



PAN & TILT, MOTORISED - *Driveman*

1. DESCRIPTION

The Driveman combines high speed, high accuracy performance within a robust and durable platform to support single or multiple sensor payloads. It has been designed to address the requirements of prime contractors and end users who need to support and accurately control the line of sight of sensor payloads using a remotely located control device.

The Driveman is fully self-contained, requiring only the application of appropriate external DC power and serial command data via a single connector mounted on the casing to operate and orientate.

Typical payloads include thermal imagers, day / night cameras and combination EO sensor systems.

The Driveman has been designed to provide a level of performance that complements the use of such devices in a wide range of applications and environments.

The Driveman is suitable for fixed and vehicle-based installations, as well as temporary deployment, mounted on a suitable tripod.

The Driveman is an environmentally sealed, robust assembly providing fully independent motion in both axes.

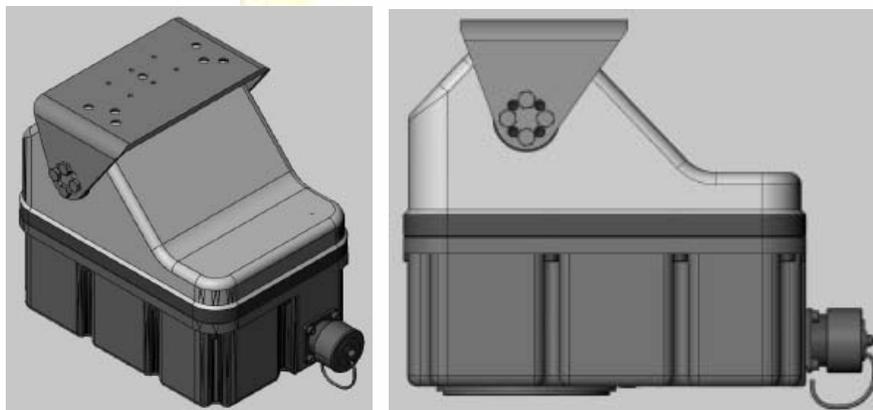
Independent digital servo-control systems are implemented in software for controlling each axis of motion. The platform receives commands and transmits system status and position via a standard serial data link.

The innovative design of the servomotor drive unit ensure that its position in azimuth and elevation is maintained when power is off or when at idle. Safety cut-out circuitry reduces the risk of damage if any axis becomes obstructed or unintentionally immobilised.

A range of payload interfaces are available depending on application including quick release mechanisms for easy mounting and dismounting of payloads.

Mechanical components are designed and dimensioned to ISO metric units. External components are manufactured from suitably specified plastics, aluminium alloy and low magnetic corrosion resistant steel.

Selected exterior surfaces are additionally paint finished.





2. OUTLINE SPECIFICATION

Physical Characteristics	
Manufacturers Part No	00-1210-9003
Dimensions and mechanical interface	Refer to outline drawing DOL 00-1210-9003
Mass (Approx)	4.1kg (9 lbs)
Standard colour	Dark admiralty grey (Other colours optional)
Performance Characteristics	
Torque output (Max)	9.0 Nm (see safety cut-out note below)
Range of motion – limits	Azimuth (pan): $\pm 175^\circ$ *Elevation (tilt): $\pm 45^\circ$ *User programmable software stops allow for limited arcs of travel within these ranges on the Elevation axis only.
Range of motion – factory default	Azimuth (pan): $\pm 175^\circ$ Elevation (tilt): $\pm 45^\circ$
Maximum controlled velocity (average)	60 %/s in both azimuth and elevation
Minimum controlled velocity (average)	0.0056%/s in both azimuth and elevation
Positional resolution	0.0056°
Positional accuracy	0.056° 1 σ in both axis
Environmental Characteristics	
Operating temperature	-32°C to +71°C
Storage temperature	-40°C to + 71°C
Shock and vibration	Designed for MIL-STD-810F environment
Sealing	Designed to withstand IP67 - Immersion to 1m
Electrical Characteristics	
Operating Voltage Nominal (Limits)	+24Vdc
Power Consumption	6.5W stationary 17.5W normal operation
Safety cut-out	Over temperature and over current protection on both axis if current consumption exceeds preset level for 3 seconds consecutively, with motor shut down after three cut-out cycles.
Electrical Connections	MIL 38999 Series III type - One circular connector for all connections
Communications	RS-422

The above figures are provisional ratings and assume typical applications. Actual performance will depend on many parameters, including payload size, configuration and environmental conditions.

3. INTERFACES

3.1 Mechanical interface

For Driveman configuration 00-1210-9003, refer to DOL 00-1210-9003.

3.2 Communication Interface

The platform is controlled by means of a serial communications link complying with TIA/EIA RS-422-B. For Driveman configuration 00-1210-9003, refer to SCP 00-0002-0001 (Available on request).

3.3 Electrical Interface

For Driveman configuration 00-1210-9003 the electrical interface is defined below.

3.3.1 Connector

Driveman - D38999/20WD35PN

Cable - D38999/26WD35SN with appropriate backshell and boot.



3.3.2 Input Connector Pin-Out Detail

Pin	Function	Signal type
12	Platform Power	Power : 2A (typ)
13	Platform Power	Power : 2A (typ)
14	Platform Power	Power : 2A (typ)
27	Platform Power	Power : 2A (typ)
15	Platform Power Return	Power : 2A (typ)
16	Platform Power Return	Power : 2A (typ)
17	Platform Power Return	Power : 2A (typ)
29	Platform Power Return	Power : 2A (typ)
11	Platform Comms Out	RS-422 TX+
25	Platform Comms Out	RS-422 TX-
26	Platform Comms In	RS-422 RX+
34	Platform Comms In	RS-422 RX-
10	Platform Comms Shield	Shield
All remaining pins	N/C	Do not use

3.3.3 Power Supply

The motorised platform operates from a power input that is in within the range +28Vdc +/-4Vdc. For rated performances a +28Vdc supply is recommended. Depending on payload, installation and environmental conditions, the motorised platform will draw a momentary surge current from the connected power supply when accelerating from rest or slow speed. With this in mind the installer should select power supplies capable of coping with a momentary surge current.

4. ASSOCIATED ITEMS

The following accessory items are available:

Starter kit

Consisting of a dedicated power and communication cable plus a basic software controller application.
00-1179-5114

Driveman Tripod adapters

A mechanical adapter to facilitate mounting of a Driveman unit to a tripod.
00-1097-5934