

13.56 MHz High Frequency Data Sheet



Transponder Memory

Note: Tag package models are generically represented. There are many memory chips from which to choose.

Memory	ISO Standard	Memory	ISO Standard	Memory	ISO Standard
256 bits	15693	512 bits	14443A	176 bits	14443B
512 bits	15693	320 bytes	14443A	1k bits	14443B
576 bits	15693	1k bits	14443A	2k bits	14443B
1k bits	15693	1k bytes	14443A	4k bits	14443B
2k bits	15693	4k bytes	14443A	8k bits	14443B
2.4k bits	15693	8k bytes	14443A	16k bits	14443B
2.5k bits	15693			32k bits	14443B
2k bytes	15693			64k bits	14443B
10k bits	15693				

Do not see the particular package, size or shape you seek? **Customization is easier than you think. Please ask.** Private labeling is available on all Tags given sufficient geography.

PCB Ring Tags



Material:	PCB w/etched Antenna
Dimensions:	1mm thick, various formats/sizes Square Rectangular Round w/center hole
Options:	Conformal Coating Custom sizes available

Clear Laminate Disc Tags



Material:	
Dimensions:	13mm, 15mm, 18mm, 20mm, 25mm, 27mm, 30mm, 35mm Peel & Stick option
Weight:	0.5 grams
Temperature:	-40c to +50c

13.56 MHz High Frequency Data Sheet

PVC Disc Tags



Material:	PVC
Colors:	Any
Dimensions:	20mm, 25mm, 30mm 35mm w/center hole
	Custom sizes available
	Peel & Stick Option
Temperature:	-40c to +85c

Epoxy Disc Tags



Material:	Potted Epoxy
Colors:	Any
Dimensions:	20mm, 50mm, Peel & Stick
	Custom sizes available
Temperature:	-40c to +85c

ABS Disc Tags



Material:	ABS
Color:	Any (printing optional)
Dimensions:	30/40/50mm w/center hole
	Custom sizes available
Temperature:	-40c to +85c

Laundry Tags



Material:	PPS + Epoxy
Dimensions:	9mm, 10mm, 11mm, 12mm, 13mm 14mm, 15mm, 16mm, 17mm, 18mm 19mm, 20mm, 22mm, 24mm, 26mm, 28mm, 30mm
Weight:	0.25 to 2.5 grams
Temperature:	-40c to +85c

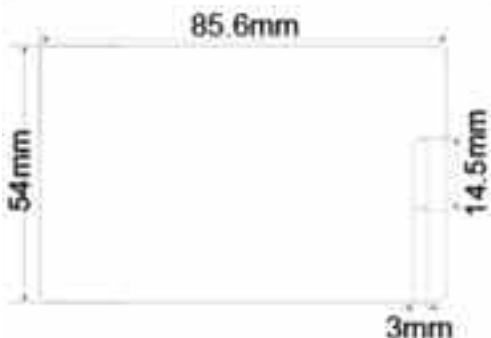
13.56 MHz High Frequency Data Sheet

ISO Cards



Material:	PVC, glossy or matt finish
Color:	White, graphics printing ready
Dimensions:	86mm x 54mm x .8mm
Weight:	5.8 grams
Temperature:	-50c to +85c
Options:	<ul style="list-style-type: none"> Offset Printing Silkscreen Printing Encoding Thermal Rewritable Film UltraViolet Printing Micro Seal, Micro Text Hologram, Guilloche Laser Engraving Signature/Scratch Panel SIM Punch Magnetic Stripe (350 Oe, 650 Oe, 2750 Oe, 4000 Oe) Top Slot, Side Slot

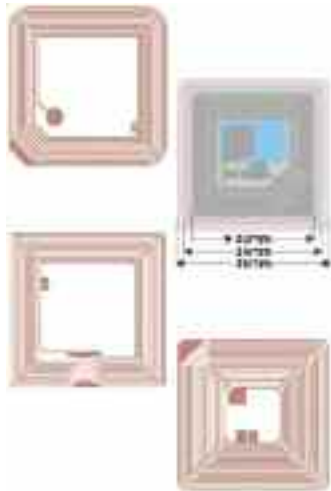
Clamshell Cards



Material:	ABS Front Shell
	PVC Back Cover
Color:	White
Dimensions:	85.6mm x 54mm x 1.8mm
Weight:	9 grams
Temperature:	-50c to +85c
Options:	<ul style="list-style-type: none"> Offset Printing Silkscreen Printing Encoding Top Slot

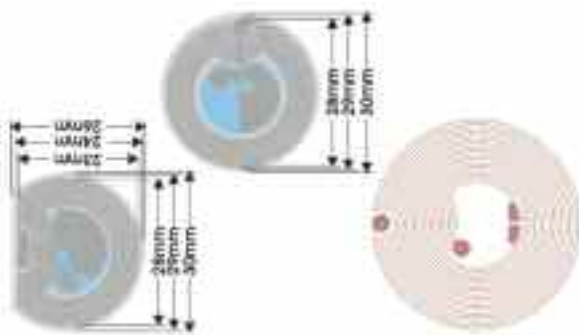
13.56 MHz High Frequency Data Sheet

Inlay Labels – Square



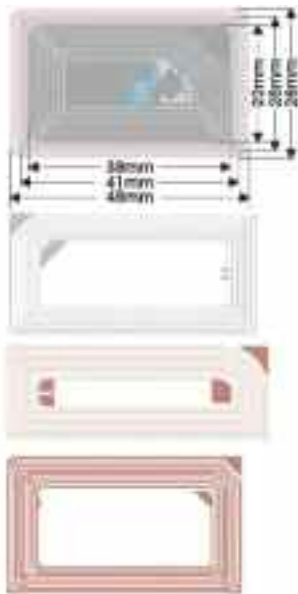
Material:	Paper, PET, PVC
Dimensions:	35 x 35mm
	38 x 38mm
	45 x 45mm
	50 x 50mm
	52 x 52mm
Weight:	0.5 grams
Temperature:	-25c to +50c
Packaging:	Single/Fanfold/Roll

Inlay Labels – Round



Material:	Paper, PET, PVC
Dimensions:	25mm 27mm
	30mm 30mm x 26mm
	35mm 45mm
	58mm
Weight:	0.5 grams
Temperature:	-25c to +50c
Packaging:	Single/Fanfold/Roll

Inlay Labels - Rectangle



Material:	Paper, PET, PVC
Dimensions:	45 x 28mm
	82 x 23mm
	85 x 54mm
	70 x 40mm
	80 x 20mm
	55 x 17mm
	30 x 15mm
	47 x 27mm
Weight:	0.5 grams
Temperature:	-25c to +50c
Packaging:	Single/Fanfold/Roll

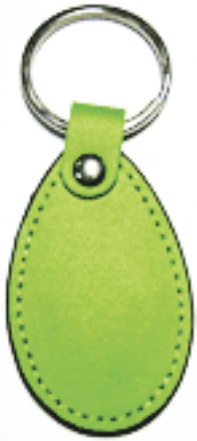
13.56 MHz High Frequency Data Sheet

Roll Stock



Material:	Print receptive polyethylene
Color:	White
Dimensions:	Standard 2" x 4", 4" x 4" or 4" x 6" and custom sizes for Zebra printers
Temperature:	-40c to +85c

Keyfobs



Materials:	Leather, PVC, ABS
Dimensions:	Various
Weight:	0.5 to 10 grams
Temperature:	-40c to +50c
Options:	Private Labeling
	Silk Screening
	Hot Stamp

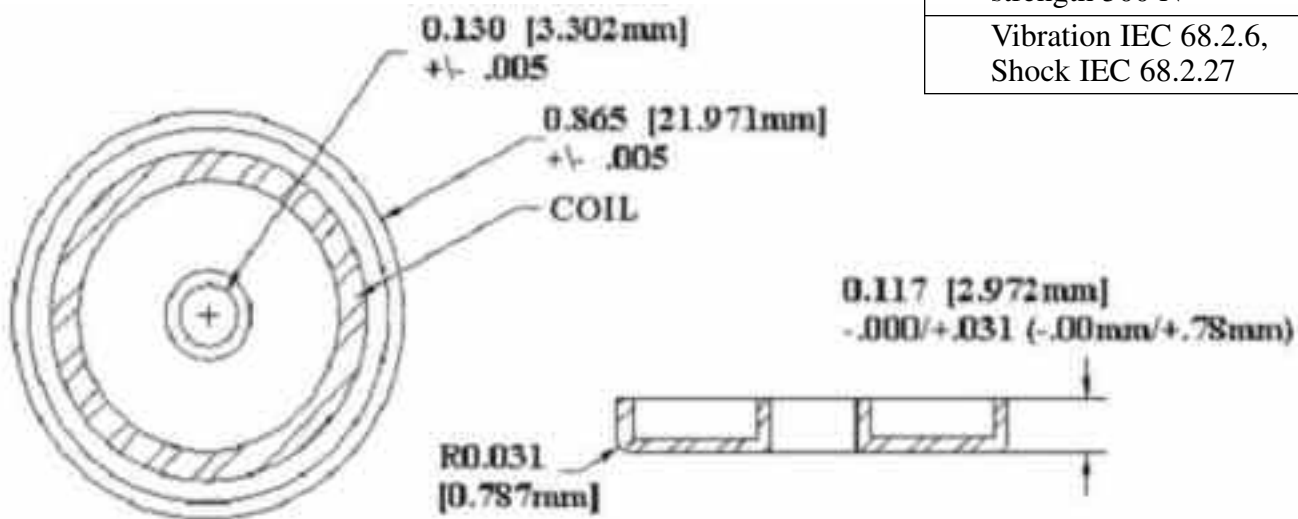


13.56 MHz High Frequency Data Sheet

Model HF-1772-HT 22mm High Temperature Tag



Storage Temperature: 200° C (392° F) indefinite (request samples for testing)
Higher temperatures capable at lesser time intervals
Writing Temp: 125° C (257° F), needs only 30 second cool down from 200° C
Weight: 5 oz. (14 grams)
Housing Material: Proprietary
Potting Material: 2 part mix, (hardener) and Epoxy (resin)
Chemical composition not published for proprietary reasons
Color: Black or Black with Grey housing
Chemical: Water Immersion IP68
Aqueous Solution of Salts, Unleaded gasoline and Petroleum
Mechanical: Axial and radial compression strength 500 N
Vibration IEC 68.2.6, Shock IEC 68.2.27

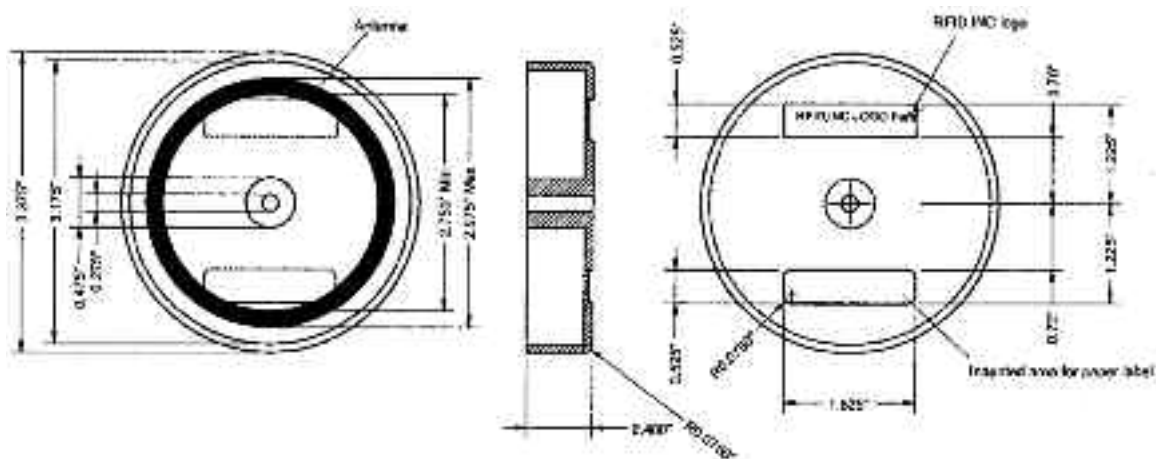


13.56 MHz High Frequency Data Sheet

Model HF-1772-LGHT 87.5mm High Temperature Tag



Storage Temperature:	200° C (392° F) indefinite (request samples for testing) Higher temperatures capable at lesser time intervals
Writing Temp:	125° C (257° F), needs only 30 second cool down from 200° C
Weight:	3.1 oz. (88 grams)
Housing Material:	Proprietary
Potting Material:	2 part mix, (hardener) and Epoxy (resin) Chemical composition not published for proprietary reasons
Color:	Black or Black with Grey housing
Chemical:	Water Immersion IP68 Aqueous Solution of Salts, Unleaded gasoline and Petroleum
Mechanical:	Axial and radial compression strength 500 N Vibration IEC 68.2.6, Shock IEC 68.2.27



13.56 MHz High Frequency Data Sheet

Metal Tags

When backed with a ferrous material, just about any HF Tag can be metal mountable, but here is a sampling of a few specifically designed with either the ferrous backing or in a package that provides for adequate spacing.



Flat Metal Mount Tags

Material:	Fiberglass, potted epoxy
Color:	Various
Dimensions:	50mm sq., 34mm sq, various
Options:	Mounting holes, peel & stick backing
Temperature:	-40c to +85c



Model HF-1788 LPG Cylinder Tank Tag

Material:	ABS & epoxy
Color:	Black
Dimensions:	31mm diameter x 8mm height
Weight:	4 grams
Temperature:	-40c to +85c



Model HF-1781M Bar Tag

Material:	ABS & epoxy
Color:	Black
Dimensions:	3.5" x .9" x .9"
Weight:	47 grams
Temperature:	-40c to +85c



Model HF-1773 Series Ampoules

Material:	Glass or plastic
Dimensions:	3x13mm, 23x4mm, 30x4mm, 35x4mm
Weight:	less than 1 gram
Temperature:	-40c to +85c

13.56 MHz High Frequency Data Sheet

Specialty Tags



Animal Ear Tag

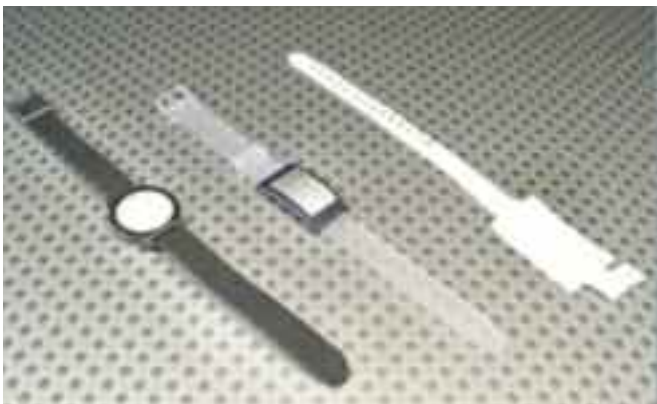
Material:	Polyurethane
Color:	Yellow
Dimensions:	43 x 62 x 1.95
	Punch: 8mm ID, 11mm OD
Weight:	8 grams
Temperature:	-40c to +50c
Options:	Applicator Clamp available

Screw Tag



Material:	ABS
Color:	Black or Blue
Dimensions:	Small: 7.8mm ID
	Medium: 8.7mm ID
	Large: 20mm ID
Weight:	3 grams or less
Temperature:	-40c to +85c

Wristband Tags



Material	Waterproof ABS
	Nylon or Velcro Band
Color:	Any
Weight:	13 grams
Temperature:	-40c to +85c

13.56 MHz High Frequency Data Sheet

Model HF-3020 OEM 13.56 MHz Reader

- ISO 15693 and 14443A/B from a single Reader
- Automatically detects Tag type and reads UID
- RS232 or USB
- Power LED
- Read LED
- Single or Duplicate Report or Polling Read Modes

Supply Voltage	+7vdc to +24vdc
Current	100mA at 7vdc, 40mA at 24vdc
Reader Dimensions	2.5" x 2.375" (62mm x 60mm)
Antenna Dimensions	2.25" x 1.6875" (56mm x 43mm)
USB	Receptacle, Type B
RS232 Cabl	9 pin female D-sub or pigtailed
Power Cable	Quick connect or pigtailed
RS232 Comms	9600, 8, N, 1, None
Operating Temp	-40c to +55c (-40F to +131F)
Storage Temp	-55c to +85c (-67F to +185F)
Approvals	CE
Humidity	95% non-condensing



Reader Mounted in Housing (lid not shown)

Antenna may be externally mounted
Custom Antenna sizes and designs are available



Reader PCB



Reader Antenna

Manufacturer	Tag Chip	Memory	ISO Protocol	Supported	
ATMEL	AT88RF020	2k	14443B	Yes	
	AT88SC0404CRF	4k	14443B	Yes	
	AT88SC0204CRF	2k	14443B	Yes	
	AT88SC0104CRF	1k	14443B	Yes	
	AT88SC3216CRF	32k	14443B	Yes	
	AT88SC1616CRF	16k	14443B	Yes	
EM	AT88SC0808CRF	8k	14443B	Yes	
	AT88SC6416CRF	64k	14443B	Yes	
	EM4135	2.4K	15693	Yes	
	EM4233	2k	15693	Yes	
Fujitsu	MB89R118	2kbyte	15693	Yes	
	MB89R119	2k	15693	Yes	
Infineon	my-d SRF55V01P	576bit	15693	Yes	
	my-d SRF55V02P	2.5k	15693	Yes	
	my-d SRF55V02P HC	2.5k	15693	Yes	
	my-d SRF55V02S	2.5k	15693	Yes	
	my-d SRF55V10P	10k	15693	Yes	
	my-d SRF55V10P HC	10k	15693	Yes	
	my-d SRF55V10S	10k	15693	Yes	
	SLE66R35	1k	14443A	Yes	
Inside	PicoTag	2k	Proprietary	Yes	
	Philips NXP	Desfire	8k	14443A	Yes
		ICODE SL1	512bit	Proprietary	Yes
	ICODE SLI SL2	1k	15693	Yes	
	Mifare Ultralight				
	MF0ICU1	512bit	14443A	Yes	
	Mifare MF1ICS20	320byte	14443A	Yes	
	Mifare MF1ICS50	1kbyte	14443A	Yes	
	Mifare MF1ICS70	4kbyte	14443A	Yes	
STM	LRI512	512bit	15693	Yes	
	SR176	176bit	14443B	Yes	
TagSys	C370	896bit	15693	Yes	
	C370S	1280bit	15693	Yes	
TI	Tag it HF I Standard	256bit	15693	Yes	
	Tag It HF I Plus	2k	15693	Yes	

13.56 MHz High Frequency Data Sheet



Model 3037E – Hand Held RFID Wand Reader

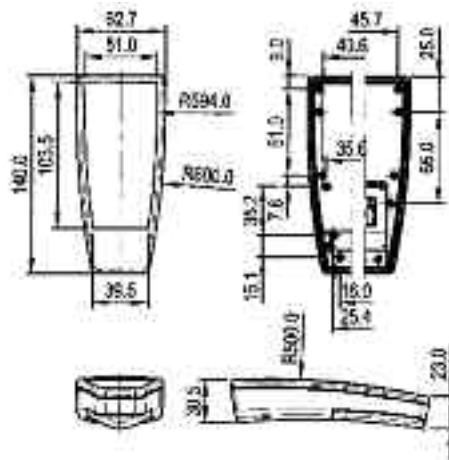
- Bluetooth
- Long Range Wireless
- RS232
- USB

The Model 3037E is a field proven versatile robust tool offering Bluetooth, RS232, USB, or long range wireless options. Using a standard 9v battery with sleep mode technology, loss of power in the field is never a concern. A vibration upon read feature is especially useful in noisy harsh environments. The power LED will let you know if the battery needs replacing.

Features

- 9 volt battery
- Vibration upon read
- Sleep mode conserves battery
- Power LED

Electrical Specifications	Supply Voltage	9 volts
	Current Draw	125 mA
	Battery Life	3000 reads (standard 9v battery)
Mechanical Specifications	Dimensions	140mm x 62.7mm x 30mm
	USB	Receptacle, Type B
	RS232 Cable	Spiral, stretches to 10'
	Weight w/battery	6 ounces (170 grams)
Other	Error Detection	CRC Algorithm
	RS232 Communications	9600, 8, N, 1
Environment	Operating Temperature	-40c to +55c (-40F to +131F)
	Storage Temperature	-55c to +85c (-67F to +185F)
	Approvals	CE
	Humidity	95% non-condensing



13.56 MHz High Frequency Data Sheet

CLIENT LIST (partial)

USA Medical:

Abbot Labs
Advanced Bionics
Ameripharm
Anthem Prescription
Boston Scientific
Cardinal Health
CDS/Procare
Cigna Tel-Drug
CR Bard
CVS
Eckerd Drug
ExcellerX
FamilyMeds.com
Kaiser Permanente
McKesson SI/Baker
Medtronic
Pacifcare
Prescription Solutions
Rite Aid
Rx Direct
Smith's Medical
Tel-Drug
Veteran's Admin
Walgreens
Wellpoint
Wyeth Labs

USA Automotive:

Allen Bradley
ATS
Bendix
Caterpillar
Daimler Chrysler
Decoma
Delphi
Detroit Diesel
DT Industries
Federal Mogul
Ford Motor Company
General Motors
Honda
Howmet
John Deere
Meridian Automotive
Michelin
Neaton Automotive
Polaris Industries
Toyota
Trident Automotive
Visteon
Volvo

USA WIP:

Alcoa
Amana
Asyst Technologies
AT&T/Lucent
Avtron
BAE Automation
Boeing Corporation
Borg Warner
BW Rogers
Cameron Barkley
Carlton Bates
CEI Automation
Charbroil
Copeland
Cutler Hammer
Eastman Kodak
EI DuPont
Electrolux
Eskay
Esselte
Estee Lauder
Flexlink Conveyors
Frigidaire
General Electric
Hagemeyer
Ingersol Rand
Key Handling Sys
Kim Automation
Knapp Automation
Krauss-Maffei
Lear Jets
Marshall's
Maytag
Motorola
Nat'l Control Sys
Osh Kosh B'Gosh
Osram Sylvania
Pepsi (Quaker)
Proctor & Gamble
Reliance Rockwell
Rockwell Automation
SCI Sanmina
Sears
SI/Handling Systems
Square D Company
Siemens
Stanley Tools
Swisslog
Texas Instruments
Schick
Thomson Electronics

TJ Maxx
TRW
Valeo Sylvania
Wepco
Whirlpool
Wunderlich-Malec

USA Discrete

Process Controls:

Ace Hardware
Conagra
Exxon Mobil
Inland Steel
Nestle
Nippon Steel
U.S. Steel

USA Routing/ASRS:

AGV Products
Amerden
Anheuser Busch
Jervis Webb
Lemans
Pilgrim's Pride
The Denver Post
The Boston Globe
Transbotics
U.S. Air Force

USA Entertainment

Customer Loyalty:

Bronx Zoo
Electrosonic
Hard Rock Café
Maltbie
NASCAR Museum
Northwest Airlines
Six Flags
Techno Media
Vail Resorts

USA Other:

Atmel/Temic
Computers Unlimited
EFI Vutek
H.E. Butt Grocery
Hewlett Packard
Honeywell
Los Alamos Labs
Lowry Computer
Magic Chef
NASA

Nokia
Rice Lake Weighing
Sandia National Labs
Timken
U.S. Navy

Asia:

IceGen (distributor, India)
Electronic Corporation of India
Tata Consultancy
Toyota (Japan)

Australia/Africa:

Alcoa World Alumina
BHP Billiton Iron Ore
Byrncut Mining
CMA Systems
Dampier Salt
Fortescue Metals
Hamersley Iron
Harmonic (dist, S. Africa)
Logitech Consultants
Newcrest Telfer Gold Mine
Pacific Automation (dist, AUS)
Port Waratah
Queens Creek
Robe River Iron
Sinclair Knight Merz
ThyssenKrupp
Tomago Aluminum
Voest-Alpine

Canada:

AMT Mach Tools (dist, Tor)
Aurora Bar Code
CIMS (distributor, BC)
City of Fort St. John
CraneSmart
Dofasco
GLC Controls (distributor, BC)
Kellogg's Cereal
Kielhauer
LSZ Papertech
Rotalec (distributor)
Synergex (distributor, Toronto)
Stelco Steel

Central & South America:

EGO (distributor, Mexico)
General Electric (Mexico)
Hylsa (Mexico)

IdeaNet (distributor, Chile)
Lasso (distributor, Mexico)
MABE Leiser (Mexico)
SCI Sanmina (Mexico)
Retex (Peru)
RSI (Mexico)
TecWise (distributor, Brazil)
Thomson Electronics (Mexico)
Trends (distributor, Brazil)
TRW (Mexico)

Europe:

AST (Swiss)
Efacec (Portugal)
FQ (distributor, Spain)
Infos (distributor, Portugal)
London Heathrow Airport
Louis Vaughn (distributor, UK)
MDA Systems (France)
Moncks & Crane (UK)
SCI Sanmina (Hungary)
Securitas (Sweden)
Tempore (Austria)
TRW (UK & Germany)

USA Distributors:

Applied Automation (NY)
Applied Controls (PA, MD, DE)
Axis, Inc. (NJ, NY)
C&E Sales (IN, OH, KY)
Cassady Co. (AK, OK, LA, TX)
Cornerstone (TN, AL, GA)
Cross Automation
(NC, SC, VA, FL, AL, GA)
Gibson Eng. (MA, CT, ME, RI)
Industrial Controls (west MI)
MSI Tech (CO, UT, AZ)
Power Motion (MO, KS)
Power/mation (MN, IA, WI, IL)
Precise Motion (FL)
Proud (western PA)
PRI (NY, NJ)
RR Floody (IL, IA)
Taylor Data (SC, NC, FL)