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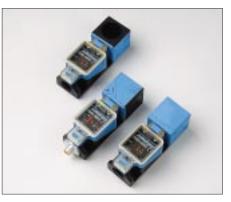
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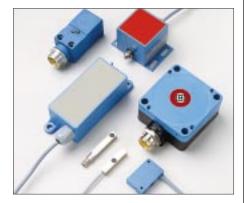
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All specifications subject to change without notice or obligation





#### **GENERAL INFORMATION**

Altech accessories are available as optional equipment to assist in the use of sensor products.

Some sensor products require specific accessory units in order to perform satisfactory. Please consult the product specification to determine which accessories are essential.

The accessories include mounting brackets, cable assemblies, switching amplifier units, and motion detector systems.

#### **MOUNTING BRACKETS**

Several fixtures are available that provide the ability to mount cylindrical and limit style sensors.

#### **CABLE ASSEMBLIES**

Altech offers one of the largest Quick Disconnect selection of sensors in the industry and matching cable assemblies. Standard Sensors come with 2 meter fixed PVC cables, but to improve maintenance and mean time to repair (MTTR) quick disconnect sensors with matching cable assemblies are desirable.

For DC Sensors Altech offers a mini- style 4-pin cable assembly, a micro style 3- and 4-pin cable assembly, and a pico style 3-pin cable assembly. Most are available in straight or 90° molded cable connection, and the micro and pico styles are also available with 2 LED's.

For AC Sensors Altech offers a mini- style 3-pin cable assembly, a micro style 3-pin and 4-pin cable assembly.

#### SWITCHING/AMPLIFIER UNITS

Altech offers a wide variety of products used in conjunction with Ring Sensors, Analog Sensors, Namur Sensors, testers and power supply modules for all sensor products.

#### MOTION DETECTOR SYSTEMS

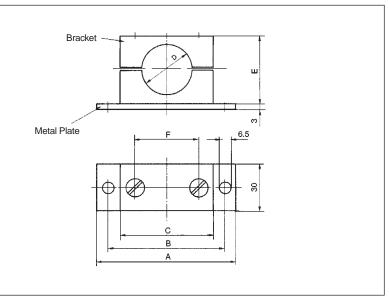
Motion detectors accept impulses from proximity sensors when a repetitious event is occurring. These impulses are measured compared to a standard. The motion detector will "Time Out" between impulses and provide an output for over or under the set speed.

Altech offers completely contained motion detector systems, including built-in proximity sensors or as separate components.

### Mounting Brackets 9512-6100/9512-6200 9512-6400/9512-6600



Non-metallic mounting brackets are used for 8mm, (.31 in.), 12mm (.47 in.), 18mm (.71 in.), and 30mm (1.18mm) cylindrical sensors.



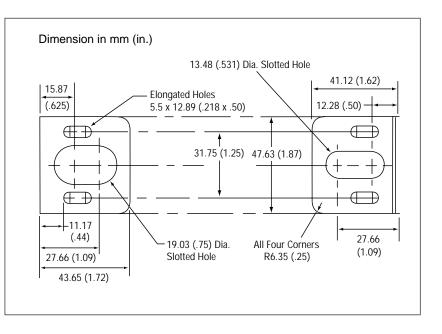
#### Dimensions in mm (in.)

D=SENSOR Ø	А	В	С	E	F	Model
8 (0.31)	64 (2.52)	50 (2.0)	37 (1.46)	27 (1.06)	20 (0.79)	9512-6100
12 (0.47in.)	64 (2.52)	50 (2.0)	37 (1.46)	27 (1.06)	20 (0.79)	9512-6200
18 (0.71in.)	70 (2.76)	56 (2.20)	42 (1.65)	33 (1.3)	26 (1.02)	9512-6400
30 (1.18in.)	87 (3.43)	73 (2.87)	58 (2.28)	42 (1.65)	40 (1.57)	9512-6600

#### Model No. MB 1

A Metallic Mounting Bracket is available for 12mm (.47 in.) and 18mm (.071 in.) cylindrical sensors. Bracket is finished in clear anodized Aluminum.

This bracket allows for adjustment forward, backward, and sensor height.



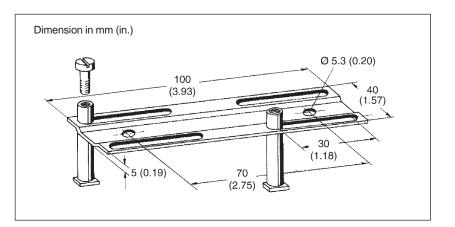


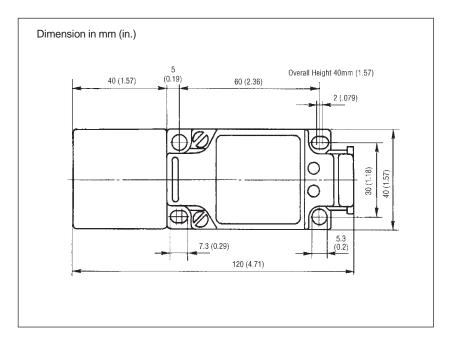
# 9512-8200 Mounting Plate for Limit Style Sensors

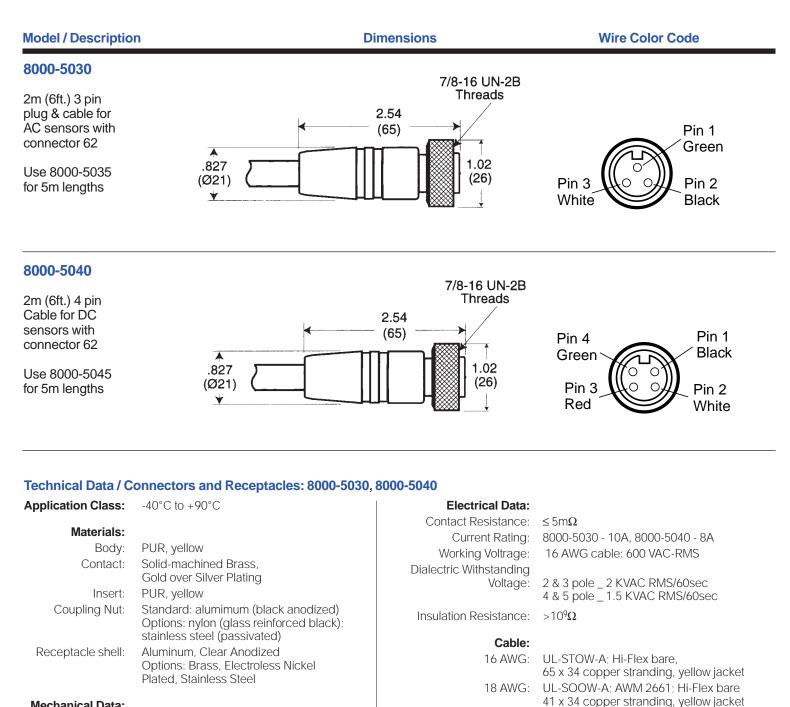
Mounting dimensions: According to DIN 50 027/037 Material: VA 1.4301.

This mouning plate is used if the sensing device has to be adjusted after the installation.

This mounting plate is used only for Limit Style Sensors.



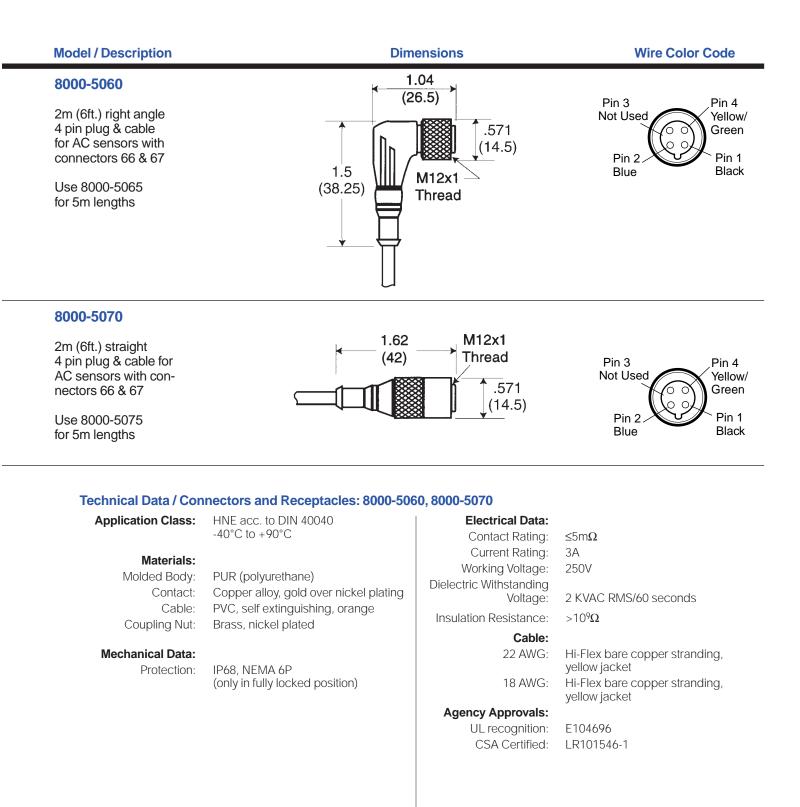


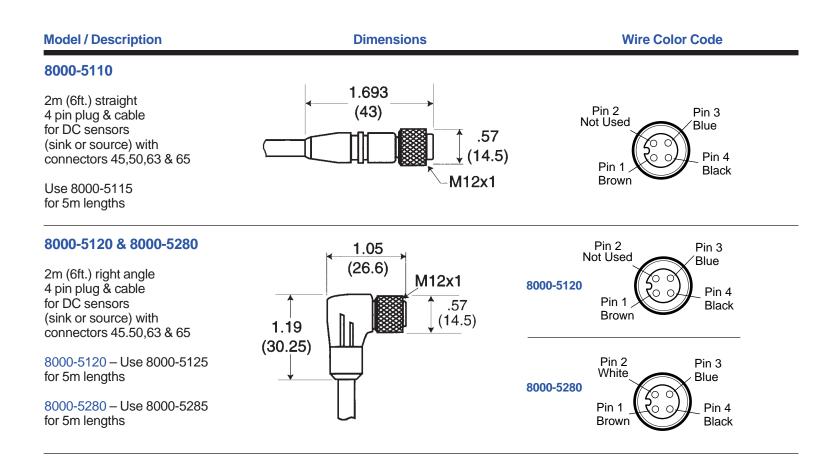


#### **Mechanical Data:**

Protection:	IP68, NEMA 6P (only in fully locked position)	Agency Approvals:	
Insertion Force: Withdrawal Force:	≤ 3.0N .67 lbs.	UL Recognition: CSA Certified:	
	IEC 68-2-27 IEC 68-2-6		







#### Technical Data / Connectors and Receptacles: 8000-5110, 8000-5120, 8000-5280

Application Class:	HNE acc. to DIN 40040 -40°C to +90°C	
Materials:		
Molded Body:	PUR (Polyurethane)	

Contact:

Cable Coupling Nut:

#### Mechanical Data:

Protection: IP68, NEMA 6P (only in fully locked position)

#### **Electrical Data:**

Contact Resistance:	$\leq$ 5m $\Omega$
Current Rating:	3A
Working Voltage:	250V
Dielectric Withstanding	
Voltage:	2 KVAC RMS/
Insulation Resistance:	$>10^{9}\Omega$

#### Cable:

22 AWG:

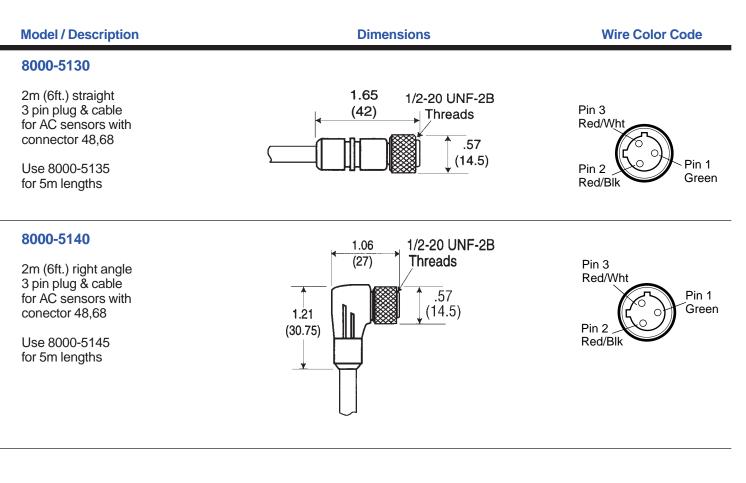
AWM 2661; Hi-Flex bare, 26 x 36 or 22 x 36 copper stranding, yellow jacket

Agency Approvals:

UL Recognition: E104696 CSA Certified: LR101546-1

### Copper alloy, gold over 5/60 secinds nickel plating PVC, self extinguishing, yellow Brass, nickel plated





#### Technical Data / Connectors and Receptacles: 8000-5130, 8000-5140

Application Cla	iss:
-----------------	------

#### Materials:

Molded Body: Contact:

plating Receptacle: Brass, nickel plated Cable: Coupling Nut: Brass, nickel plated

#### **Mechanical Data:**

Protection:

HNE acc. to DIN 40040 -40°C to +90°C

PUR (Polyurethane) Copper alloy, gold over nickel PVC, self-extinguishing, yellow

IP68, NEMA 6P (only in fully locked position)

#### **Electrical Data:**

Contact Resistance:	$\leq 5\Omega$
Current Rating:	3A
Working Voltage:	250V
Dielectric Withstanding Voltage: Insulation Resistance:	2 KVAC RSM/60 seconds $>10^9\Omega$

#### Cable:

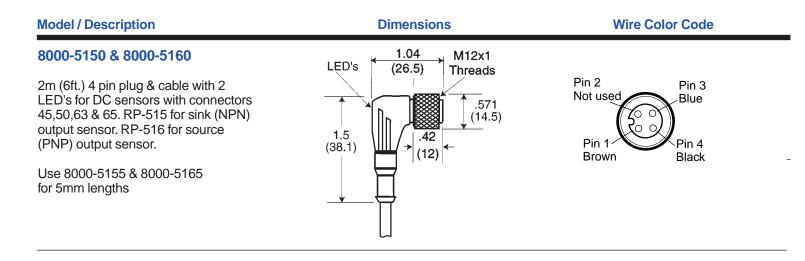
22 AWG:

AWM 2661; Hi-Flex bare, 26 x 36 copper stranding, yellow jacket

#### Agency Approvals:

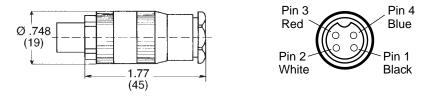
UL Recognition: CSA Certified:

E104696 LR101546-1



#### 9512-0200

2m (6ft.) straight 4 pin metal plug & cable for connector 59

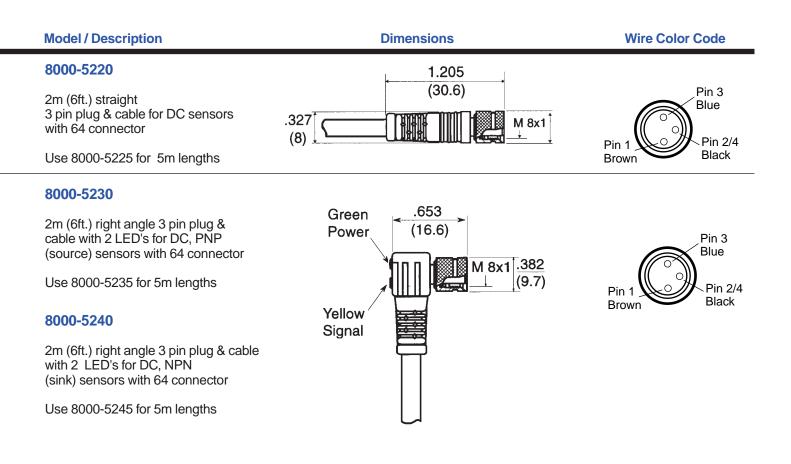


#### Technical Data / Connectors and Receptacles: 8000-5150, 8000-5160

Application Class: Materials: Molded Body: Contact: Insert: Cable: Coupling Nut:	-40°C to +90°C PUR (Polyurethane) Copper Alloy, gold over nickel plating PUR (Plugs) PVC, self-extinguishing, yellow Brass, nickel plated	Electrical Data: Contact Resistance: Current Rating: Working Voltage: Dielectric Withstanding Voltage: Insulation Resistance: Cable:	≤ 5mΩ 3A 10-30 VDC 2 KVAC RMS/60 seconds >10 <sup>9</sup> Ω .25mm <sup>2</sup>
Mechanical Data: Protection: Insertion Force (Contact): Shock: Vibration:	IP68, NEMA 6P (only in fully locked position) ≤ 2N .45 lbs. ≥ .5N .11 lbs. IEC 68-2-27 IEC 68-2-6	Agency Approvals: UL Recognition: CSA Certified:	E104696 LR101546-1

- L





#### Technical Data / Connectors and Receptacles: 8000-5220, 8000-5230, 8000-5240

Application Class:	HNE acc. to DIN 40040 -25°C to +90°C ≤75%rF
Materials:	

Molded Body:

Contact:

Receptacle: O-Ring for Receptacle: Cable: Coupling Nut: TPU, self-extinguishing (RMS only – PA 6.6, self extinguishing) Solid machined brass, gold over nickel plating Brass, nickel plated Viton PVC, self extinguishing, orange Brass, nickel plated

Mechanical Data:

Protection:

Snap-In – IP65, NEMA 4 Locking – IP 68 NEMA 6P (only in fully locked position)

#### **Electrical Data:** Contact Resistance:

Contact Resistance: Current Rating:

Working Voltage: Dielectric Withstanding Voltage: Insulation Resistance:

 ≤ 5mΩ
4A 60 VAC / RMS/75VDC (solder contacts potted with epoxy for receptacles)
250V
2 K VAC RMS/60 seconds

 $>10^{9}\Omega$ 

### 8300-0100/0500 Power and Switching Units for NPN and PNP sensors

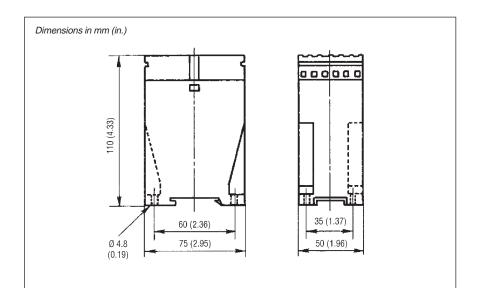
The Universal Power and Switching Unit is used to supply power for sensors and provide a relay output of the sensor status.

The unit is DIN rail mountable and can supply power for one NPN or PNP sensor.



- Short circuit protection
- Temperature range: -10 to 50°C (14 - 122°F)
- Type 8300-0100: 230V
- Type 8300-0500: 110V
- LED for Output Energized

Cat. No.	8300-0100	8300/0500
Supply Voltage:	230V AC	110V AC
Operating Frequency:	50/60Hz	50/60Hz
Temperature Range:	-10°C up to +50°C	-10°C up to +50°C
Output Voltage: (for sensor supply)	24V, stabilized and short circuit-proof	24V, stabilized and short circuit-proof
Max. Load Current:	120mA	120mA
Relay Output:	SPDT	SPDT
Max. Switching Voltage:	250V AC	250V AC
Max. Switching Current:	5A (ohmic load)	5A (ohmic load)
Max. Switching Capacity:	1100VA	1100VA





### 8100-2200 Power and Switching Units for Namur sensors

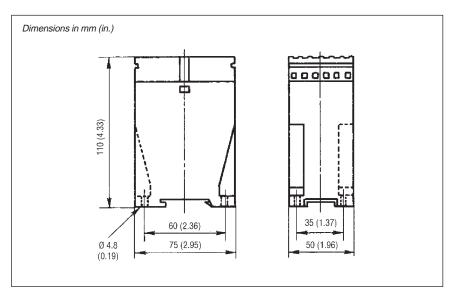
- Power supply unit
- Temperature range: -10 to 70°C (14 - 158°F)
- Amplifier
- Relay Output
- Drives one Namur sensor

Namur sensors operate with a supply voltage of 8.2V. Therefore, Namur sensors are mostly operated with switching units (with a current interface according to DIN 19234). The 8100-2200 Namur Switching Unit is equipped with such an interface. The Namur sensor has a low impedance with no metal target detected. When a metal target is detected the impedance is higher. This change in impedance causes current change which is detected by the switching unit.

The 8100-2200 switching unit opens up application areas such as standard proximity switches to Namur sensors. This is supported by the small overall dimensions of the Namur sensors.



Standard Data		
Cat. No.	8100-2200	
Supply Voltage:	220V/110V AC	
Operating Frequency:	50/60Hz	
Temperature Range:	-10°C up to +70°C (14 to 158°F)	
Output Voltage: (for sensor supply)	8.2V	
Relay Output:	SPDT	
Switching Voltage:	250V AC	
Switching Current:	5A (resistive)	
Max. Switching Capacity:	1100VA	
Max. Switching Capacity:	1100VA	



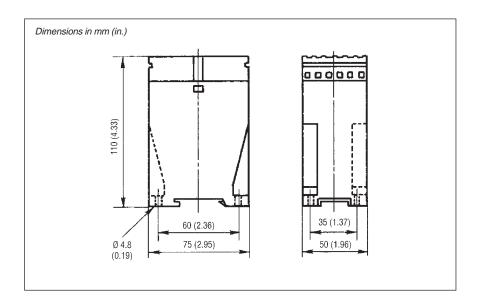
### 8102-0900/0930 Power and Switching Units for High Sensitive Ring Sensors

This switching amplifier is used with ALTECH Dynamic Ring Sensors. It can also be used as a time delay for NPN sensors since it contains a delay function. Both a transistor output and relay contact output are available.



- Adjustable Pulse Duration of the output signal
- Short circuit protection
- Transistor Output and a relay output
- LED for Output Energized
- Type 8102-0900: 220V
- Type 8100-0930: 110V
- Temperature range: -10 to 50°C (14 - 122°F)
- Adjustable Output timing delay of 10 msec to 18 seconds

Cat. No.	8102-0930	8102-0900
Supply Voltage:	220V AC	110V AC
Operating Frequency:	50/60Hz	50/60Hz
Temperature Range:	-10°C up to +50°C	-10°C up to +50°C
Output Voltage: (for sensor supply)	24V, stabilized and short circuit-proof	24V, stabilized and short circuit-proof
Transistor Output:		
Max. Load Current	80mA	80mA
Voltage Drop	0.5V	0.5V
Leakage Current	≤10µA	≤10μA
Relay Output:	SPDT	SPDT
Max. Switching Voltage:	250V AC	250V AC
Max. Switching Current:	5A (ohmic load)	5A (ohmic load)
Max. Switching Capacity:	1100VA	1100VA





8100/2130

110V AC

50/60Hz

-10°C up to +60°C (32 - 140°F)

# Accessories

### 8100-2100/2130 **Power and Switching Units** for Analog Sensors

- Provides 24V DC for Sensors
- Choice of 4 Outputs
  - Analog Voltage
- Analog Current
- 4 Bit Digital
- Relays (3) with LED indicators
- · Compatable wih all Altech Analog
- Sensors

Standard Data

Supply Voltage:

**Operating Frequency:** 

Temperature Range:

Supply Voltage for

Cat. No.

The multi-function amplifier Type 8100-2100/2130 operates in conjunction with either one of the analog sensors 9914-0800, 9414-0800, 9414-0900, 9914-1000, 9814-1133, 9814-2133, 9714-2000 or 9714-4300. It contains a power supply for the sensor voltage (24V DC) and converts the analog signal of the sensors to four different outputs.

- 1. Analog voltage output:
- 0-10V DC, max 5mA.

2. Analog current output: 0-20mA, max. load resistance  $500\Omega$ .

3. Digital Output:

four bit, open collector, npn, "active low".

4. Relay Output:

3 relays for triggering point are built in (change over contact, SPDT).

Load voltage: 220V AC

Load current: 5A (resistive) Switching capacity:1100VA

The switching point of each relay can be adjusted by a potentiometer and is indicated by individual LED's. Settings:

Three Relays with switching thresh olds can be chosen by means of three integrated potentiometers. When reaching the switching threshold, the corresponding LED will light up.

In addition to Units 8100-2100 and 8100-2130, there are two Analog Modules available to be mounted onto DIN/EN mounting rails.

- Module 8100-2400 with:
- -Analog voltage output
- -Analog current output
- -4-bit digital output
- Module 8100-2500 with: -8-bit digital output

Modules 8100-2400 and 8100-2500 are described on page 126.



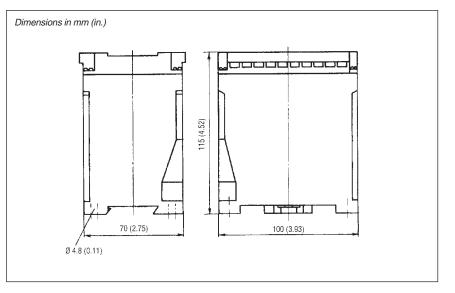
8100-2100

220V AC

50/60Hz

-10°C up to +60°C (32 - 140°F)





### 8100-2400/8100-2500 Analog Input Multi-Function Switching Unit

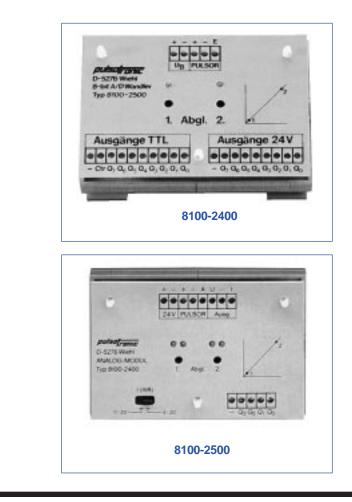
8100-2400 has choice of 3 outputs

- Analog Voltage
- Analog Current
- 4 Bit Digital
- 8100-2500 has an 8 bit digital output
- Output protected against short circuits and polarity reversal

The Multifunction Amplifiers Type 8100-2400 and 8100-2500 operate in conjunction with either one of the Analog sensors 9914-0800, 9914-1000, 9914-1133, 9814-2133, 9714-2000 or 9714-4300. It operates with customer supplied DC voltage, 18-30V DC, and converts the analog signal to three (3) different outputs for the 8100-2400. The 8100-2500 has one output, an 8 bit digital output.

The 8100-2500, 8-bit digital output divides the analog voltage into 256 individual increments which results in a resolution of  $10\mu$ m/bit (.0004 in./bit). All outputs are protected against short circuits, and the unit is protected from Polarity reversal.

Cat. No.	8100-2400	8100-2500
Supply Voltage:	18-30V DC	18-30V DC
Temperature Range:	0 to 60°C (32 to140°F)	0 to 60°C (32 to140°F)
Analog Voltage Output:	0 to 10V	-
Analog Current Output:	0 to 20mA or 4 to 20mA (jumper)	-
Digital Output 1:	4 bit open collector, PNP	8 bit open collector, PNP
Max. load current:	20mA	20mA
Voltage drop:	≤3.5V at 20mA	≤3.5V at 20mA
Max. Switching Voltage:	30V	30V
Digital Output 2:	-	8 bit TTL output
VQH	-	≤4.5V
IQH	_	≤2mAV
VQL	-	≤0.3V
IQL	_	≤6mA





### 8309-0130/8309-0230 Testers for DC and AC Sensors

- Tests an inductive sensors field in place, without removing the sensor
- Tests the output circuit
- Identifies the sensor output as either sink (NPN) or source (PNP) for DC sensors

These testers can greatly reduce downtime and maintenance costs by quickly checking the proper function of all kinds of inductive capacitive, or photelectric sensors.

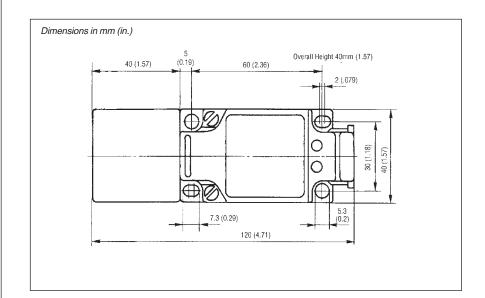


### 9863-4300/4400/4600 Motion Detector Systems

- 9 position sensor head adjustment simplifies adaptation to conditions
- Programmable NO/NC outputs
- Speed range of 100 3000 pulses per minute
- Startup delay 0.5 6.0 seconds, adjustable
- 2 LED's for Output Energized & Operating Voltage
- IP67 Protection (NEMA 1,3,4,6,12,13) Protection

These Motion Detecting Systems in Limit Style housing are used to control the rotational speed of motors, pumps, and conveyor drives. They are completely self-contained, with an integral proximity switch and timing functions to perform over and under speed detection. Typical targets are cam lobes, sprocket teeth, or small tabs.

Cat. No.	9863-4300	9863-4400	9863-4600
Mounting:	Flush	Semi-Flush	Flush
Sensing Distance:	15mm (0.59 in.)	25mm (0.98 in.)	15mm (0.59 in.)
Switching Mode:	PNP	PNP	PNP
Type Sensor:	Overspeed	Overspeed	Underspeed
Speed Range:	100 - 3000 ppm	100 - 3000 ppm	100 - 3000 ppm
Startup Delay:	0.5 -6 sec	0.5 -6 sec	0.5 -6 sec
Voltage Range:	10 - 30V DC	10 - 30V DC	10 - 30V DC
Ripple Voltage:	≤10%	≤10%	≤10%
Voltage Drop Across Sensor:	≤2.4V	≤2.4V	≤2.4V
Max. Load Current:	400mA	400mA	400mA
Supply Current:	≤34mA	≤34mA	≤34mA
Leakage Current:	≤10µA	≤10µA	≤10µA
Repeat Accuracy:	.75mm (0.3 in.)	1.25mm (.049 in.)	.75mm (.03 in.)
Temperature Range:	-25 to +70°C	-25 to +70°C	-25 to +70°C
Housing Material:	Trogamid T	Trogamid T	Trogamid T
Output, all models: If speed is If speed is		Itput is switched on. Itput is switched off.	





### 8303-0430 Motion Detector in Universal Housing

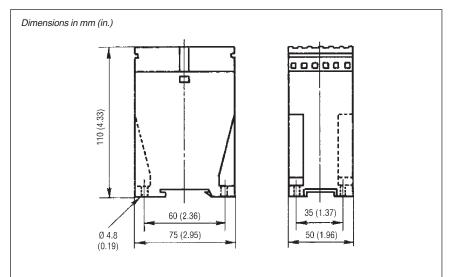
This motion detector detects the rotational speed of actuation, rotating shafts or other movements such as lifting or pushing. The impulse can be given by any PNP or NPN DC-sensor. The impulse is effected by control cams, gears, wheels or other signals. The housing can be mounted on a DIN/EN rail or on a mounting plate.



- 3 Speed Ranges
- System start-up delay adjustable

Cat. No.	8303-0430
Supply Voltage:	18V - 30V
Temperature Range	-10°C up to +60°C
5 speed range:	6 - 60 rpm
	60 -600 rpm
	600 - 6000 rpm
Start-up Delay:	0.5 - 10 sec
Hysterisis	0.5 - 10% adjustable
Relay Output:	SPDT 250V/5A
Function Switch:	Position S — Relay activated for overspeed Positiion 0 — Relay activated for underspeed
LED - Switching stat	e indication: Same time as relay contact



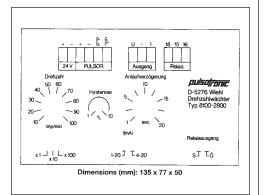


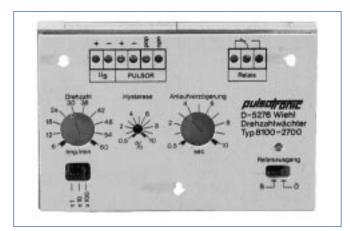
### 8100-2700/2800 Motion Detector in Universal Snap-on Housing

These units monitor/control electronically the speed of drives, rotating shafts or other motions. Both inductive and other threewire DC voltage proximity switches can be used as pulse generator input to this motion detector. Pulse generation is effected e.g. by rotating control cams, gearwheels or other signal targets. The housing can be snapped on to DIN/EN mounting rails or threaded to mounting plates.

- · System start-up delay adjustment
- 3 Speed ranges with adjustment to set speed
- DC Supply Voltage
- Relay Output

Cat. No.	8100-2700	8100-2800
Supply voltage (polarity reversal)	18V - 30V DC	18V - 30V DC
Supply Current:	≤50mA at 24V	-
Inputs:	NPN or PNP sensor signal	NPN or PNP sensor signal
Analog Output Voltage:	-	1V - 10V load resistance min $2K\Omega$
Analog Current Output:	-	adjustable 4-20mA load resistance 0-500 $\Omega$
Relay Output: Current Carrying Capacity: Normally Open/Closed	250V/5A	250V/5A
Selectable via Plug::	In NO position, the relay will be activiated, if the set speed is exceeded. In NC position, the relay will be activated if the speed falls below the set	In NO position the relay will be activated, if the set speed is exceeded
Speed Ranges:	6 - 60 rpm 60 - 600 rpm 600 - 6000 rpm	10 - 100 rpm 100 - 1000 rpm 1000 - 10000 rpm
Starting Delay Adjustable:	0.5 - 10 sec.	1 - 10 sec
Hysterisis Adjustable:	5 - 10%	1 - 10%
LED Switching State Indication:	activated same time as relay	activated same time as relay
Temperature Range:	-0°C to +60°C (32-140°F)	-0°C to +60°C (32-140°F)







# THE NEWEST ADDITION TO ALTECH'S SENSOR PRODUCTS...

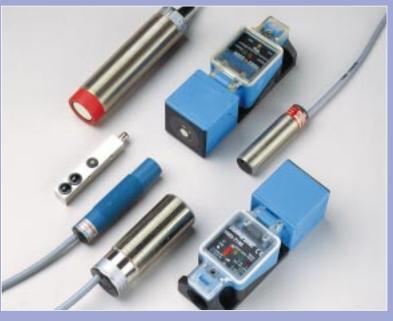
# Pulsotronic Capacitive, Photo-electric, and Ultrasonic Sensors.

ALTECH now offers a comprehensive line of Capacitive, Photo-electric. and Ultrasonic Sensors to satisfy the expanding Automation Industry.

These new Sensors are available in DC (PNP & NPN), and AC models. Housing styles are Cylindrical, Limit Style, and Block.

### Features:

 Capacitive – Detects Metals, Non-Metals, and Liquids.
Photo-electric – Available in Diffuse Reflection, Retro-Reflection, and Through Beam models.
Ultrasonic – Digital and Analog models available, using sound to detect targets and target distances.



...Contact Altech for more information

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