up to 115.2 Kbps	Up to 115.2 Kbps
Output power	1000mW variable	1000mW variable
Input power	7Vdc to 26Vdc	7Vdc to 26Vdc
Power consumption	400mA TX, 40mA RX	400mA TX, 40mA RX
Power supply	AC transformer via 6-foot (183 cm) cable (optional; provided with starter packs)	AC transformer via 6-foot (183 cm) cable (optional; provided with starter packs)
Connection	16-pin connector (optional cable with DB9 female; power-supply jack)	16-pin connector (optional cable with DB9 female; power-supply jack)
Electrical requirements	Line voltage 100-120V (240V outside U.S.); Frequency 50-60 Hz	Line voltage 100-120V (240V outside U.S.); Frequency 50-60 Hz
Channels	Up to 32	Up to 32
Security	1-byte system ID, DES	1-byte system ID, DES
Sensitivity	-99 dB @ full RF data rate	-99 dB @ full RF data rate
Range (line of sight)	Up to 20 miles (32 km) w/ high-gain antenna	Up to 20 miles (32 km) w/ high-gain antenna
Temperature	-40° to +80°C	-40° to +80°C
Humidity (non-condensing)	10% to 90%	10% to 90%
Dimensions	6.87 x 3.57 x 2.05 inches (175 x 91 x 52 mm)	6.87 x 3.57 x 2.05 inches (175 x 91 x 52 mm)
Weight	< 10 oz (< 284 g)	< 10 oz (< 284 g)
Antenna; connector	Dipole; RPSMA jack (female)	Dipole; RPSMA jack (female)
Configuration software	Optional, for Windows OS	Optional, for Windows OS

AEROCOMM

RF232® Protocol

AeroComm's unique embedded transparent protocol simplifies the OEM's integration process by allowing for plug-and-play installation. As each ACE modem receives raw data, it manages over-the-air protocol to assure successful communication.

RF PROTOCOL

Acknowledgment (ACK)
Transmitted packets are successfully acknowledged. If not, they are resent until successful (user-selectable number of retries). Error detection is used and duplicate data is filtered out before sending to the host interface. Optional *full duplex control* setting allows equal time for transmitting and receiving data at the RF level, keeping a single transmitter from dominating the system bandwidth.

INTERFACE PROTOCOL

Change configuration commands
ACE's configuration can be changed through AT commands. Change-on-the-fly parameters include client or server designation, destination MAC address, channel number (to communicate with a different server), enter/exit low-power modes, etc. Custom settings are available by user request.

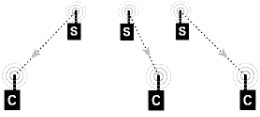
In-range indicator
Hardware link indication of client in range of server.

ERROR HANDLING

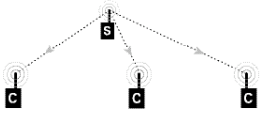
Error detection
Multi-stage error detection with transmitter retries for RF system and raw data. Duplicate packets are filtered out when data is received more than once due to retries and missed ACKs.

Data encryption standard (DES)
DEC uses an established algorithm and a 56-bit key stored in onboard EEPROM to protect data.

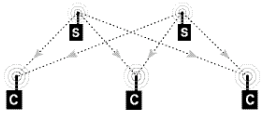
RF Architectures



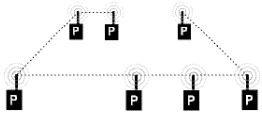
Point-to-point
ACE6490



Point-to-multipoint
ACE6490



Multipoint-to-multipoint
ACE6490



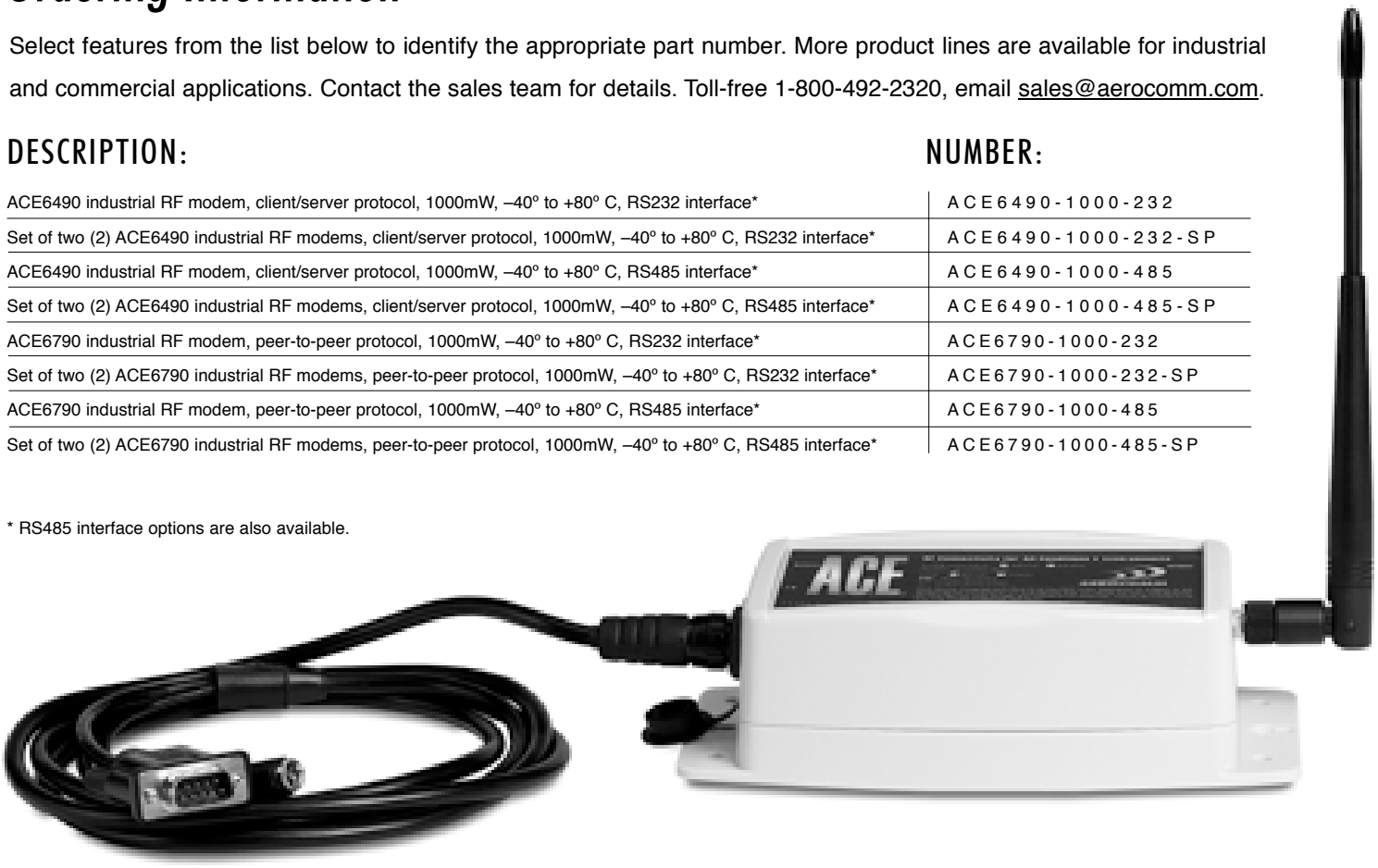
Peer-to-peer
ACE6790

Ordering Information

Select features from the list below to identify the appropriate part number. More product lines are available for industrial and commercial applications. Contact the sales team for details. Toll-free 1-800-492-2320, email sales@aerocomm.com.

DESCRIPTION:	NUMBER:
ACE6490 industrial RF modem, client/server protocol, 1000mW, –40º to +80º C, RS232 interface*	ACE6490-1000-232
Set of two (2) ACE6490 industrial RF modems, client/server protocol, 1000mW, –40º to +80º C, RS232 interface*	ACE6490-1000-232-SP
ACE6490 industrial RF modem, client/server protocol, 1000mW, –40º to +80º C, RS485 interface*	ACE6490-1000-485
Set of two (2) ACE6490 industrial RF modems, client/server protocol, 1000mW, –40º to +80º C, RS485 interface*	ACE6490-1000-485-SP
ACE6790 industrial RF modem, peer-to-peer protocol, 1000mW, –40º to +80º C, RS232 interface*	ACE6790-1000-232
Set of two (2) ACE6790 industrial RF modems, peer-to-peer protocol, 1000mW, –40º to +80º C, RS232 interface*	ACE6790-1000-232-SP
ACE6790 industrial RF modem, peer-to-peer protocol, 1000mW, –40º to +80º C, RS485 interface*	ACE6790-1000-485
Set of two (2) ACE6790 industrial RF modems, peer-to-peer protocol, 1000mW, –40º to +80º C, RS485 interface*	ACE6790-1000-485-SP

* RS485 interface options are also available.



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Laird Technologies:

ACE6790-1000-232-SP ACE6490-1000-232-SP ACE6790-1000-232 ACE6490-1000-232