



### Features & Benefits

### Applications

### Performance Specs

	755 Series	756 Series	84053	59577	84064-02	59579-02
Angular Range <sup>1</sup>	±0.5°	±10°	±6°		±80°	
Resolution	0.000057°	0.000057°	<0.0001°		0.001°	
Repeatability	0.000057°	0.0001°	0.0002°		0.02°	
Non-Linearity, Half span (%) <sup>2</sup>	1	0.5	2		1	
Time Constant (sec)	0.5	0.4	0.15		0.15	
Ks Temp Coefficient (%/°C) <sup>3</sup>	0.04	0.05	0.04		-	
Kz Temp Coefficient (bias/°C) <sup>4</sup>	±0.00017	±0.00057	±0.0002		-	

### Electrical

Available Channels	X-tilt, Y-tilt	-	-
Signal Conditioners	All	84828, 84800 & Tulip	84828, 84800 & Tulip
Power Requirements	3-5V AC, 400 Hz to 10 kHz	3-5V AC, 400 Hz to 10 kHz	3-5V AC, 400 Hz to 10 kHz

### Environmental

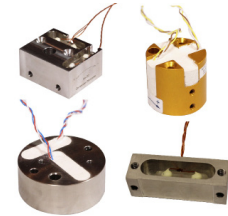
Operating Temperature Range	-25 to +80°C	-50° to +125°C	-50° to +125°C
Storage Temperature Range	-25 to +80°C	-75° to +150°C	-75° to +150°C

### Mechanical

Weight	See datasheet	84053: 24g; 595777: 9.5g	84064: 24g 59577: 5g
Dimensions in cm (LxWxH)	See datasheet	With bracket: 4.42 x 2.36 x 1.83 Without: 3.81 x 0.57 x 1.6	With bracket: 4.42 x 2.26 x 1.7 Without: 1.78 x 0.46 x 1.5
Materials	304 SS or Anodized Al	Ceramic sensor, gold anodized Al, Teflon lead wire	Ceramic sensor, gold anodized Al, Teflon lead wire

## Tilt Sensors

### 755-Series & 756-Series High-Gain & Mid-Range Sensors



- Single or dual-axis
- Vertical or horizontal mounting
- Same sensors used in the 500 & 700-Series tiltmeters
- Vacuum-compatible versions available

- X-ray mirrorstlescope mounts
- Wind tunnel models
- Medical devices

### 84053 Mid-Range Ceramic Sensor Assembly

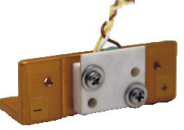


- Fast warm-up, high sensitivity, high repeatability & excellent long-term stability
- Anodized aluminum bracket to strengthen the assembly & simplify installation & repositioning

- Leveling and positioning for test and measurement

### 59577 Mid-Range Ceramic Sensor (Without Mounting Bracket)

### 84064-02 Wide-Angle Ceramic Sensor Assembly



- Fast warm-up & excellent thermal, mechanical & long-term stability
- Anodized aluminum bracket for strength & easy installation

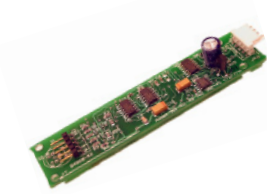
- Leveling and positioning for test and measurement

### 59579-02 Wide-Angle Ceramic Sensor (Without Mounting Bracket)



## Signal Conditioners

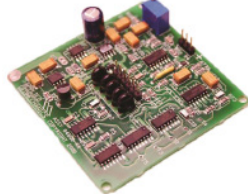
### 84828 Basic Signal Conditioner



- Slim, low-profile design for small spaces
- Single-ended voltage output
- Circuit is reverse polarity protected

- OEM

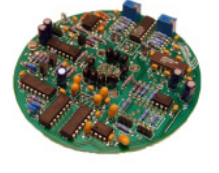
### 84800 Single-Channel Signal Conditioning Card



- Wide input voltage range, reverse polarity protection & transient surge protection
- 2-pole Butterworth low-pass filter can be tuned to special requirements
- Drives analog voltage output signals over cable lengths longer than 300m

- OEM

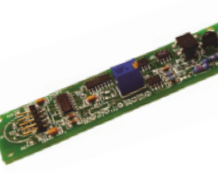
### 83162 Dual-Channel Signal Conditioning Card



- Amplifier for an LM35 temperature sensor
- Will drive cable lengths over 1000m
- Single-level transient surge protection included

- OEM

### Tulip 4-20mA Signal Conditioning Card



- Small size, easy setup & fast response time
- Current loop powered for long cable length
- Operate with normal or reverse polarity

- OEM
- Control Systems

### IRIS Digital Signal Conditioning Card



- 16-bit A/D converter
- 540K of onboard FLASH memory
- Real-time clock
- Measures temperature
- RS232 or RS422 output

- Digital data streams or onboard recording of tilt measurement

### 781 Signal Conditioning Unit (Bench Top)



- Rugged aluminum case
- Drives tilt & temperature signals over 1000m cable lengths
- Switches for control gain and low-pass filter settings, and power on-off

- Laboratory & factory testing/measurement

### Features & Benefits

### Applications

### Performance Specs

	84828	84800	83162	Tulip	IRIS	781
Input Channels	1 Tilt Channel (X or Y)	1 Tilt Channel 1 LM35 Temp Sensor	X & Y Tilt 1 LM35 Temp Sensor	1 Tilt Channel: X or Y	2 Tilt Channels (X & Y)	2 tilt channels (X & Y) 1 LM35 Temp. Sensor
Output Signal	±4 VDC	±5 VDC      ±10 VDC	±8 VDC      ±16 VDC	4-20mA, 2-wire current loop	RS232, RS422 & ASCII	±8 VDC      ±16VDC
Gain Settings	Fixed	Fixed	Two switchable, 10:1	Fixed	-	Two switchable, 10:1
Output Filters	0.15 sec	Roll-off: 12 dB/octave	Filter on: 7.5 sec, Off: 0.05 Roll-off = 6 dB/octave	0.15 sec	-	Filter on: 7.5 sec, Off: 0.05 Roll-off = 6 dB/octave
Temperature Output	0.1°C/mV, 0° = 0mV      0°C = 2.5 V	0.1°C/mV	0.1°C/mV (single-ended)	2500-Ohm thermistor on-board (type-B curve)	On-board temperature sensor	0.1°C/mV (single-ended)

### Electrical Environmental

Operating Temperature Range	-25 to +70°C	-25 to +70°C	-25 to +70°C	-40 to +85°C	-40 to +85°C	-25 to +70°C
Storage Temperature Range	-25 to +70°C	-30°C to +100°C	-30°C to +100°C	-40 to +85°C	-40 to +85°C	-30°C to +100°C
Power Requirements	+8 to +24 VDC      +10.5 to +26.5 VDC	8 to 18 VDC	±11 to ±15 VDC	<29 VDC	7-28 VDC	±11 to ±15 VDC

### Mechanical

Weight	0.5 oz.	0.75 oz.	1.06 oz.	0.5 oz.	1.1 oz.	0.9 kg.
Dimensions in CM (LxWxH)	10.3 x 2.3 x 1.3	6.3 x 6.3 x 1.6	9.8 x 2.8	10.3 x 2.3 x 1.3	6.7 x 6.7 x 2.5	8.8 x 1.2 x 2.1
Materials	Fiberglass PCB surface mount components	Fiberglass PCB surface mount components	Fiberglass PCB thru-holed soldered components	Fiberglass PCB Surface mount components	Fiberglass PCB	Painted Al
Tilt Sensors	755 & 756-Series, 84053 & 84064-02	755 & 756-Series, 84053 & 84064-02	755 & 756-Series	755 & 756-Series, 84053 & 84064-02	755 & 756-Series	755 & 756-Series

NOTE: Specifications are subject to change without notice. For complete specifications, sensor capabilities and ordering information, please visit [www.jewellinstruments.com](http://www.jewellinstruments.com) 1 - Custom Ranges also available on request 2 - Non-linearity represents maximum deviation from linear regression line, typical; <0.05% linearity or better achievable using a 5th order polynomial 3 - Ks = % change in scale factor per °C 4 - Kz = bias shift per °C.