

# AST

MONITORING YOUR JOURNEY

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## PRODUCT CATALOG 2017

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AST  
Progrés 32, 08191 Rubí,  
Barcelona, SPAIN.

**PHONE:** +34 93 586 20 73

**EMAIL:** [customerservice@ast.es](mailto:customerservice@ast.es)



## AST ABOUT US

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Since the 1960s, AST has provided robust - high-quality instrumentation products for off-road vehicle applications in Agriculture, Material handling and Construction Equipment serving OEMs as well as panel builders and system integrators.

We also develop customized products of totally customized HMI solutions like control panels and dashboards. The AST product line, including clusters, working light panels, consoles, meters, gauges and sensors are produced in our facility in Barcelona, Spain.



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# AST CLASSIC GAUGES

ROBUST INSTRUMENTS FOR OEM APPLICATIONS



01



# AST CLASSIC GAUGES

## ROBUST INSTRUMENTS FOR OEM APPLICATIONS

Complete range of electrical & mechanical gauges ideal for OEM off-highway, industrial, specialty vehicle application and replacement markets. Easy installation via single bracket. Front sealed and dust proof. AST match - compatible with Jeager and Veglia Borletti ohm values.

### SPECIFICATIONS

<b>Size</b>	52 mm diameter gauges, total depth 56 mm +/- 3.0 mm
<b>Dials</b>	Metal, black
<b>Graphics/symbols</b>	White-on-black metric scale/ISO symbols
<b>Pointer</b>	Orange pyramidal shaped
<b>Bezel</b>	Black, anodized; low profile type
<b>Lens</b>	Glass
<b>Case</b>	Polyamide, reinforced
<b>Movement</b>	Air-core movement; 60° sweep
<b>Accuracy</b>	+/- 3.6° within the last 2/3 of scale reading
<b>Lighting</b>	Perimeter lighting/incandescent bulb, two-pole; 12-volt, 1.2W, bayonet style
<b>Supply voltage</b>	12 VDC; 24 VDC
<b>Operating voltage</b>	10-16 VDC (12-volt); 22-32 VDC (24-volt)
<b>Ohms/resistance</b>	AST electrical "match"
<b>Electrical connections</b>	6.35 x 0.8 mm blade terminals
<b>Installation hardware</b>	Single bracket, brass-plated steel
<b>Sealing</b>	Front-sealed, gasketed; IP 64/DIN 40050 compliant
<b>Operating temperature</b>	-25°C to +65°C
<b>Storage temperature</b>	-30°C to +65°C; maximum 80°C for one hour



### AMMETERS

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
105280	20-0-20 A	52	NA	12/24	Black	NA
105281	30-0-30 A	52	NA	12/24	Black	NA
105282	50-0-50 A	52	NA	12/24	Black	NA

### FUEL GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
265280	0-1	52	327-8	12	Black	250489
265281	0-1	52	327-8	24	Black	250492

### PRESSURE GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
355284	0-6 B	52	305-10	12	Black	See "Sndrs"
355285	0-8 B	52	305-10	12	Black	See "Sndrs"
355286	0-10 B	52	305-10	12	Black	See "Sndrs"
355288	0-8 B	52	305-10	24	Black	See "Sndrs"

## ENGINE OIL TEMPERATURE GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
415290	50-150°C	52	700-35	12	Black	See "Sndrs"
415291	50-150°C	52	700-35	24	Black	See "Sndrs"

## VOLTMETERS

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
445280	8-18 V	52	NA	12	Black	NA
445281	16-36 V	52	NA	24	Black	NA

## WATER TEMPERATURE GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
415280	40-120°C	52	245-75	12	Black	See "Sndrs"
415281	40-120°C	52	245-75	24	Black	See "Sndrs"
416086	40-120°C	60	245-75	12	Black	See "Sndrs"
416087	40-120°C	60	245-75	24	Black	See "Sndrs"

# AST SERIE 2000™ GAUGES

ROBUST INSTRUMENTS FOR OEM APPLICATIONS



02





# AST SERIE 2000™ GAUGES

## ROBUST INSTRUMENTS FOR OEM APPLICATIONS



Complete range of electrical gauges, ideal for OEM off-highway, industrial and specialty vehicle application, with 90° sweep lighted pointers. Easy installation with spin-on-mounting ring. Front sealed and dust proof. AST match - compatible with Jeager and Veglia Borletti ohm values.

### SPECIFICATIONS

<b>Size</b>	52 mm diameter gauges, total depth 56 mm +/- 3.0 mm
<b>Dials</b>	Polycarbonate, black
<b>Graphics/symbols</b>	White-on-black metric scale/ISO symbols
<b>Pointer</b>	Clear polycarbonate with orange background, black hub, lighted
<b>Bezel</b>	Black, anodized; low profile type
<b>Lens</b>	Glass
<b>Case</b>	Polyamide, reinforced
<b>Movement</b>	High-torque air-core movement; 90° sweep
<b>Accuracy</b>	+/- 3.6° within the last 2/3 of scale reading
<b>Lighting</b>	Translucent (backlit)/Incandescent bulb, two-pole; 12- volt, J .2W, T-W2 style
<b>Supply/operating voltage</b>	12 VDC; 24 VDC/10-16 VDC (12-volt); 22-32 VDC (24- volt)
<b>Ohms/resistance</b>	AST electrical "match"
<b>Electrical connections</b>	6.35 x 0.8 mm blade terminals
<b>Installation hardware</b>	Spin-on mounting ring, plastic, ABS
<b>Sealing</b>	Front-sealed, gasketed; IP 64/DIN 40050 compliant
<b>Operating temperature</b>	-25°C to +65°C
<b>Storage temperature</b>	-30°C to +65°C; maximum 80°C for one hour



### AIR BRAKE GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
355027	0-12 B	52	305-10	24	Black	See "Sndrs"

### AMMETERS

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
105013	30-0-30 A	52	NA	12/24	Black	See "Sdrs"

### ENGINE OIL TEMPERATURE GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
415093	50-150°C	52	708-34	12	Black	See "Sdrs"
415094	50-150°C	52	708-34	24	Black	See "Sdrs"
415062	50-150°C	52	322-18	12	Black	See "Sdrs"
415063	50-150°C	52	322-18	24	Black	See "Sdrs"

## FUEL GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
265011	0-1	52	327-8	12	Black	250489
265012	0-1	52	327-8	24	Black	250489
265281	0-1	52	327-8	12	Black	

## HYDRAULIC OIL TEMPERATURE GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
415098	20-100°C	52	37-590	12	Black	See "Sdrs"
415097	20-100°C	52	37-590	24	Black	See "Sdrs"

## PRESSURE GAUGES

P/N	Scale	Ø mm	Ohms	Volts	Bezel	Sender
355021	0-6 B	52	305-10	12	Black	See "Sdrs"
355022	0-8 B	52	305-10	12	Black	See "Sdrs"
355012	0-8 B	52	305-10	24	Black	See "Sdrs"
355054	0-5 B	52	10-180	24	Black	See "Sdrs"
355050	0-10 B	52	10-180	12	Black	See "Sdrs"
355051	0-10 B	52	10-180	24	Black	See "Sdrs"
355034	0-24 B	52	305-10	24	Black	See "Sdrs"

**WATER TEMPERATURE**

<b>P/N</b>	<b>Scale</b>	<b>Ø mm</b>	<b>Ohms</b>	<b>Volts</b>	<b>Bezel</b>	<b>Sender</b>
415011	40-120°C	52	1060-75	12	Black	See "Sdrs"
415012	40-121°C	52	1060-75	24	Black	See "Sdrs"
415050	40-122°C	52	287-22	12	Black	See "Sdrs"
415051	40-123°C	52	287-22	24	Black	See "Sdrs"

**VOLTMETERS**

<b>P/N</b>	<b>Scale</b>	<b>Ø mm</b>	<b>Ohms</b>	<b>Volts</b>	<b>Bezel</b>	<b>Sender</b>
445011	10-16 V	52	NA	12	Black	See "Sdrs"
445012	20-32 V	52	NA	24	Black	See "Sdrs"

**TRANSMISSION OIL TEMPERATURE**

<b>P/N</b>	<b>Scale</b>	<b>Ø mm</b>	<b>Ohms</b>	<b>Volts</b>	<b>Bezel</b>	<b>Sender</b>
415021	50-150° C	52	708-34	12	Black	See "Sdrs"
415022	50-150° C	52	708-34	14	Black	See "Sdrs"
415060	50-150° C	52	322-18	12	Black	See "Sdrs"
415061	50-150° C	52	322-18	14	Black	See "Sdrs"

# AST TACHOMETERS, SPEEDOMETERS & HOURMETERS

ROBUST METERS FOR OEM APPLICATIONS





# AST TACHOMETERS, SPEEDOMETERS & HOURMETERS

## ROBUST METERS FOR OEM APPLICATIONS

Complete range of electrical and mechanical tachometers and speedometers, ideal for OEM off-highway, industrial and specialty vehicle application. Easy installation with spin-on-mounting ring.

### SPECIFICATIONS

<b>Size</b>	80, 88 & 100 mm diameter versions (Note: 88 mm products are mechanical only)
<b>Dials</b>	Polycarbonate, black
<b>Graphics/symbols</b>	White-on-black metric scale/ISO symbols
<b>Pointer</b>	Electrical meters: clear polycarbonate with orange background, black hub, lighted; mechanical meters: whitewith black hub
<b>Bezel</b>	Black, anodized; low profile type
<b>Lens</b>	Glass
<b>Case</b>	Polyamide, reinforced
<b>Movement</b>	High-torque air-core movement
<b>Indicating tolerance</b>	+/- 3.5% of end-scale total value, from 10-90% of full- scale
<b>Lighting</b>	Translucent (backlit)/Incandescent bulb, two-pole; 12-volt, 1.2 W, TW-2 style
<b>Supply/operating voltage</b>	12 VDC; 24 VDC/10-16 VDC ( 12-volt; 22-32 VDC (24-volt)
<b>Electrical connections</b>	6.35 x 0.8 mm blade terminals
<b>Hardware</b>	Spin-on mounting ring, plastic, ABS
<b>Sealing</b>	Front-sealed, gasketed; IP 64/DIN 40050 compliant
<b>Operating temperature</b>	-25°C to +65°C
<b>Storage temperature</b>	-30°C to +65°C; maximum 80°C for one hour



**SPEEDOMETERS WITH ODOMETERS**

<b>P/N</b>	<b>Scale</b>	<b>Ø mm</b>	<b>Volts</b>	<b>Signal source</b>
578001	0-120 MPH	80	12	Magnetic sensor
578010	0-120 KM/H	80	24	Magnetic sensor
578011	0-60 KM/H	80	24	Magnetic sensor

**TACHOMETERS WITHOUT HOURMETERS**

<b>P/N</b>	<b>Scale</b>	<b>Ø mm</b>	<b>Volts</b>	<b>Signal source</b>
228010	0-3000 RPM	80	12	Alternator
228011	0-3000 RPM	80	24	Alternator
228012	0-4000 RPM	80	12	Alternator
228015	0-8000 RPM	80	12	Delco
228019	0-4000 RPM	80	12	Alternator
228020	0-4000 RPM	80	24	Alternator



## TACHOMETERS WITH HOURMETERS

P/N	Scale	Ø mm	Volts	Signal source
221010	0-4000 RPM	100	12	Alternator
471001	0-3000 RPM	100	12	Alternator
471002	0-4000 RPM	100	12	Alternator
471003	0-3000 RPM	100	24	Alternator
471004	0-4000 RPM	100	24	Alternator
478001	0-3000 RPM	80	12	Alternator
478002	0-3000 RPM	80	24	Alternator
478003	0-4000 RPM	80	12	Alternator
478004	0-4000 RPM	80	24	Alternator
478016	0-4000 RPM	80	12	Alternator
478018	0-3000 RPM	80	24	Alternator

**Applications tip:** AST speedometers and tachometers are designed to complement Classic and Serie 2000™ gauges. 100 mm diameter units are ideal for heavy-duty, specialty and recreational vehicles where visibility and readability are especially important to customers.



HOURMETERS			
P/N	Range (hours)	Ø mm	Volts
475205	0-99,999.9	52	12/24
475206	0-99,999.9	52	12/24
475209	0-99,999.9	52	36/80
465201	0-99,999.9	52	10-50 V

**Applications tip:** AST tachometers, speedometers and hourmeters may be used with either AST Classic or Serie 2000 gauges in combination with appropriate sensors to assure a fully matched system.

**Applications tip:** A wide range of custom tachometers, speedometers and hourmeters have been developed for OEM customers. Contact us for more information on available variants.

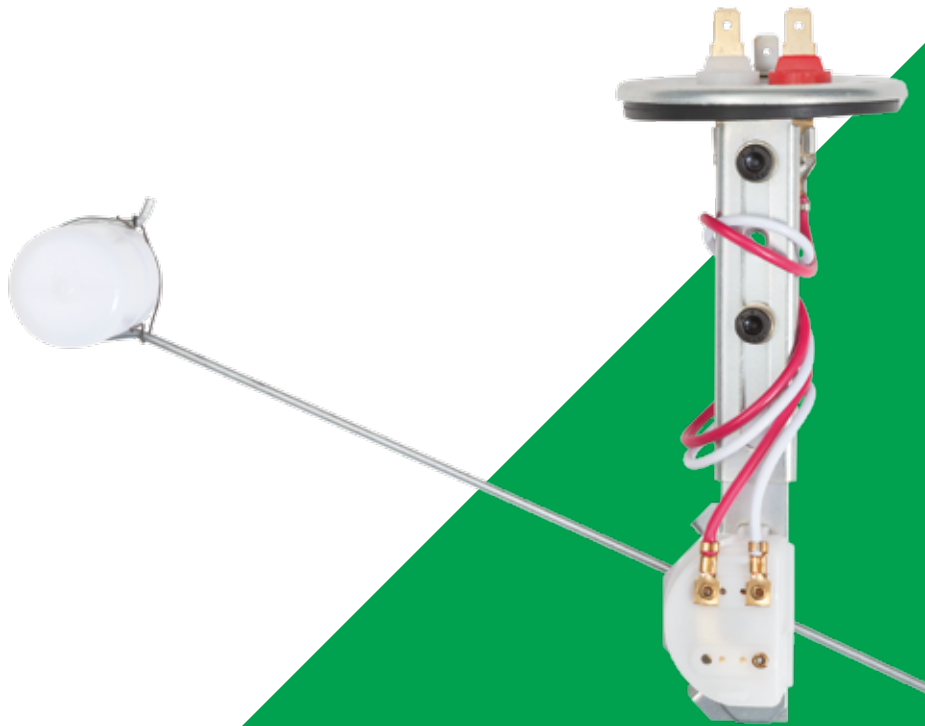
# MAGNETIC PICK UPS / SPEED SENSORS





MAGNETIC SENSORS						
P/N	Connection	Thread	Ohms	Length (mm)	Probe length (mm)	Wire (mm)
632001	Connector 2-way 4.6 Diameter Male/Female	M20 x 1.5	450 W +/- 20 @ 20°C	20	50	400
632002	Connector 2-way 4.6 Diameter Male/Female	M20 x 1.5	450 W +/- 20 @ 20°C	107	97	365
632004	Connector 2-way 4.6 Diameter Male/Female	M20 x 1.5	450 W +/- 20 @ 20°C	150	140	435
632005	Connector 2-way 4.6 Diameter Male/Female	M20 x 1.5	450 W +/- 20 @ 20°C	70	60	400
632040	AMP Superseal Male 2-way	M20 x 1.5	450 W +/- 20 @ 20°C	60	50	400
633403	Packard Electric "Weather Pack"	3/4" x 16 UNF 2A	450 W +/- 20 @ 20°C	67	57	450
633404	Packard Electric "Weather Pack"	3/4" x 16 UNF 2A	450 W +/- 20 @ 20°C	61	51	300
633405	Two Wires No Terminals	3/4" x 16 UNF 2A	450 W +/- 20 @ 20°C	75	65	500
632071	2 way AMP, male	M20 X 1.5	460 W +/- 50 @ 20°C	107	45	365
632072	2 way AMP, male	M20 X 1.5	460 W +/- 50 @ 20°C	135	60	435
632073	2 way AMP, male	M20 X 1.5	460 W +/- 50 @ 20°C	75	60	220
632074	2 way AMP, male	M20 X 1.5	460 W +/- 50 @ 20°C	150	60	435

# HEAVY DUTY SENDERS & SENSORS



05



# HEAVY DUTY SENDERS & SENSORS



Wide range of heavy duty senders and sensors including fuel, temperature, pressure and speed sensing.

## **FUEL SENDERS/ SWITCHES**

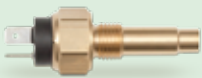
Arm senders with resistor technology in different lengths with or without tubing and with multiple different mounting plate options.

## **TEMPERATURE SENDERS/ SWITCHES**

Wide range of water and oil temperature senders. maximatecc offers different threads, sender/switch combinations and surface mount option.

## **PRESSURE SENDERS**

Wide range of oil pressure senders and sender switches with different thread size options.





## FUEL SENDERS

P/N	Flange (holes)	Low level warning	GRD	Arm length (mm)	Tank depth (mm)	Ohms
250301	6	No	T	290	490	327-8
250314	6	No	T	100	240	327-8
250315	6	No	T	100	260	327-8
250318	6	No	B	190	330	327-8
250326	6	No	B	130	370	327-8
250337	6	No	T	155	267	327-8
250338	6	No	T	155	339	327-8
250341	6	No	T	100	162	327-8
250352	6	No	B	155	348	327-8
250379	6	No	T	290	600	327-8
250428	5	No	B	290	629	327-8
250436	5	No	B	100	260	327-8
250438	5	No	B	100	260	29-1.5
250491	5	Yes	T	290	518	6-95
250489	5	No	T	119-186	548 (Adj)	327-8
250492	5	Yes	T	119-186	548 (Adj)	327-8
250493	5	No	T	119-186	548 (Adj)	327-8
250603	6	Yes	B	100	270	327-8
250608	6	Yes	B	190	380	327-8
250621	6	Yes	B	190	328	327-8
250624	6	Yes	B	190	355	327-8
250650	6	No	B	190	348	10-180
250661	6	Yes	B	50	100	327-8
250662	6	Yes	B	50	200	327-8
250664	6	Yes	B	50	100-350 (Adj)	327-8
250692	6	Yes	T	119-186	548 (Adj)	327-8

**Note:** B = metal body; T = terminal but not isolated.

TEMPERATURE SENDERS					
P/N	Connection	Thread	Ohms	Length (mm)	Probe length (mm)
400001	Blade terminal	Surface Contact	213-67	-	-
401001	Blade terminal	M10x1	213-67	46	22
401201	Blade terminal	1/2x14 NPFT	213-67	55	33
401203	Blade terminal	1/2" 14 NPTF	481-75	54	31
401408	Blade terminal	M14x1.5	213-67	42	21
401411	Blade terminal	M14x1.5	10-180	43	21
401610	Blade terminal	M16x1.5	213-67	42	21
401807	Blade terminal	M18x1.5	213-67	42	21
401851	Blade terminal	1/8"27 NPTF	213-67	46	22
403802	Blade terminal	3/8" GAS 19h	213-67	42	21
405015	Two blade terminals	5/8" UNF	213-67 & normally open 96°C switch point	46	18
405016	Two blade terminals	M14x1.5	213-67 & normally open 100°C switch point	72	40
405017	Two blade terminals	5/8" UNF	213-67 & normally open 102°C switch point	48	18
405019	Two blade terminals	M14x1.5	10-180 & normally open 98°C switch point	72	40
405806	Blade terminal	5/8"-18UNF	213-67	55	34
405807	Blade terminal	5/8"-18UNF	213-67	42	21
405811	Blade terminal	5/8"-18UNF	213-67	49	27



## PRESSURE SENDERS

P/N	Scale	Connection	Thread	Ohms	Switch	Ground Terminal
603502	0-12 B	Two blade	M14x1.5	285-315	No	Yes
603512	0-6 B	Blade	M14x1.5	305-10	No	No
603514	0-6 B	Blade	M10x1	305-10	No	No
603518	0-6 B	Two blade	M14x1.5	305-10	Normally Open 0.6 B	No
603520	0-10 B	1-M4	M14x1.5	10-180	No	No
603521	0-10 B	2-M4	M10x1	10-180	Normally Closed 1.1 B	No
603524	0-10 B	Two blade	1/8"x27 NPTF	305-10	No	Yes
603529	0-12 B	Blade	M14x1.5	305-10	No	No
603531	0-8 B	Blade	M14x1.5	305-10	No	No
603533	0-8 B	Blade	M10x1	305-10	No	No
602541	0-8 B	Two blade	M14x1.5	305-10	Normally Open 0.6 B	No



**TEMPERATURE SWITCHES**

<b>P/N</b>	<b>Connec - tion</b>	<b>Thread</b>	<b>Switch point</b>	<b>Length (mm)</b>	<b>Probe (mm)</b>	<b>Volts</b>	<b>Isolated ground</b>
500325	Blade terminal	5/8"x18 UNF	Normally open 80°C	38	10	6-12	No
501001	Two blade terminals	M10x1	Normally open 85°C	36	8	6-12	Yes
501204	Blade terminal	1/2"x14 NPTF	Normally open 105°C	50	22.5	6-12	No
501409	Blade terminal	M14x1.5	Normally open 120°C	59	29	6-12	No
501411	Two blade terminals	1/8"x27 NPTF	Normally open 47°C	40	12	6-12	Yes
501412	Two blade terminals	M14x1.5	Normally open 77°C	39	11	6-12	Yes
501413	Blade terminal	M14x1.5	Normally open 115°C	50	24.5	6-12	No
501414	Screw M4	M14x1.5	Normally open 97°C	56	29	6-12	No
501426	Two blade terminals	M14x1.5	Normally open 130°C	63	35	6-12	Yes
505806	Blade terminal	5/8"x18 UNF	Normally open 120°C	60	29	6-12	No
505828	Blade terminal	5/8"x18 UNF	Normally open 110°C	38	10	6-12	No

# AST COMPATTINO CLUSTERS

COMPACT STANDARD INSTRUMENT CLUSTERS





# AST COMPATTINO CLUSTERS

## COMPACT STANDARD INSTRUMENT CLUSTERS

Compattino is a compact standard instrument cluster designed for off-highway equipment and specialty vehicles. The Compattino cluster is a state-of-the-art design, based on our long and deep experience from developing customized clusters for leading CE and AG OEMs.

The Compattino cluster is available in two models: The Base model with analog sensor inputs and the DeLuxe model with CAN interface. Compattino clusters come with stepper motors and LED lighting and the DeLuxe model has a LCD or dot-matrix display for providing additional operator support information. In the table at the end of next page you find part numbers for ordering of samples.

The Compattino design is highly configurable to specific application needs. A typical configuration is to customize the overlay so that the warning light set-up and respective icons are adapted for the application. Another example is to alter the gauge set-up, for example by replacing the water temperature gauge with an oil pressure gauge.



## SPECIFICATIONS

<b>Size</b>	230 x 120 x 47.5 mm
<b>Weight</b>	0.44/0.96 kg/lbs
<b>Display type</b>	LCD hourmeter with 6 digits, TFT with LED backlight
<b>Indicators</b>	19 LED status indicators: red, amber, green, blue
<b>Inputs/outputs</b>	
<b>Fuel gauge</b>	Input based on resistive type sender with ohms resistance 240-335Ω or Maxima IntelliSensor® fuel sensor using 1-4V input
<b>Temperature gauge</b>	Based on resistive input
<b>Tachometer</b>	Input via magnetic pick-up or alternator connected
<b>Indicators</b>	All 12 indicators STG or STB (ref. pins 6-17)
<b>Lighting</b>	Controlled via pin 16 (positive power supply)
<b>Ground</b>	1 ground (pin 1)
<b>Voltage</b>	12V nominal, 9-16V range; 24V optional
<b>Electrical protection</b>	Reverse polarity, transients including load-dump, over-voltage, and ESD
<b>Current</b>	Standby current draw <7 mA
<b>IP class</b>	Front IP 67 / Rear IP 66
<b>Temperature range (°C)</b>	-40°C to +85°C (operating/storage)
<b>EMC conformity</b>	ISO 17366
<b>SAE compliant</b>	Moisture, shock & vibration resistant
<b>Housing</b>	UV-resistant PC overlay
<b>Connectors</b>	26-pin Amp connector
<b>Mounting</b>	Panel installation via 4 tabs

P/N	Description
122050	Compattino Base, analog sensor inputs
122703	Compattino DeLuxe, sensor inputs via CAN, with dot matrix display

# DDBI





# ANALOG DDBI

Analog versions of the popular "DDBI" (Direct Data-Bus Instruments) line featuring white-on-black graphics with SAE or ISO symbols, English or metric scales, lighted pointers, black anodized or polished stainless steel step or low-profile type bezels, integral amber LED warning lights (covering high pressure, low temperature, low fuel or low volts) and sealed Deutsch connectors (one 6-pin connector for gauges, two for tachometers and speedometers). Units also feature stepper motors for precise and accurate measurement, as well as improved durability and reliability.

## SPECIFICATIONS

<b>Size</b>	52/ 86 mm
<b>Graphic/Symbols</b>	White on black/SAE&ISO symbols
<b>Pointer</b>	Lighted
<b>Voltage</b>	12-24 V
<b>Connections</b>	Sealed and Deutsch
<b>Scales</b>	English or metrics
<b>Sealing</b>	Front sealed, gasketed
<b>Versions</b>	Analog-Digital
<b>Bezel</b>	Black anodized or polished stainless steel or low profile
<b>Warning lights</b>	Integral amber LED

**FUEL LEVEL\***

<b>P/N</b>	<b>Scale</b>	<b>mm</b>	<b>Volts</b>	<b>Bezel</b>	<b>Ohms/ Vohms</b>	<b>On Setpoint</b>	<b>Off Setpoint</b>
112739	0-4/4	52	12V	SAE Black	240-33.5	1/8 Dec	1/4 Asc
112740	0-4/4	52	24V	SAE Black	240-33.5	1/8 Dec	1/4 Asc
113505	0-4/4	52	12V	SAE Polished	240-33.5	1/8 Dec	1/4 Asc
113506	0-4/4	52	24V	SAE Polished	240-33.5	1/8 Dec	1/4 Asc

**AIR PRESSURE\***

<b>P/N</b>	<b>Scale</b>	<b>mm</b>	<b>Volts</b>	<b>Bezel</b>	<b>Ohms/ Vohms</b>	<b>Type</b>	<b>On/Off Setpoint</b>
113499	0-150 psi	52	12V	SAE Polished	240-33.5	Front	60 Dec/65 Asc
113500	0-150 psi	52	12V	SAE Polished	240-33.5	Rear	60 Dec/65 Asc
113501	0-150 psi	52	24V	SAE Polished	240-33.5	Front	60 Dec/65 Asc
113502	0-150 psi	52	24V	SAE Polished	240-33.5	Rear	60 Dec/65 Asc

\*More part numbers available upon request



### OIL PRESSURE

P/N	Scale	mm	Ohms	Volts	Bezel	On Setpoint	Off Setpoint
119691	0-100 psi	52	240-33.5	12V	SAE Black	10 Dec	15 Asc
120479	0-400 psi	52	0-90	12V	LP Polished	160 Dec/300 Asc	170 Dec/290 Asc
120693	0-400 psi	52	0-90	12V	LP Black	160 Dec/300 Asc	170 Dec/290 Asc

### WATER TEMPERATURE

P/N	Scale	mm	Volts	Bezel	Match	On/Off Setpoint
119690	100-280° F	52	12V	SAE Black	DAH	215 F Asc/205 Dec
123412	100-280° F	52	12V	SAE Black	DAH	N/A
123413	100-240° F	52	12V	SAE Black	DAL	N/A

### VOLTMETERS\*

P/N	Scale	mm	Volts	Bezel	On Setpoint	Off Setpoint
112737	8-18	52	12V	SAE Black	10.5 Dec/15.5 Asc	11.0 Asc/15.0 Dec
112738	16-36	52	24V	SAE Black	21 Dec/31 Asc	22 Asc/30 Dec
113503	8-18	52	12V	SAE Polished	10.5 Dec/15.5 Asc	11.0 Asc/15.0 Dec
113504	8-18	52	24V	SAE Polished	21 Dec/31 Asc	22 Asc/30 Dec

\*More part numbers available upon request





# AST ELECTRONIC DDBI



DDBI (Direct Data-Bus Instruments) provide a direct connection to the SAE J1939 bus network – no instrument controller or gateway required. Units feature white on black graphics with SAE or ISO symbols, English or metric scales, lighted pointers, black anodized or polished stainless steel step or low-profile type bezels, integral amber LED warning lights (covering high pressure, low temperature, low fuel or low volts) and sealed Deutsch connectors (one 6-pin connector for gauges, two for tachometers and speedometers). DDBI use stepper motors for precise and accurate measurement, as well as improved durability and reliability.

## SPECIFICATIONS

<b>Size</b>	52/ 86 mm
<b>Graphic/Symbols</b>	White on black/SAE&ISO symbols
<b>Pointer</b>	Lighted
<b>Voltage</b>	12-24 V
<b>Connections</b>	Sealed and Deutsch
<b>Scales</b>	English or metrics
<b>Sealing</b>	Front sealed, gasketed
<b>Versions</b>	Analog-Digital
<b>Bezel</b>	Black anodized or polished stainless steel or low profile
<b>Warning lights</b>	Integral amber LED



### AIR PRESSURE\*

P/N	Scale	mm	Volts	Bezel	On/Off Setpoint	Air Pressure	English Metric
115159	0-150 psi	52	12V	SAE Black	60 Dec/65 Asc	Front	English
115161	0-150 psi	52	12V	SAE Black	60 Dec/65 Asc	Rear	English
115212	0-150 psi	52	12V	LP Polished	60 Dec/65 Asc	Front	English
115213	0-150 psi	52	12V	LP Polished	60 Dec/65 Asc	Rear	English

### BOOST AIR PRESSURE\*

P/N	Scale	mm	Volts	Bezel	On/Off Setpoint	English Metric
112730	0-30 psi	52	12V	SAE Black	30 Asc/25 Dec	English
112732	0-30 psi	52	24V	SAE Black	30 Asc/25 Dec	English
113496	0-30 psi	52	12V	SAE Polished	30 Asc/25 Dec	English
113498	0-30 psi	52	24V	SAE Polished	30 Asc/25 Dec	English

### COOLANT TEMPERATURE\*

P/N	Scale	mm	Volts	Bezel	On/Off Setpoint	English Metric
112718	100-280° F	52	12V	SAE Black	DM1 from ECM	English
112720	100-280° F	52	12V	SAE Polished	DM1 from ECM	English
113434	100-280° F	52	12V	LP Polished	DM1 from ECM	English
113486	100-280° F	52	12V	LP Black	235 Asc/225 Des	English

\*More part numbers available upon request

**DIESEL EXHAUST FLUID LEVEL\***

<b>P/N</b>	<b>Scale</b>	<b>mm</b>	<b>Volts</b>	<b>Bezel</b>	<b>On/Off Setpoint</b>
121702	0-4/4	52	12V	SAE Black	1/40 Dec-1/20 Asc
121705	0-4/4	52	12V	LP Polished	1/8 Dec-1/4 Asc
121814	0-4/4	52	12V	SAE Polished	1/40 Dec-1/20 Asc
121815	0-4/4	52	12V	LP Black	1/8 Dec-1/4 Asc

**FUEL LEVEL\***

<b>P/N</b>	<b>Scale</b>	<b>mm</b>	<b>Volts</b>	<b>Bezel</b>	<b>On/Off Setpoint</b>
115163	0-4/4	52	12V	SAE Black	1/8 Dec-1/4 Asc
115223	0-4/4	52	12V	LP Polished	1/8 Dec-1/4 Asc
115225	0-4/4	52	24V	LP Polished	1/8 Dec-1/4 Asc
115259	0-4/4	52	12V	SAE Polished	1/8 Dec-1/4 Asc

**OIL PRESSURE\***

<b>P/N</b>	<b>Scale</b>	<b>mm</b>	<b>Volts</b>	<b>Bezel</b>	<b>On/Off Setpoint</b>
112714	0-125 psi	52	12V	SAE Black	DM1 from ECM
112716	0-125 psi	52	24V	SAE Black	DM1 from ECM
113480	0-125 psi	52	12V	SAE Polished	DM1 from ECM
113482	0-125 psi	52	24V	SAE Polished	DM1 from ECM

\*More part numbers available upon request



### ENGINE OIL TEMPERATURE\*

P/N	Scale	mm	Volts	Bezel	On/Off Setpoint
115010	130-350° F	52	12V	SAE Black	DM1 from ECM
115012	130-350° F	52	24V	SAE Black	DM1 from ECM
115014	130-350° F	52	12V	SAE Polished	DM1 from ECM
115016	130-350° F	52	24V	SAE Polished	DM1 from ECM

### TRANSMISSION OIL TEMPERATURE\*

P/N	Scale	mm	Volts	Bezel	On/Off Setpoint
112724	130-340° F	52	24V	SAE Black	DM1 from ECM
113488	130-340° F	52	12V	SAE Polished	DM1 from ECM
113490	130-340° F	52	24V	LP Polished	DM1 from ECM
115189	130-340° F	52	12V	LP Polished	DM1 from ECM

### VOLTMETERS\*

P/N	Scale	mm	Volts	Bezel	On Setpoint	Off Setpoint
112726	8-18 VDC	52	12V	SAE Black	10.5 Dec/15.5 Asc	11.0 Asc/15.0 Dec
112728	16-32 VDC	52	24V	SAE Black	21 Dec/31 Asc	22 Asc/30 Dec
113492	8-18 VDC	52	12V	SAE Polished	10.5 Dec/15.5 Asc	11.0 Asc/15.0 Dec
113494	16-32 VDC	52	12V	SAE Polished	21 Dec/31 Asc	22 Asc/30 Dec

\*More part numbers available upon request

## SPEEDOMETERS\*

P/N	Scale	mm	Volts	Bezel	Display	Analoginputs	English
112742	85MPH/ 130 KPH	86	12V	SAE Black	Odometer	None	Dual-English Dominant
112744	85MPH/ 130 KPH	86	24V	SAE Black	Odometer	None	Dual-English Dominant
113508	85MPH/ 130 KPH	86	12V	SAE Polished	Odometer	Yes	Dual-English Dominant
115227	85MPH/ 130 KPH	86	12V	LP Polished	Odometer	None	Dual-English Dominant

## TACHOMETERS\*

P/N	mm	Volts	Bezel	Display	Analoginputs
112746	86	12V	SAE Black	None	None
112748	86	24V	SAE Black	None	None
112750	86	12V	SAE Black	Hourmeter	None
112752	86	24V	SAE Black	Hourmeter	None

\*More part numbers available upon request

# AST ACCESSORIES

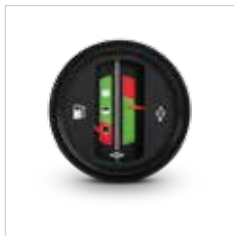




# AST ACCESSORIES

AST also offers a wide range of accessories designed especially for OEM off-highway, industrial, engine-powered equipment and specialty vehicles.

Please consult to get more information about specifications, prices and lead time.



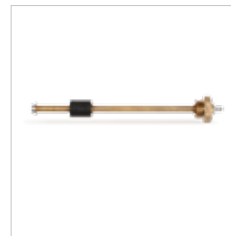
COMBI INSTRUMENT



CONTROL LIGHT



CONTROL LIGHT



FUEL SWITCH



FLASHER



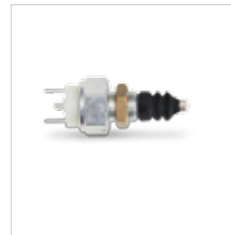
FUEL TAP



ANGLE DRIVE



WATER SWITCH



AIR BRAKE SWITCH



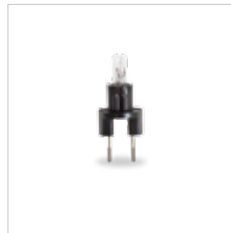
MALE POWER PLUG



IGNITION SWITCH



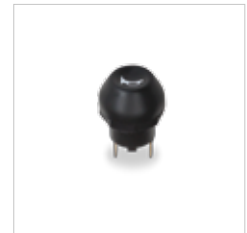
SOCKET



BULB



TURN SWITCH



PUSH BUTTON

# AST

MONITORING YOUR JOURNEY

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maximatecc · C/Progres N° 32,  
08191 Rubi (Barcelona) Spain

Phone: 34.935862073  
[www.maximatecc.com](http://www.maximatecc.com)