Upgrades to SpeX's Motor, Temperature Control System. $30K.

The SpeX array and readout electronic will be upgraded in 2012. However, this upgrade proposal does not include any funds to upgrapde SpeX's instrument control hardware. This hardware over 12 years old and will require replacement when Spex's array are upgraded. Hardware includes: one computer, motor controllers, ethernet based IO controller, three temperature controller/monitors, ten motors, two electronic boxes, and power supplies.

	DMC_4183, 8 axis, plus accessories	2500	2	5000
3	**Ethernet IO control unit**			
	RIO 47122	400	2	800
4	**Ethernet to serial server**			
	PortServer TS16 - R-232 serial port server	1400	1	1400
5	**AC power Control**			
	WTI IPS-800	700	2	1400
6	**Motor/Drivers**			
	SM3416 - replaces SM3410-V	1200	3	3600
	Equivalent ISM M202232-D stepper motors	220	10	2200
	Equivalent to IMS 4831 Drivers	200	10	2000
7	**Analog Conditioning/Compairator Board**			
	Custom Circuit board and parts	600	3	1800
8	**19" case, Cables, Power supplies, misc hardware**			
	Custom Circuit board and parts	4300	1	4300
9	**Three Temperature controlllers**			
	Lakeshore 325	2400	2	4800
	Lakeshore 218E	1500	1	1500

Total   **29350**

1. Computer, littledog

Small Form Factor Computer, Moderate speeed, linuxOS, $550.

2. Motor Controller

Part Number	Description	1pc/100pc
DMC-4113	1-axis Ethernet/USB controller card	$1095 / $795
DMC-4123	2-axis Ethernet/USB controller card	$1195 / $865
DMC-4133	3-axis Ethernet/USB controller card	$1345 / $925
DMC-4143	4-axis Ethernet/USB controller card	$1495 / $995
DMC-4153	5-axis Ethernet/USB controller card	$1695 / $1145
DMC-4163	6-axis Ethernet/USB controller card	$1795 / $1215
DMC-4173	7-axis Ethernet/USB controller card	$1895 / $1280
DMC-4183	8-axis Ethernet/USB controller card	$1995 / $1345
BOX4	Metal Enclosure for 1-4 axis models	$100 / $75
BOX8	Metal Enclosure for 5-8 axis models	$125 / $100
AMP-43040 (-D3040)	Four 500W servo drives	$700 / $400
AMP-43020 (-D3020)	Two 500W servo drives	$450 / $275
AMP-43140 (-D3140)	Four 20W servo drives	$175 / $155
SDM-44040 (-D4040)	Four 1.4A stepper drives	$175 / $155
SDM-44140 (-D4140)	Four 3.0A microstep drives	$600 / $400
SR-49000 (-SR55)	Shunt Regulator (55V)	$50 / $35
PS-2.50-24	60 Watt Power Supply (2.5Amps at 24V)	$85 / $60
PSR-12-24	12A-24 VDC Power supply	$250 / $175
PSR-6-48	6A-48 VDC Power Supply	$250 / $175
ICS-48115-F	15-pin D LD female to screw term	$50 / $35
ICS-48044-M	44-pin D HD male to screw term (I/O)	$75 / $50
ICS-48026-M	26-pin D HD male to screw terminals	$75 / $50
GalilTools	GalilTools	$195
GalilTools-Lite	GalilTools-Lite (editor/terminal/watch)	$20 CD
ActiveX Toolkit	Active X toolkit	$595

DMC-4183, 8 axis controller, $1995
Metal Enclosure, $125
Power Suppies, $80,
GalilToos $200
Approx $2.5K total

3. Ethernet IO control unit

Part Number	Description	1pc/100pc
RIO-47100	Remote I/O Controller with 0-5V analog	$295 / $195
RIO-47120	Remote I/O Controller with +/-10V analog	$345 / $245
RIO-47120-16	RIO-47120 with 16-bit ADC/DAC	$395 / $295
RIO-47102	RIO-47100 with expanded memory	$345 / $245
RIO-47122	RIO-47120 with expanded memory	$395 / $295
RIO-47200	RIO w/screw terminals, DIN & 5Vanalog in	$345 / $245
RIO-47202	RIO-47200 with expanded memory	$395 / $295
ICS-48026-M	26-pin D HD male to screw terminals	$75 / $50
ICS-48044-M	44-pin D HD male to screw term (I/O)	$75 / $50
SCB-48206	Signal conditioning board for RTDs	$175 / $125
SCB-48306-KTYPE	Signal conditioning board for K thermocouples	$175 / $125
SCB-48316-KTYPE	Signal conditioning board for K thermocouples	$225 / $175
PS-0.25-24	6 Watt Power Supply (250mA at 24V)	$50 / $35
PS-2.50-24	60 Watt Power Supply (2.5Amps at 24V)	$85 / $60
CABLE-44-1m	44-pin HD male D to discrete wires-1 meter	$35 / $24
CABLE-44-2m	44-pin HD male D to discrete wires-2 meter	$40 / $27
CABLE-26-1m	26-pin HD male D to discrete wires-1 meter	$25 / $25
-DIN rail mounting clip for RIO	-DIN rail mounting clip for RIO	$25 / $20
Ladder Interface Software	Ladder Interface Software	$195
GalilTools	GalilTools	$195
GalilTools-Lite	GalilTools-Lite (editor/terminal/watch)	$20 CD

RIO_47122, $400, 2 each

4. DigiPort Terminal Server

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Cart items: 0 Total: $0.00

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PortServer® TS 16

Product #: 70001733
Our Price: $1,363.00

[Add to Wishlist]

Quantity: 1   PortServer® TS 16   Add to Cart

- 16 serial ports (RJ-45)
- RS-232 only
- SSHv2, Radius authentication, port buffering
- 10/100Base-T Ethernet
- Digi's patented RealPort® COM port redirector

5. WTI IPS-800 AC power control unit.

IPS-800 Internet Power Switch Dual 15A 120V (8)5-15R

Designed to Solve Problems... Manufactured to Endure.

← ↑ →

IPS-800 Internet Power Switch Dual 15A 120V (8)5-15R

SKU: IPS-800
Weight: 9.00
Price: $695.00 (USD)

Quantity: 1   🛒 Add to Cart

✉ E-mail this product to a friend

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6. Motors

SmartMotor SM3416
QUOTE

larger image

Specifications	
Peak Torque (Tp)	150 oz-in; 1.06 N-m
Continuous Torque (Tc)	125 oz-in; 0.88 N-m
No Load Speed	2600 RPM
Nominal Power	0.24 HP; 0.18 kW
Voltage Constant	15.50 V/kRPM
Winding Resistance	0.6 Ohms
Rotor Inertia	0.0140 oz-in-s², 9.89 10^{-5} kg-m²
Encoder Resolution	4000 ppr (post-quad)
Weight	5.0 lbs; 2.27 kg
Available	Yes

Replace SM3410-V, cost is approx $1200.

ANAHEIM
AUTOMATION

Motion Control Made Easy!

IP65 Rated Sealed Stepper Motors

Anaheim Automation, Inc. provides a line of High-Torque Stepper Motors that are IP65 rated for harsh environments. These IP65 rated motors meet the splash proof requirements of most applications with humid or damp environments. Sealed shafts further protect the motor, which allows for longer life cycles. These motors are available in NEMA frame sizes 17 to 42, the smallest beginning with 38 ounce inches of torque, to the largest with up to 5,700 ounce inches of torque! The IP65 Sealed Stepper Motor series is an excellent choice for lab automation, biotech, and semiconductor automation equipment, just to name a few. Special shaft modifications are available, as well as cable, connector and encoder adders, making Anaheim Automation's IP65 Sealed Stepper Motor line the most comprehensive from a single source.

17L65

The 17L65 Sealed Stepper Motor series is offered in three stack versions, with torque rated from 38 to 83 ounce inches. These high-torque motors are 1.8° step angle, available in several windings, with four lead wires as standard. Customization is available.

*Please click on the series number for a complete part number.

Series #	Starting Price (USD)		Length (in)	Peak Torque (oz-in)	Shaft Diameter (in)	Weight (lbs)	Helpful Links
	1 Piece	50 Piece					
17L650	$155.00	$124.00	1.34	40	0.1968	0.4	
17L651	$188.00	$150.40	1.57	63	0.1968	0.6	
17L652	$220.00	CALL US	1.89	83	0.1968	0.7	

23Y65

The economical 23Y65 Sealed Stepper Motor series is offered in three stack versions, with torque rated from 76 to 262 ounce inches. These high-torque motors are 1.8° step angle, available in several windings, with four lead wires as standard. Customization is available.

*Please click on the series number for a complete part number.

Series #	Starting Price (USD)		Length (in)	Peak Torque (oz-in)	Shaft Diameter (in)	Weight (lbs)	Helpful Links
	1 Piece	50 Piece					
23Y651	$95.00	$64.10	2.21	175	0.25	1.55	
23Y652	$108.80	$78.40	3	262	0.25	2.21	

23L65

The 23L65 Sealed Stepper Motor series is offered in four stack versions, with torque rated from 55 to 320 ounce inches. These high-torque motors are 1.8° step angle, available in several windings, with four lead wires as standard. Customization is available.

*Please click on the series number for a complete part number.

Series #	Starting Price (USD)		Length (in)	Peak Torque (oz-in)	Shaft Diameter (in)	Weight (lbs)	Helpful Links
	1 Piece	50 Piece					
23L650	$295.00	$236.00	1.73	72	0.25	1.05	
23L651	$309.00	$247.20	2.17	130	0.25	1.5	
23L652	$345.00	$276.00	3.1	210	0.25	2.2	
23L653	$375.00	$300.00	4.02	260	0.25	2.2	

34Y65

The economical 34Y65 Sealed Stepper Motor series is offered in four stack versions, with torque rated from 487 to 1,700 ounce inches. These motors are 1.8°, equipped with a conduit box as standard. Customization is available.

*Please click on the series number for a complete part number.

Series #	Starting Price (USD)		Length (in)	Peak Torque (oz-in)	Shaft Diameter (in)	Weight (lbs)	Helpful Links
	1 Piece	50 Piece					
34Y651	$256.40	$194.50	3.15	637	0.5	5.1	
34Y652	$309.60	$230.50	4.65	1200	0.5	8.4	
34Y653	$362.00	$266.00	6.14	1700	0.625	12	

34N65

The powerful 34N65 Sealed Stepper Motor series is offered in four stack versions, with torque rated from 650 to 2,180 ounce inches. These motors are 1.8° with a conduit box as standard. Customization is available.

*Please click on the series number for a complete part number.

Series #	Starting Price (USD)		Length (in)	Peak Torque (oz-in)	Shaft Diameter (in)	Weight (lbs)	Helpful Links
	1 Piece	50 Piece					
34N651	$644.80	$483.70	4.44	635	0.5	5	
34N652	$790.00	$592.60	5.96	1195	0.5	8.4	
34N653	$1,052.80	$789.70	7.48	1710	0.625	11.9	
34N654	$1,333.00	$999.80	8.99	2180	0.625	15.1	

34K65

The 34K65 Sealed Stepper Motor series is the most powerful in the 34 frame size, and is offered in four stack versions, with torque rated from 800 to 2,725 ounce inches. These motors are 1.8° with a conduit box as standard. Customization is available.

*Please click on the series number for a complete part number.

Series #	Starting Price (USD)		Length (in)	Peak Torque (oz-in)	Shaft Diameter (in)	Weight (lbs)	Helpful Links
	1 Piece	50 Piece					

7. Analog Condition/Comparator Board

The analog signal from the Hall Effect sensors used by the mechanism requires conditioning prior to being sample in an A/D or feed into an TTL input. A custom board by the IRTF EE will be build. Estimated cost for board manufacture and parts is $600 per board.

8. Three electronic chassis, and power supplies

4/5/2010   Digi-Key - Add Part

Web ID 31145590   **Access ID** 42283   **Salesorder Number** Uncommitted   Login

Pricing is valid for this Web ID until 4/8/2010 if you place your order online

If you need to find a part number, use the search box in the upper right of the page or click the icon here.
If you know exactly what you want, fill in the quantity, part number, and optional customer reference number below and select **Add to Order**.
Quantities are not reserved until the order has been submitted. You will be reminded of backorder quantities at submit time. Available quantities may have changed due to real time inventory. To check current availability, click the "Refresh Quantities" button below.

Quantity	Part Number	Customer Reference	
			Add to Order

Refresh Quantities

Click on the **Part Number** to **MODIFY** or **DELETE** an item from your order.

Index	Quantity	Part Number	Description	Customer Reference	Backorder Quantity	Unit Price USD	Extended Price USD
1	4	377-1393-ND	CHASSIS RACKMOUNT 7" X 22"		2 Lead Time	94.20000	$376.80
2	8	377-1229-ND	HANDLE CHROME MOUNTING CENTER 4"		0	6.40000	$51.20
3	4	377-1396-ND	COVER FOR CHASSIS RACKMNT SOLID		0	33.60000	$134.40
4	4	377-1397-ND	COVER FOR CHASSIS RACKMOUNT VENT		0	35.50000	$142.00
5	4	377-1201-ND	SLIDE 3/4 EXTENSION 20" PAIR		0	35.10000	$140.40
6	21 Supplier Direct Ship NCNR	S85101RC1419S50-ND	CONN RCPT 19POS CBL MNT W/SCKT		6 Lead Time	53.23000	$1,117.83
7	21 Supplier Direct Ship NCNR	S85102R1419P5044-ND	CONN RCPT 19POS BOX MNT W/PINS		0	41.14500	$864.05
8	21 Supplier Direct Ship NCNR	M85049/27-14W-ND	E NUT SHELL SIZE 14 CADMIUM		21 Lead Time	11.90000	$249.90

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9	5	285-1779-ND	PWR SUP MEDICAL +5V/-5V 1.5A 15W		0	53.85000	$269.25
10	5	285-1761-ND	PWR SPLY MEDICAL +12V/-12V 40W		0	80.00000	$400.00
11	5	102-1485-ND	PWR SUPPLY W/PFC 200W 24V 8.3A		0	107.68000	$538.40

Subtotal	$4,284.23
Shipping	unknown
Estimated Sales Tax	unknown
Total	unknown

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9. Temperature Controllers

LakeShore

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Model 325 Cryogenic Temperature Controller

| Product Overview | Tech Specs | Ordering Information | Downloads |

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Lead Time: Lake Shore delivers most products from stock and they are shipped within one week (5 business days). f products are not in stock, the typical lead times are as follows. Large quantity orders can effect lead time. Please call (614-891-2244) or e-mail for the most up to date lead time.

Sales Tax: Lake Shore currently collects sales tax in the following states: AZ, CA, FL, IN, OH, SC WA

Terms & Conditions
Warranty Statement
Shipping Charges

Part number	Description (Input configuration cannot be changed in the field.)	Price	Lead Time	Add To Cart
Standard Temperature Controllers, all features included				
325	Two diode/RTD inputs	$2,329	2 weeks	🛒
325-T1	One diode/RTD, one thermocouple input	$2,443	2 weeks	🛒
325-T2	Two thermocouple inputs	$2,546	2 weeks	🛒

Power Options:

Select one; the instrument will be configured for selected power and fuses :

VAC-100	Instrument configured for 100 VAC with U.S. power cord	Select	
VAC-120	Instrument configured for 120 VAC with U.S. power cord	Select	
VAC-120-ALL	Instrument configured for 120 VAC with U.S. power cord and universal Euro line cord and fuses for 220/240 Setting. (extra charge for this option)	Select	
VAC-220	Instrument configured for 220 VAC with universal Euro line cord	Select	
VAC-240	Instrument configured for 240 VAC with universal Euro line cord	Select	

Other country line cords available, consult Lake Shore

Accessories included

106-009	Heater output connector (dual banana jack)
G-106-233	Sensor input mating connector (6-pin DIN plug); 2 included
G-106-735	Terminal block, 2-pin

LakeShore

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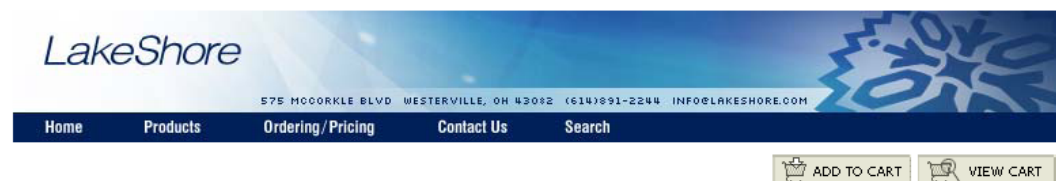
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Model 218 Temperature Monitor

| Product Overview | Tech Specs | Ordering Information | Downloads |

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<u>Lead Time</u>: Lake Shore delivers most products from stock and they are shipped within one week (5 business days). f products are not in stock, the typical lead times are as follows. Large quantity orders can effect lead time. Please call (614-891-2244) or e-mail for the most up to date lead time.

<u>Sales Tax:</u> Lake Shore currently collects sales tax in the following states: AZ, CA, FL, IN, OH, SC WA

| Terms & Conditions |
| Warranty Statement |
| Shipping Charges |

Model No	Description (Input configuration cannot be changed in the field.)	Price	Lead Time	Add To Cart
218S	Temperature Monitor, eight channel with IEEE-488, analog output and relays	$1,826	4 Week	🛒
218E	Temperature Monitor, eight channel	$1,419	4 Week	🛒

Power Options

Select one; the instrument will be configured for selected power and fuses :

VAC-100	Instrument configured for 100 VAC with U.S. power cord		Select
VAC-120	Instrument configured for 120 VAC with U.S. power cord		Select
VAC-220	Instrument configured for 220 VAC with universal Euro line cord		Select
VAC-240	Instrument configured for 240 VAC with universal Euro line cord		Select
VAC-120-ALL	Instrument configured for 120 VAC with U.S. power cord and universal Euro line cord and fuses for 220/240 Setting. (extra charge for this option)		Select

Accessories Included

MAN-218	218S/218E temperature monitor manual
G-106-253	Sensor input mating connector (DB-25) (quantity 2)
G-106-264	Shell for sensor input mating connector (quantity 2)
106-772	Terminal block mating connector, 14 pin connector, 218S only (quantity 2)

Options