

# INFORMATION IS **POWER**

## maxAI CAN Bus Display Series

The status and health of vehicles and equipment is vital, regardless of the application size. Easily monitor all of your vehicle and equipment data with our maxAI CAN Bus Displays. An extensive series of models ensures a high degree of control and flexibility, each designed to fit your budget and monitoring needs. All models can be customized, and the entire series is complimentary to our full CAN Bus and DDBI portfolio.



**maximatecc**

## maxAI 130: COMPACT DESIGN, SUPERIOR USER EXPERIENCE

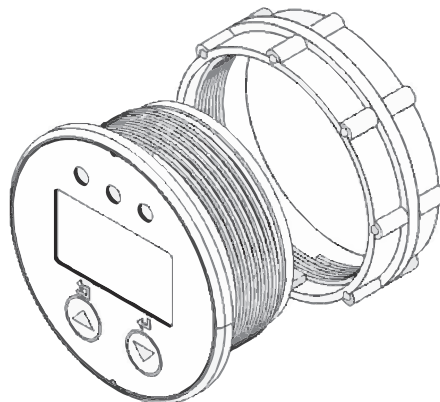
maximatecc is continually focused on innovative ways to communicate critical vehicle data using the most comprehensive designs. As electrification increases in many markets and OEMs adopt battery management systems, you'll find the maxAI 130 offers ideal flexibility with four configurable inputs, allowing you to plug in multiple sensors and senders. The micro controller ensures access to engine performance data in seconds.

Two available models:

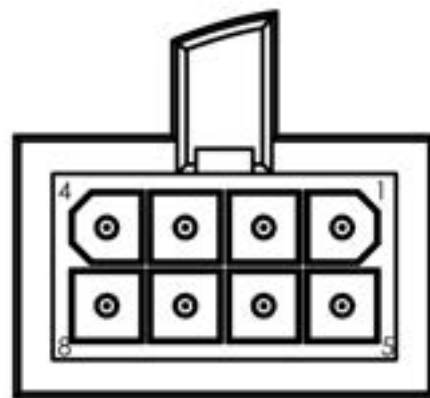
- **maxAI 130: one parameter displayed at a time, cycle screens via external button**
- **maxAI 130b: one parameter displayed at a time, cycle 12 screens via display keypad**

Both models include these display features:

- **Monochrome 1.36-inch FSTN screen with 106 x 56 resolution**
- **Screen setup via configurable application software**
- **Three LED warning indicators with black dead-front**
- **Two available protocols:**
  - **J1939 for engine applications**
  - **CAN open for electrified applications**
- **250 or 500 Kbps baud rate available**
- **Boots up in less than 3 seconds**
- **IP67 rating (front) and IP64 (rear)**



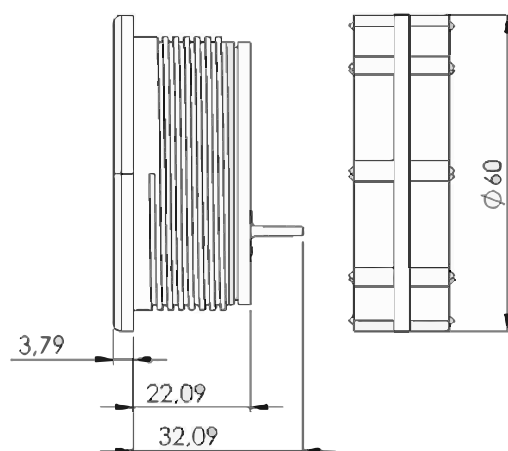
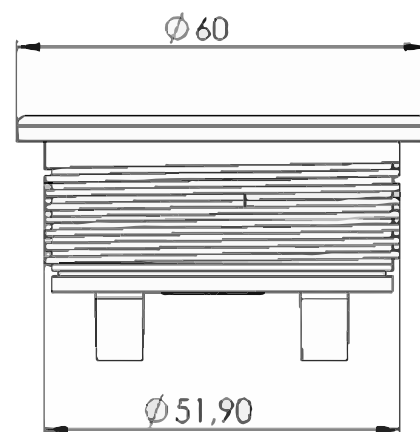
Connector pinout		
#PIN	TYPE	STATE
J1.1	Config. input	Voltage/Digital/Resistance
J1.2	Power	Battery+
J1.3	Power	Ground
J1.4	Config. input	Voltage/Digital/Resistance
J1.5	Config. input	Voltage/Digital/Resistance
J1.6	CAN	CAN High
J1.7	CAN	CAN Low
J1.8	Config. input	Voltage/Digital/Resistance



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# maxAI 130 PRODUCT SPECIFICATIONS

Processing	
<b>Main Processor</b>	Micro-controller based on ARM® Cortex®-M0 32-bit
<b>Storage</b>	Flash memory 200 KB, for operating system and applications
<b>RAM</b>	Micro-controller internal RAM 16 KB
Display	
<b>Type</b>	FSTN
<b>Size &amp; Resolution</b>	1.36" diagonal, 106X56 pixels
<b>Color Depth</b>	1-bit monochrome
Interfaces	
<b>Keypad</b>	maxAI 130b only: 2-button keypad, can be used to navigate up to 12 screens or select menu items
<b>Connectors</b>	8 pin TE Mini-Universal MATE-N-LOK
<b>CAN</b>	1 CAN, J1939 or CAN open protocol, 250 or 500 kbps baud rate available
<b>Input</b>	4 configurable inputs for resistive or voltage output senders, or digital inputs
<b>Power Supply</b>	12 or 24 volt nominal systems
<b>Warning Lights</b>	3 dead-fronted LED status indicators
<b>Electrical Protection</b>	Reverse polarity, transients include load dump, over-voltage and ESD
Software	
<b>Programmable</b>	Programmed in C language
<b>Application Software</b>	maximatecc proprietary
Environment	
<b>IP Class</b>	IP67 (front) IP64 (rear)
<b>EMS Conformity</b>	ISO 13766 (radiated emissions) SAE J1113-21 (radiated immunity)
<b>SAE Standard</b>	Vibration, UV, salt spray and chemical compatibility
<b>Temp. Range</b>	-30 to 70°C (operational) -30 to 80°C (storage)
Casing	
<b>Housing Material</b>	Black PC/ABS plastic, UV resistant
<b>Cover Lens</b>	Polycarbonate with anti-scratch coating and anti-fog treatment
<b>Mech. Installation</b>	Flush/Panel mounting
<b>W x H x D (in/mm)</b>	2.35/60 x 2.35/60 x 1.02/25.88
<b>Weight (oz/g)</b>	Without keypad, 130: 1.6oz/46g With keypad, 130b: 1.7oz/48g



# maxAI 280: DELIVERING HIGH FLEXIBILITY AND CONTROL

maximatecc is continually focused on innovative ways to communicate critical data using the most comprehensive designs. As electrification increases in many markets and OEMs adopt battery management systems, you'll find the maxAI 280 provides the right real-time information, including key engine parameters, warnings and system messages.

Two available models:

- maxAI 280: One CAN channel, two configurable inputs and one output
- maxAI 280b: One CAN channel, five configurable inputs, four outputs and Bluetooth connectivity

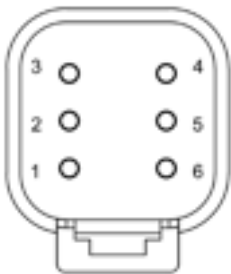
Both models include these display features:

- Vibrant 2.8-inch TFT screen with 240x320 resolution and wide viewing angles
- Multiple screens with up to four parameters
- Screen setup via configurable application software
- Boots up in less than 3 seconds
- Amber and red dead front LED warning indicators
- 250 or 500 Kbps baud rate detection
- IP67 rating (front and rear) with tempered glass lens

J1 Connector pinout (maxAI 280 and maxAI 280b)		
#PIN	TYPE	STATE
J1.1	Power	Battery+
J1.2	Power	Key on
J1.3	CAN	CAN low
J1.4	CAN	CAN high
J1.5	Config. input	Voltage/digital/resistance/freq.
J1.6	Config. input	Voltage/digital/resistance/freq.
J1.7	Digital output	Low/high side driver
J1.8	Power	Ground
J2 Connector pinout (maxAI 280b only)		
#PIN	TYPE	STATE
J2.1	Digital output	Low/high side driver
J2.2	Digital output	Low/high side driver
J2.3	Config. input	Voltage/digital/resistance/freq.
J2.4	Config. input	Voltage/digital/resistance/freq.
J2.5	Config. input	Voltage/digital/resistance/freq.
J2.6	Digital Output	Low/high side driver



J1

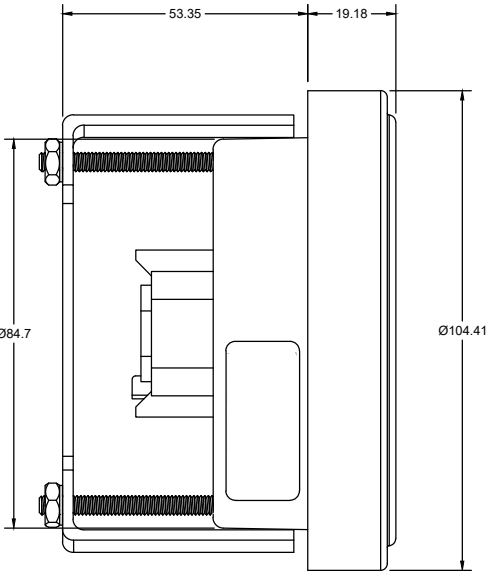
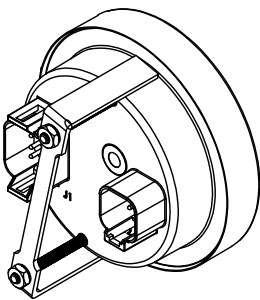
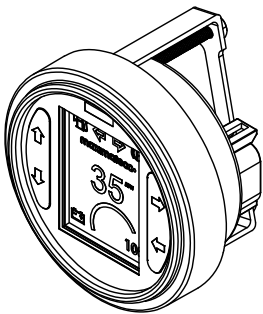


J2



maxAI 280 PRODUCT SPECIFICATIONS

Processing	
Main Processor	Micro-controller based on ARM® Cortex®-M7 32-bit
Internal Memory	1MB RAM, 2MB Flash
External Memory	16MB Flash, 64KB EEPROM
Display	
Type	Premium TFT
Size & Resolution	2.8" diagonal, 240 x 320 pixels, IPS full view angle
Color Depth	18-bit RGB
Contrast Ratio	800:1
Brightness	600 NITS
Interfaces	
Keypad	4 button keypad, can be used to navigate or select menu items
Connectors	maxAI 280 & 280b: 1 Deutsch 8-Pin connector maxAI 280b: Add'l. 1 Deutsch 6-Pin connector
CAN	1 CAN, J1939, bit rate config. 5Mbps
Inputs	maxAI 280: 2 config. inputs maxAI 280b: 5 config. inputs: voltage, resistance, frequency and digital
Outputs	maxAI 280: 1 config. output maxAI 280b: 4 config. outputs
Power Supply	12- and 24- volt systems, 9-32 VDC
Warning Lights	Amber/Red dead-fronted LED indicator
Bluetooth	maxAI 280b: For wireless configuration
Software	
Operating System	Free RTOS
Application Software	maximatecc proprietary
Environment	
IP Class	IP67 (front and rear)
EMS Conformity	ISO 13766 (emissions & immunity)
SAE Standard	Vibration, UV, salt spray and chemical
Temp. Range	-20 to 70°C (operational) -30 to 80°C (storage)
Casing	
Housing Material	Black PC/ABS plastic, UV resistant
Cover Lens	Tempered glass
Mech. Installation	Flush/panel mounting, SAE 3⅜" standard
W x H x D (in/mm)	4.11/104.41 x 4.11/104.41 x 2.86/72.53
Weight (oz/g)	7.27oz/206g



## maxAI 430 series: Optimal control and customization

maximatecc is continually focused on innovative ways to communicate critical data using the most comprehensive designs. Complimentary to our full CAN Bus and DDBI portfolio, the maxAI 430 series has five informative display screens, and up to 20 discreet, exterior, LED warning icons, all integrated into the outside perimeter of the display. A flat screen, dead front, black-lens format ensures better visibility. We've also integrated a backup camera and gauges right on the display screen.

Four available models:

- **maxAI 430: Base model**
- **maxAI 430i: Enhanced with 20 dead-fronted LED warning Icons**
- **maxAI 430v: Upgraded with video input for back-up camera and Bluetooth compatibility**
- **maxAI 430iv: Includes features of all models**

Display features:

- **Primary engine monitoring using two CAN channels and five analog inputs**
  - 250 or 500 Kbps baud rate detection
  - Boots up in less than 3 seconds
- **Designed for use inside or outside cab**
- **Displays up to five screens, each with five parameters and associated information**
- **Configurable application software for display screen and warning light setup, no programming needed**

Warning Icons (430i and 430iv only)	
Location (Color)	Icon
LD1 (Amber)	Open
LD2 (Amber)	Low fuel
LD3 (Amber)	Hydraulic oil temp.
LD4 (Red)	Eng. oil pressure
LD5 (Amber)	Hydraulic oil filter
LD6 (Red)	Battery charging status
LD7 (Amber)	Eng. start aid
LD8 (Amber)	Eng. malfunctioning
LD9 (Red)	Brake system pressure
LD10 (Green)	Left turn
LD11 (Green)	Right turn
LD12 (Red)	Parking brakes
LD13 (Amber)	Eng. emissions filter
LD14 (Amber)	Eng. emissions filter disabled
LD15 (Red)	Eng. emissions temp.
LD16 (Amber)	Diesel exhaust fluid
LD17 (Red)	Transmission oil pressure
LD18 (Amber)	Transmission oil temp.
LD19 (Amber)	Eng. coolant temp.
LD20 (Amber)	Open

Connector Pinout		
#Pin	Type	State
J1.1	Power	Battery +
J1.2	Power	Ignition
J1.3	CAN	CAN 1 low
J1.4	CAN	CAN 1 high
J1.5	CAN	CAN 2 high
J1.6	CAN	CAN 2 low
J1.7	Digital Output	Low/high side driver
J1.8	Power	Ground
J2.1	Config. input	Voltage/digital/resistance/freq.
J2.2	Config. input	Voltage/digital/resistance/freq.
J2.3	Config. input	Voltage/digital/resistance/freq.
J2.4	Config. input	Voltage/digital/resistance/freq.
J2.5	Config. input	Voltage/digital/resistance/freq.
J2.6	Input	4-20mAmp



J1



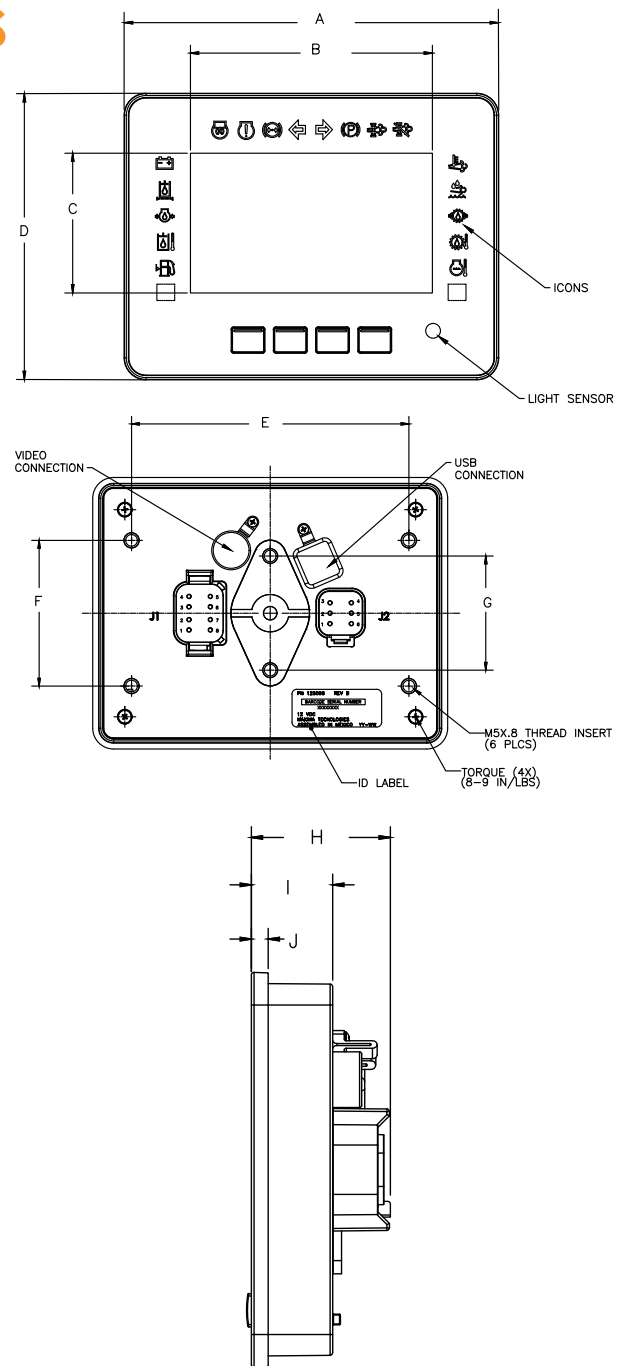
J2

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maxAI 430 PRODUCT SPECIFICATIONS

Processing	
Main Processor	Micro-controller based on ARM® Cortex®-M7 32-bit
Internal Memory	1MB RAM, 2MB Flash
External Memory	2MB SDRAM, 16MB Flash, 64KB EEPROM
Display	
Type	Premium TFT
Size & Resolution	4.3" diagonal, 480x272 px, 75x75x75 multi-viewing angle
Color Depth	24-bit RGB
Contrast Ratio	800:1
Brightness	1000 NITS
Dimming	10-100%, manually controlled via keypad
Interfaces	
Keypad	4 button keypad: navigate/select menu items
CAN	2 CAN, J1939, standard 250 kbps or 500 kbps
USB	USB 2.0 slave (Boot loader and SW configuration support)
Bluetooth	430v, 430iv only: Bluetooth 4.2 (SW config. support)
Video Input	1 analog PAL/NTSC (rear backup camera)
Power Supply	12 or 24 volt systems, 9-32 VDC
Connectors	1 Deutsch DT06-08SA connector 1 Deutsch DT06-6S connector
Warning Lights	1 warning light indicator (amber and red)
Warning Icons	430 & 430v: 21 on-screen icons. 430i & 430iv: 20 LED warning lights, black dead front
Inputs	5 configurable inputs: voltage, resistance frequency and digital, one 4-20mA current input
Outputs	1 config. output, low-side mode up to 1A, high-side mode up to .5A
Software	
Operating System	RTOS
Application Software	maximatecc proprietary
Environment	
IP Class	IP67 (front) & IP66 (rear with connectors)
EMS Conformity	ISO 13766 (emissions) SAE J1113-21 (immunity)
SAE Standard	Vibration, UV, salt spray and chemical
Temp. Range	-20 to 70°C (operational) -30°C to 85°C (storage)
Casing	
Housing Material	Black PC/ABS plastic, UV resistant
Cover Lens	Polycarbonate with anti-scratch and anti-fog treatment
Mech. Install.	Flush/Panel mounting
W x H x D (in/mm)	430, 430v: 5.162 (131.11) x 4.29 (108.97) x 1.63 (41.33) 430i, 430iv: 5.940 (150.88) x 4.54 (115.32) x 1.63 (41.33)
Weight (oz/g)	430, 430v: 9.8oz/277g; 430i, 430iv: 10.5oz/293g



	430i/430iv		430/430v	
	inch	mm	inch	mm
A	5.940	150.88	5.162	131.11
B	3.775	95.89	3.775	95.89
C	2.151	54.64	2.151	54.64
D	4.540	115.32	4.290	108.97
E	4.650	118.11	4.016	102.01
F	2.440	61.98	1.917	48.69
G	1.910	48.51	1.910	48.51
H	1.627	41.33	1.627	41.33
I	0.953	24.21	0.953	24.21
J	0.200	5.08	0.200	5.08

# maxAI CAN Bus Display Series



maxAI	130	130b	280	280b	430	430i	430v	430iv
Display	1.3"	1.3"	2.8"	2.8"	4.3"	4.3"	4.3"	4.3"
Resolution	106 x 56 px	106 x 56 px	240 x 320 px	240 x 320 px	480 x 272 px	480 x 272 px	480 x 272 px	480 x 272 px
Color Depth	1-bit monochrome	1-bit monochrome	18-bit RGB	18-bit RGB	24-bit RGB	24-bit RGB	24-bit RGB	24-bit RGB
Display Screens	12	12	5	5	5	5	5	5
Warning Icons, Deadfront						✓		✓
Warning Icons, On-Screen			✓	✓	✓	✓	✓	✓
Warning Indicator Light	✓	✓	✓	✓	✓	✓	✓	✓
Menu Navigation Buttons		✓	✓	✓	✓	✓	✓	✓
USB 2.0					✓	✓	✓	✓
Bluetooth				✓			✓	✓
Video Input							✓	✓
Protocol	J1939 or CANopen	J1939 or CANopen	J1939	J1939	J1939	J1939	J1939	J1939
CAN Channels	1	1	1	1	2	2	2	2
Inputs	4	4	2	5	6	6	7	7
Outputs	0	0	1	4	1	1	1	1
maxAI Configurator	✓	✓	✓	✓	✓	✓	✓	✓
maxAI Design Studio			✓	✓	✓	✓	✓	✓
maxAI Specialized	✓	✓	✓	✓	✓	✓	✓	✓



# THE DIFFERENCE IS IN THE DETAILS

Put the maxAI CAN Bus Display series to work for you. Contact us today at [info@maximatecc.com](mailto:info@maximatecc.com).

## maxAI CUSTOMIZABLE SOFTWARE SOLUTIONS

maximatecc offers an innovative range of software platforms to ensure a superior user experience. Three powerful and customizable solutions are available:

### maxAI Configurator Tool

For quick and easy setup, use the Configurator Tool to automatically populate your engine monitoring data with preset options and layouts, without the need for complex programming or additional resources. The stand-alone, executable application means you can configure the display and update firmware via an easy-to-use GUI.

### maxAI Design Studio

The Design Studio is a software development kit that provides a higher level of flexibility and control. Choose your own engine monitoring parameters and fully personalize the display to fit your application. Our software development kit is programmed via GNU C/C++ for an ARM and HAL graphical library, using STM32CubeIDE for the developmental platform and TouchGFX for the graphic software framework.

### maxAI Specialized System

The Specialized System provides you with access to the maximatecc engineering team to help you develop a custom interface that meets specific application needs. The team supports all elements of the engineering and setup process.

maximatecc specializes in operator-machine interface solutions for critical environments. We support industrial machinery OEMs and partners globally with a broad portfolio of products and services. Through technology, engineering expertise and operational excellence, we make machines smart, safe and productive.

## NORTH AND LATIN AMERICA

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