



## JDI-100/200 MEMS Inclinometer Series

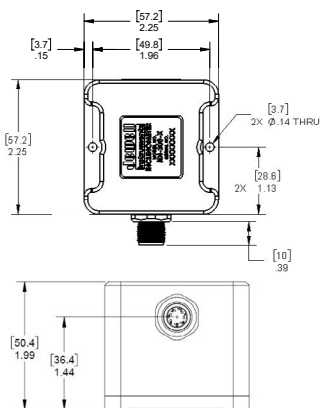
The JDI-100/200 series is a digitally temperature compensated inclinometer available in single and dual axis configurations. The robust and rugged design is great for industrial use, yet includes the low-cost MEMS technology. These units are available with DB9, Pigtail, Deutsch, Double Deutsch, 6-Pin Circular (C06), or M12 connectors for maximum versatility.

### FEATURES:

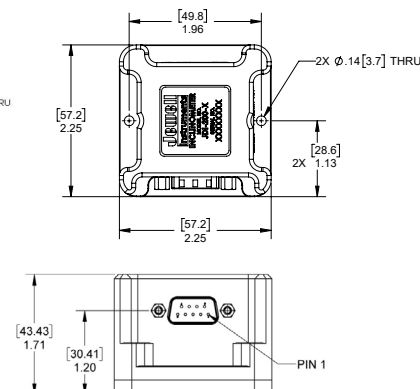
- Ranges:  $\pm 1^\circ$ ,  $\pm 3^\circ$ ,  $\pm 14.5^\circ$ ,  $\pm 30^\circ$ , and  $\pm 60^\circ$
- Digital Interface Options: ASCII (RS-485/RS-232) and Modbus (RS-485)
- Robust & Rugged Enclosure
- Single or Dual Axis Options
- Low-cost MEMS Technology
- RoHS and REACH Compliant
- Single DC Power Input - Galvanically Isolated
- Integrated Temperature Sensor
- IP67 Seal (when mated to IP67 connector)



M12, C06, Pigtail, & Deutsch Versions



DB9 Version Only



Dimensions: in [mm]



### APPLICATIONS:

- Industrial Automation & Control
- Construction & Agricultural Equipment
- Solar Tracking
- Mobile Cranes
- Platform Leveling/Positioning
- Mobile Radar Equipment
- Bridge Monitoring

# PERFORMANCE SPECIFICATIONS: JDI-100/200

## PERFORMANCE STATIC/DYNAMIC

MEASUREMENT RANGE <sup>1</sup> (°)	±1	±3	±14.5	±30	±60
RELATIVE ACCURACY <sup>2</sup> (°, typ)	0.004				
DIGITAL RESOLUTION (°, max)	0.0001				
REPEATABILITY (°)	0.01				
BIAS OVER TEMPERATURE (ppm/°C, typ)	80				
TRANSVERSE AXIS MISALIGNMENT (°, max)	0.25				
BANDWIDTH (Hz nom) (-3 dB)	(Sample Rate) / 4				
NON-LINEARITY (% FS), (-20 °C to 50 °C)	0.60	0.20	0.05	0.03	0.02
ACCURACY - TEMPERATURE SENSOR (°C, max)	±2				
WARM UP TIME (seconds typ)	0.5				

## ELECTRICAL/PROTOCOL

NUMBER OF AXES	1 or 2
INPUT VOLTAGE RANGE (VDC)	5 min, 9 to 36 typ, 38 max, reverse wiring protected
POWER - RS485 TERMINATION ENABLED (mW, max)	800.0
POWER - RS485 TERMINATION DISABLED (mW, max)	600.0
GALVANIC ISOLATION - POWER INPUTS (rms)	2000
GALVANIC ISOLATION - RS-485/RS-232 (rms)	5000
PROTOCOL	Half Duplex, Proprietary ASCII, & MODBUS-RTU
BAUD <sup>3</sup> (bps)	2400, 4800, 9600, <b>19200</b> , 38400, 57600, 115200, 230400, 460800, 500000 (max)
COMMUNICATION SETTINGS <sup>3</sup>	8 bits, 1 stop bit, <b>even</b>   odd
DATA SAMPLE RATE <sup>3</sup> (Hz)	<b>3.9</b> , 7.8, 15.6, 31.2, 62.5, 125
NODE ID <sup>3</sup>	<b>0+last 2 digits of serial number</b>
FILTERING	User selectable
BUS TERMINATION- INTERNAL <sup>3</sup> (120Ω)	On / <b>Off</b>

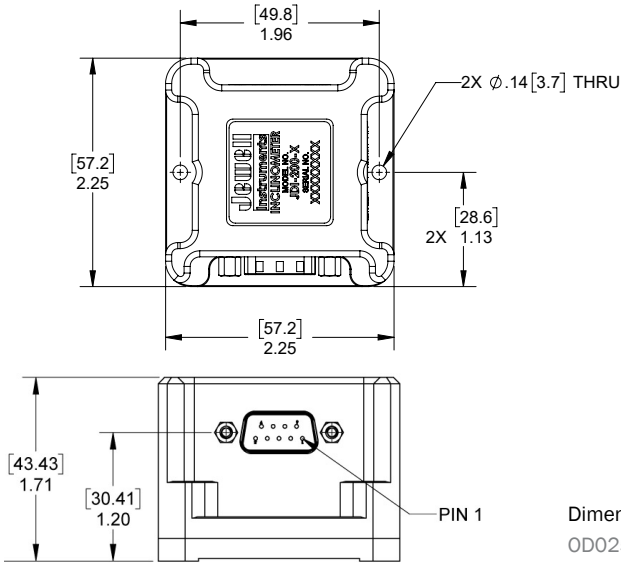
## ENVIRONMENTAL/MECHANICAL

OPERATING TEMPERATURE RANGE	-40° to +85 °C	VIBRATION	20 grms 5Hz to 2KHz
STORAGE TEMPERATURE RANGE	-55° to +105 °C	WEIGHT OZ (G)	up to 10.4 (294.8)
SHOCK	18 g, 0.011 sec, 1/2 sine	SEAL	IP67 (when mated to IP67 connector)

### NOTES:

1. Custom ranges available by request
2. Observed using noise reduction methods
3. User selectable, default is underlined
4. NIST Certification Range up to ±45°, Calibrated Temperature Range of -30 °C to +60 °C.
5. Specifications subject to change without notice on account of continued product development.

# DB9 CONNECTOR



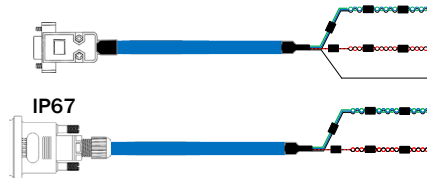
## DB9 PIN OUT

	RS-485	RS-232
1	DATA-	N/C
2	DATA+	RXD
3	N/C	TXD
4	N/C	N/C
5	GND	GND
6	N/C	N/C
7	N/C	N/C
8	PWR-	PWR-
9	PWR+	PWR+

Dimensions: in [mm]  
OD02550385

# ACCESSORIES

## DB9 to LEADS



### LEADS

GRN	DATA-
BLUE	DATA+
WHT	GND
BLK	PWR-
RED	PWR+

		PART #	IP67 PART #
RS-485	3m	95055-03	95066-03
	5m	95055-05	95066-05
	15m	95055-15	95066-15
RS-232	3m	95056-03	95076-03
	5m	95056-05	95076-05
	15m*	95056-15	95076-15

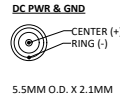
\*15m maximum for RS-232

## DB9 to DB9 & BARREL



### PIN OUT

1	DATA-
2	DATA+
5	GROUND



110-240Vac to 12Vdc Transformer sold separately.  
Part #: 00254-02

		PART #
RS-485	3m	95051-03
	5m	95051-05
	15m	95051-15
RS-232	3m	95052-03
	5m	95052-05
	15m*	95052-15

\*15m maximum for RS-232

## DB9 to USB

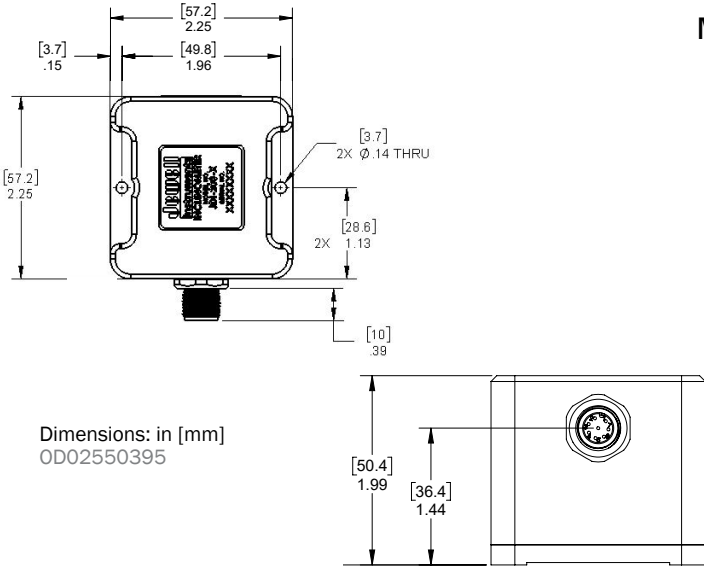


		PART #
RS-485	1.8m	95053-01
	5m*	95053-05
RS-232	1.8m	95054-01
	5m*	95054-05

\*5m maximum



# M12 CONNECTOR



## M12 SENSOR PIN OUT

RS-485 RS-232

	RS-485	RS-232
1	N/C	TXD
2	PWR+	PWR+
3	PWR-	PWR-
4	DATA-	N/C
5	GND	GND
6	DATA+	N/C
7	N/C	RXD
8	GND	GND

# ACCESSORIES

## M12 to LEADS



LEADS	RS-485	RS-232
<b>ORG</b>	DATA-	N/C
<b>WHT/ORG</b>	DATA+	N/C
<b>WHT/GRN</b>	GND	GND
<b>BRN</b>	PWR-	PWR-
<b>WHT/BRN</b>	PWR+	PWR+
<b>WHT/BLUE</b>	N/C	TXD
<b>BLUE</b>	N/C	RXD

		PART #
<b>RS-485</b>	3m	95062-03
	5m	95062-05
	15m	95062-15
<b>RS-232</b>	3m	95063-03
	5m	95063-05
	15m*	95063-15

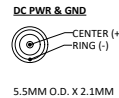
\*15m maximum for RS-232

## M12 to DB9 & BARREL



### PIN OUT

1	DATA-
2	DATA+
5	GROUND



110-240Vac to 12Vdc Transformer sold separately.  
Part #: 00254-02

		PART #
<b>RS-485</b>	3m	95057-03
	5m	95057-05
	15m	95057-15
<b>RS-232</b>	3m	95058-03
	5m	95058-05
	15m*	95058-15

\*15m maximum for RS-232

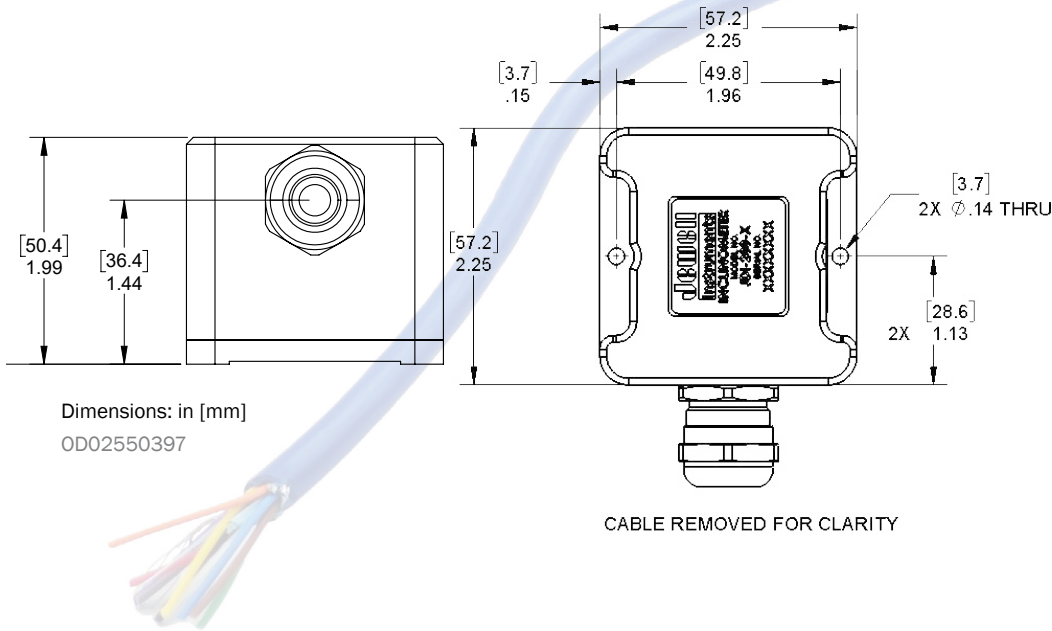
## M12 to USB



		PART #
<b>RS-485</b>	1.8m	95060-01
	5m	95060-05
<b>RS-232</b>	1.8m	95061-01
	5m	95061-05

\*5m maximum

# FLYING LEADS ACCESSORIES



## FLYING LEAD SENSOR PIN OUT

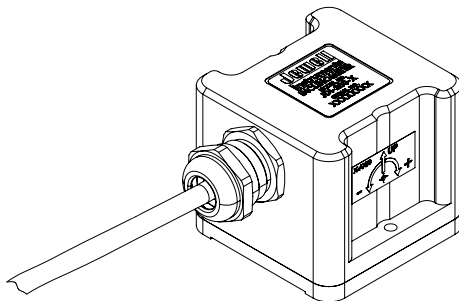
RS-485 RS-232

RED	PWR+	PWR+
BLK	PWR-	PWR-
GRN	DATA+	RXD
BLUE	DATA-	TXD
WHT	GND	GND

# ACCESSORIES

## FLYING LEADS

This model must be ordered with the exact cable length needed. See table for options.



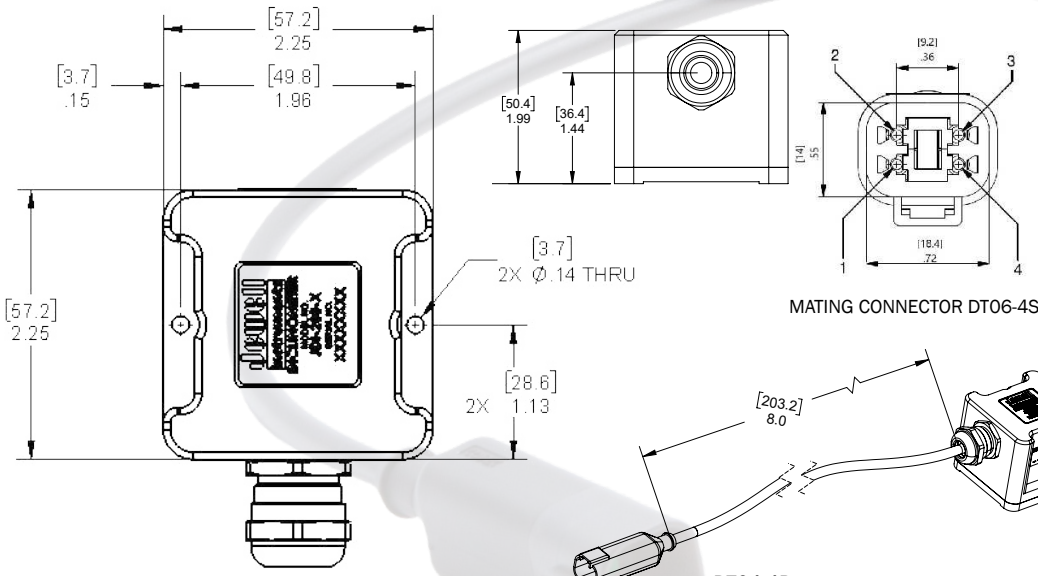
RS-485	3m*
	5m
	15m
RS-232	3m*
	5m
	15m**

\*3m standard

\*\*15m maximum for RS-232



# DEUTSCH CONNECTOR



## DEUTSCH SENSOR PIN OUT RS-485

1	PWR+
2	PWR-
3	DATA+
4	DATA-

DEUTSCH CONN ASSY. REMOVED FOR CLARITY

Dimensions: in [mm]  
OD02550391

# ACCESSORIES

## RS-485 FEMALE DEUTSCH to FLYING LEADS



### LEADS

GREEN	DATA-
BLUE	DATA+
WHITE	GROUND
BLACK	PWR-
RED	PWR+

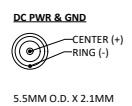
LENGTH	PART #
3m	95069-03
5m	95069-05
15m	95069-15

## RS-485 FEMALE DEUTSCH to DB9 & BARREL



### PIN OUT

1	DATA-
2	DATA+
5	GND



110-240Vac to 12Vdc Transformer sold separately.  
Part #: 00254-02

LENGTH	PART #
3m	95068-03
5m	95068-05
15m	95068-15

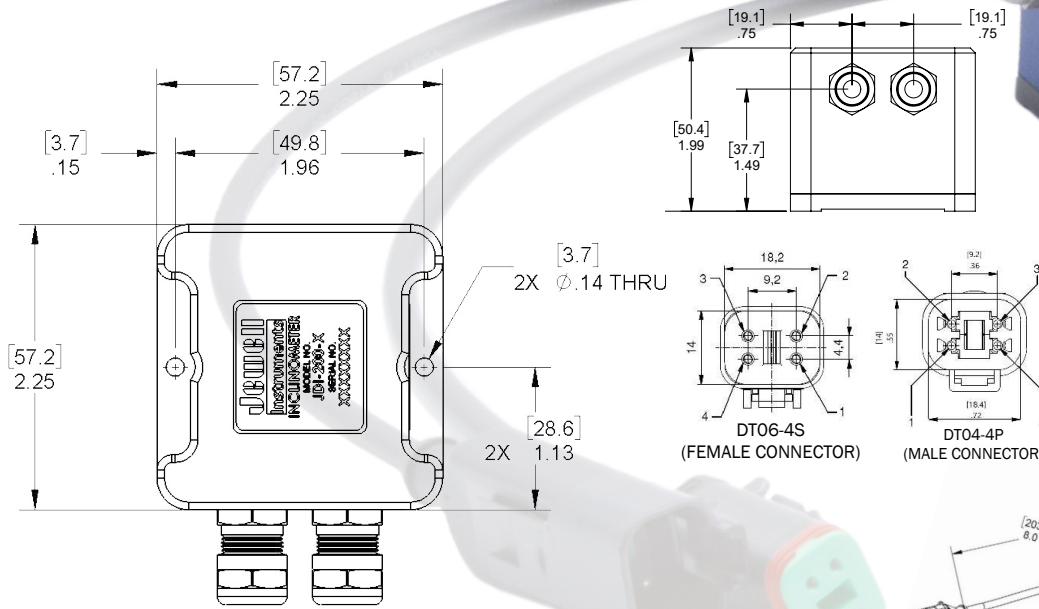
## RS-485 FEMALE DEUTSCH to USB



LENGTH	PART #
1.8m	95067-01
5m*	95067-05

\*5m maximum

# DOUBLE DEUTSCH CONNECTOR



## DEUTSCH SENSOR PIN OUT RS-485

1	PWR+
2	PWR-
3	DATA+
4	DATA-

Dimensions: in [mm]  
OD02550393

## ACCESSORIES

### RS-485 FEMALE DEUTSCH to FLYING LEADS



#### LEADS

GREEN	DATA-
BLUE	DATA+
WHITE	GROUND
BLACK	PWR-
RED	PWR+

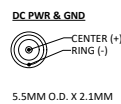
LENGTH	PART #
3m	95069-03
5m	95069-05
15m	95069-15

### RS-485 FEMALE DEUTSCH to DB9 & BARREL



#### PIN OUT

1	DATA-
2	DATA+
5	GROUND



110-240Vac to 12Vdc Transformer sold separately.  
Part #: 00254-02

LENGTH	PART #
3m	95068-03
5m	95068-05
15m	95068-15

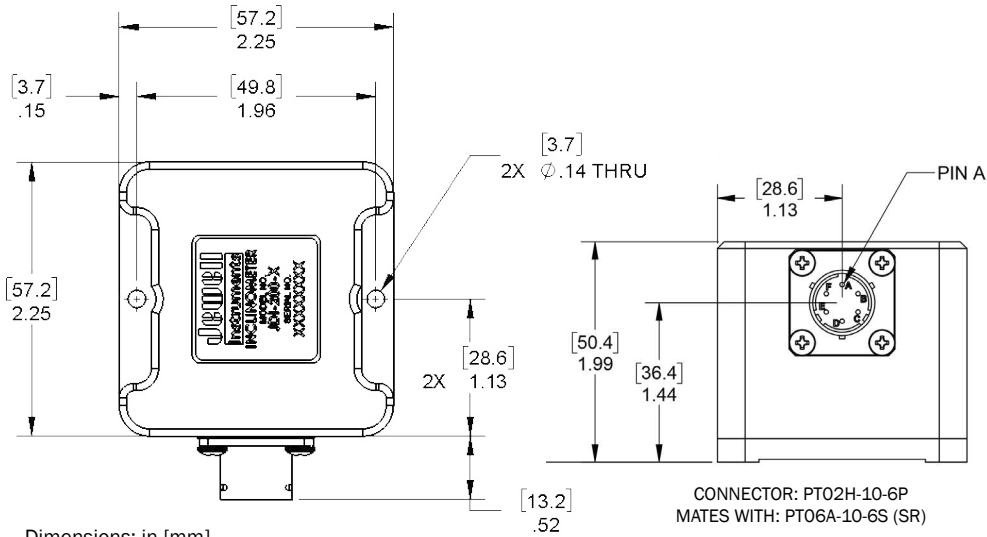
### RS-485 FEMALE DEUTSCH to USB



LENGTH	PART #
1.8m	95067-01
5m*	95067-05

\*5m maximum

# CIRCULAR (C06) CONNECTOR



## C06 SENSOR PIN OUT

	RS-485	RS-232
<b>A</b>	PWR+	PWR+
<b>B</b>	PWR-	PWR-
<b>C</b>	N/C	N/C
<b>D</b>	DATA+	RXD
<b>E</b>	DATA-	TXD
<b>F</b>	GND	GND

# ACCESSORIES

## C06 to FLYING LEADS



### LEADS

	RS-485	RS-232
<b>RED</b>	PWR+	PWR+
<b>BLK</b>	PWR-	PWR-
<b>GRN</b>	DATA+	RXD
<b>BLUE</b>	DATA-	TXD
<b>WHT</b>	GND	GND

		PART #
<b>RS-485</b>	3m	95074-03
	5m	95074-05
	15m	95074-15
<b>RS-232</b>	3m	95075-03
	5m	95075-05
	15m*	95075-15

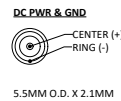
\*15m maximum for RS-232

## C06 to DB9 & BARREL



### PIN OUT

<b>1</b>	DATA-
<b>2</b>	DATA+
<b>5</b>	GROUND

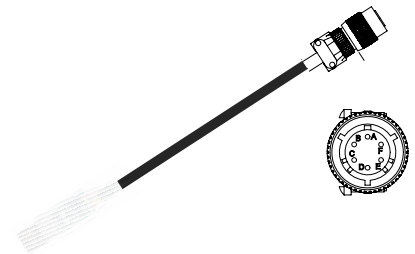


110-240Vac to 12Vdc Transformer sold separately.  
Part #: 00254-02

		PART #
<b>RS-485</b>	3m	95070-03
	5m	95070-05
	15m	95070-15
<b>RS-232</b>	3m	95071-03
	5m	95071-05
	15m*	95071-15

\*15m maximum for RS-232

## C06 to USB



		PART #
<b>RS-485</b>	1.8m	95072-01
	5m	95072-05
<b>RS-232</b>	1.8m	95073-01
	5m	95073-05

\*5m maximum



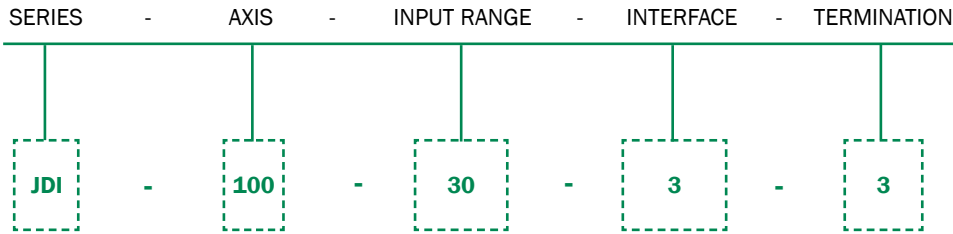


# ORDERING INFORMATION

## HOW TO ORDER

Model Numbers are comprised of the series, the axes, the input range, interface, and termination options.

**EXAMPLE 1:** JDI Series, Single Axis,  $\pm 30^\circ$  Input, MBRTU RS-485, and an 4-Pin Double Deutsch termination



### INTERFACE OPTIONS

1	RS485	ASCII (RS-485)
2	RS232	ASCII (RS-232)
3	MB485	MBRTU (RS-485)

### TERMINATION OPTIONS

1	DB9	DB9
2	4PD	4-Pin Deutsch, Male
3	4DD	4-pin Deutsch, M/F
4	M12	8-pin M12, Male
5	FL5	Flying Leads
6	C06	6-Pin Circular Connector

SEE PREVIOUS PAGES FOR CABLE OPTIONS

**EXAMPLE 2:** JDI Series, Dual Axis,  $\pm 1^\circ$  Input, ASCII RS-232 Interface, and an 8-pin M12 Male termination

