

Datalink DG120

Feature packed, multiple I/O tracker with Bluetooth® and Iridium Option



DATALINK
TECHNOLOGIES



The G120 is a highly capable GPS/GLONASS cellular tracker with a variety of inputs and outputs.

Operating on 2G or 4G Cat-M1/Nb-IoT networks, the G120 is fitted with a Bluetooth module, meaning it can operate as a Bluetooth Gateway and relay sensor or tag data to the server.

FEATURES

- 24/7 Vehicle location
- Ignition + 6 Inputs and 2 Outputs
- 1 x Analogue Input, 0-30V
- Driver ID: RFID, iButton, Wiegand
- 3D Accelerometer
- Bluetooth Low Energy (BLE) 5.0
- RS232 – can be used for Iridium data (to connect an Iridium Edge Module)

APPLICATIONS



Vehicle and
Fleet Tracking



Lone and
Remote
Workers



Out of cellular
coverage
locations



Cold Chain
Management



Agricultural
Vehicles and
Sites



Mining, Oil
and Gas Rigs

MECHANICAL SPECIFICATIONS	
Snap-clip ABS Plastic Housing	The ABS plastic housing clips together to make provisioning devices simple and efficient
Operating Temperature	-20°C to +60°C ¹ 1) On external power Below 0°C and above +40°C the internal backup battery will not be charged as a safety precaution due to the dangers associated with charging batteries at extreme temperatures.
Dimensions	L 125 x W 65 x H 30mm
Harness	24 Pin connector A basic harness is supplied as standard. See the harness definition for details
POWER	
Input Voltage	8V to 45V DC (max)
Operating Current	Up to 200mA peak (excludes switched power outputs).
Sleep Current	< 1mA
Back-up Battery	1100mAh LiPo internal backup battery pack
Self-resetting fuse	The G120 passes stringent automotive power “load dump” tests to ensure that it will continue to operate in the harshest electrical systems. A built-in self-resetting fuse makes installation easy and safe.

OTHER	
Flash Memory	Normally data is sent to the server immediately but if the device is out of range there is space to ensure no data is lost – for many weeks of driving!
3-axis accelerometer	Allows the device to detect harsh driving events, and to go to ‘sleep’ when not moving, resulting in extremely low standby current
Bluetooth v5	The G120 is equipped with a Bluetooth v5 module, enabling it to communicate with Bluetooth tags and sensors. Such tags can be placed on low-value assets to provide their position when in range of the G120. Sensors e.g. temperature/tyre pressure can relay information to the G120, which will upload the data to the server. Contact DM for sensor support
CONNECTIVITY	
SIM Size	Micro (3FF) size cellular SIM card
2G or 4G	The G120 can be manufactured for specific markets around the world.
2G Modem	2G: SARA-G350-02S-01 850/900/1800/1900 MHz
4G Modem	uBlox SARA-R410M Modem operates on all major global LTE-Cat-M1 and NB-IoT bands. These new low-power networks are specifically designed for IoT applications, providing great battery life Supported LTE bands: 1*, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26*, 28 (* roaming bands)

GPS TRACKING

GPS and Cellular Antenna Internal GPS and cellular antennas tuned by RF laboratories for optimal performance. Having the antennas inside the housing makes for very simple and quick installation.

GPS/GLONASS tracking Concurrent GPS and GLONASS tracking
72 channel high sensitivity receiver
-169dBm industry leading tracking performance

AssistNow Offline AssistNow Offline aiding data or extremely fast time-to-first-fix and performance in urban canyon environments

Low Noise GPS Amplifier (LNA) GPS signals are boosted by a special low-noise amplifier (LNA). This allows operation where normal units will fail to receive GPS signal

INPUTS AND OUTPUTS

Ignition 1 x Ignition digital input 0-48V DC
5V on/off threshold

6 x Digital Inputs 6 x digital inputs with configurable pull-up/down
0-48V DC input range
On/Off thresholds:
Pull-up enabled: low at 0.8V, high at 1.0V
Pull-down enabled: low at 2.0V, high at 2.4V

2 x Digital Outputs 2 x switched ground digital outputs, easily wired up to switch external lights, relays, buzzers etc.
Can be used to immobilize a vehicle. 500mA max

1 x Analogue Input 1 x 0-30V analogue input, with auto-ranging

Internal Buzzer Audible alert without requiring the installation of an external buzzer. Can be used for speeding alerts, harsh driving alerts, reminders to swipe RFID tags, error conditions, input feedback and other events

2 x Switched Power Out The G120 can provide power to external peripherals allowing for easy installation and doing away with the need for additional external power supplies.

Outputs are either 5V (external power connected) or V_{batt} (no external power)
Maximum current: 400mA

Driver Identification Driver ID via RFID reader or iButton
The G120 can be update from the server with lists of Drivers that are allowed to drive the vehicle. The G120 can be installed to immobilise a vehicle and only allow authorised drivers/operators to drive it.

Supported Driver ID interfaces:
RS232, Wiegand, TTL, iButton

3rd Party readers which output one of the above formats can be integrated into the G120 FW to enable current site cards/passes to be used.

RS232 Can be used to connect an [Iridium Edge Module](#) for out of cellular coverage.
Allows for support of other Driver ID card readers (requires integration work)

Diagnostic LED The diagnostic LED makes it easy to see if the device is operating correctly.

IRIDIUM OPTION

Iridium Satellite	<p>The RS232 connection can be used to connect an Iridium Edge Module, allowing the device to work as an Iridium Hybrid unit</p> <p>The 'Iridium Hybrid' G120 will send data over cellular networks when in coverage, and auto switch to Iridium to send important data when out of coverage.</p>
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FIRMWARE SMARTS

Flexible Logging Parameters	<p>The G120 trip logging is flexible and can be configured to log based on a variety of parameters including: Elapsed time, Distance travelled, Change in heading, Change in speed, On Stationary, Accelerometer events (harsh driving)</p>
Accident and Rollover Detection	<p>The G120 uses the built-in accelerometer to detect high G impacts such as accidents and rollovers and reports these events to the server for emergency alerting.</p>
Harsh Driving	<p>The G120 automatically calibrates its built-in 3 axis accelerometer and uses this to detect harsh driving events:</p> <ul style="list-style-type: none">• Excessive acceleration• Harsh braking• Cornering at speed <p>These events are logged in the G120 along with additional event statistics that allow back-end server platforms to perform sophisticated driver profiling and scoring.</p>

Accident Data	<p>The G120 keeps a second-by-second "black box" recording of valuable GPS and accelerometer data for a two hour window. This data can be automatically uploaded to the server when an accident is detected, or it can be requested manually.</p>
Geo-Fences	<p>The G120 has the capacity to hold hundreds of geo-fences that can be downloaded to it from the server. The G120 can use this geo-fence information to:</p> <ul style="list-style-type: none">• Implement arrival and departure alerts• Implement speeding zones with audible warning alerts• Implement "No-go" and "Keep-out" areas• Automatically control outputs, e.g. to switch on warning lights when inside a special area.
Ignition Detection	<p>The G120 can determine a trip has started based upon:</p> <ul style="list-style-type: none">• Wired Ignition input (voltage on/off)• Emulated Ignition (GPS movement)• Run Detect (Voltage Increases)
Bluetooth Firmware	<p>The G120 continuously scans for Bluetooth devices. DM products include the Guppy Bluetooth and SensorNode Bluetooth.</p> <p>The G120 intelligently maintains a list of devices in range and reports the list to the server on the following conditions:</p> <ul style="list-style-type: none">• Tag found (comes into range)• Tag lost (goes out of range)• Periodic list update