



Curtis Connectivity

Remote Diagnostic Module (RDM)



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The Curtis Remote Diagnostic Module (RDM) is a rugged and economical telematics module enabling realtime monitoring of critical data. The Curtis RDM comes equipped with 4G LTE for high speed, low latency, data communication. The Curtis RDM receives critical information from CANbus connected system components utilizing CANopen. Machine location is tracked and monitored by GPS. Machine data is easily visualized and recorded on the Curtis portal. With a small footprint and only power and CAN connections, the Curtis RDM module is easy to connect into a new or existing system.

FEATURES

- Over the air (OTA) firmware updates.
- CAN 2.0 port with CANopen support allows for easy communication to other modules on the CANbus.
- Out of the box communication to Curtis EOS/FOS controllers. Easily update controller firmware and read/ write parameters.
- 12 VDC 96 VDC nominal supply voltage allows for connection to wide range of system voltages.
- Easily operates in demanding conditions with an operational temperature range of -40°C to +70°C and rugged IP65 ingress protection.
- Battery voltage monitoring.
- Fast, low latency, data communication with LTE CAT-1 for Europe and CAT-4 for China.
- Blue/red LEDs for visual feedback of device status.
- Removable SIM card.
- GPS tracking.
- For Europe, the Curtis RDM utilizes an external antenna², allowing the antenna to be mounted separately from the RDM unit to maximize cellular and GPS reception. For China, the RDM utilizes an internal antenna.
- Integrates easily into a system with only CAN and power connections.
- CE¹ compliance, UL¹ recognition and ROHS 3 compliance ensure compatibility with global regulatory safety.

1. Pending

2. External antennas for both cellular and GPS are not included with the Curtis RDM unit. Any male SMA antenna may be purchased.





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SPECIFICATIONS

Electrical

Voltage Ranges:

Nominal	Min.	Max.
12V – 96V	9V	120V

CAN Baud Rate:

100 kbps to 1 Mbps.

Cellular 4G:

China

Standard	Frequency Bands	
GSM	900MHz	
	1800MHz	
TD-SCDMA	B34/B39	
TD-LTE	B38/B39/B40/B41	

EU

Standard	Frequency Bands	
GSM	B3/B8	
UMTS/HSPA+	B1/B5/B8	
LTE-TDD	B38/B40/B41	
LTE-FDD	B1/B3/B5/B7/B8/B20	

Band and Frequency

Bands	Frequency (MHZ)
B1	2100
B2	1900
B3	1800
B4	1700
B5	850
B7	2600
B8	900
B12	700
B20	800
B34	2000
B38	2600
B39	1900
B40	2300
B41	2500



GPS (Optional):

Satellite System Support:

GPS, GLONASS, BeiDou, Galileo, QZSS Default setting: GPS, GLONASS and BeiDou support.

Accuracy: 10m

Environmental

Operating Temperature: -40°C to +70°C.

Storage Temperature: -40° C to $+85^{\circ}$ C.

Humidity:

Soak: Designed to meet EN 60068-2-78. Cyclic: Designed to meet EN 60068-2-30.

Ingress Protection:

IP65 with mating connector per IEC60529.

Salt Spray (Fog): Designed to meet ASTM B 117 as per SAE J1810.

Shock:

Designed to meet EN 60068-2-27.

Vibration:

General Designed to meet EN 60068-2-6. Random

Designed to meet EN 60068-2-64.

Resonance Designed to meet EN 60068-2-6.

EMC

Emissions: Radiated Emission: EN 12895: 201.5. Conducted Emission: EN 301 489-1 V2.2.1.

Immunity: Designed to meet: EN 12895: 2015. EN 301 489-1 V2.2.1.

Regulatory Approvals

UL*: UL recognition to UL 583.

CE*: The product complies with the requirements of the EMC Standards and RoHS 3 (EU Directive 2015/863) and Radio Equipment Directive 2014/53/EU.

*pending



Cellular 1= Integrated Antenna 0= External Sequential Antenna Number Example Model RDM.......1......0......XXX.......EU GPS Market 1=Integrated CN= China Antenna EU= Europe 0= External Antenna

TYPICAL WIRING DIAGRAM

MODEL ENCODEMENT



DIMENSIONS mm









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CONNECTOR



Pin No.	Signal Name	Description
1	Reserved	N/A
2	CAN HI	CANbus high signal
3	CAN LO	CANbus low signal
4	Reserved	N/A
5	B+	Battery Positive
6	В-	Battery Common

The mating connectors for the Curtis RDM is an 6-pin MX150 sealed female connector from Molex. The part numbers to assemble a mating assembly are given in the table below:

Item	Part	MOLEX P/N
1	Connector Housing	33471-6001
2	Terminal	33012 OR 33001
3	Cavity Plug (for unused terminal positions)	34345-4001





WARRANTY

Two year limited warranty from time of delivery.



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Specifications subject to change without notice.