

## DELTA WIRELESS DEADMAN SYSTEM

- ◆ **FREE MOVEMENT AROUND THE REFUELLING AREA, NO SUZIE CABLES**
- ◆ **ATEX APPROVED TRANSMITTER**
- ◆ **REMOTE EMERGENCY STOP FEATURE**
- ◆ **ROBUST ERGONOMIC HANDSWITCH**
- ◆ **UNAFFECTED BY STRAY RADIO SIGNALS**



### Introduction.

For many years it has been standard practice to employ a deadman system for aircraft refuelling, which automatically stops the flow of fuel when the operator releases a hand held switch. The switch is normally electric and is fed through a current limiting device via an extendable coiled suzie cable.

However, there are shortcomings with this system. The suzie cables are not always long enough for stand off refuelling, and therefore tend to be over stretched. This results in premature breakdown of the core which normally causes the system to fail closed, but there have been incidents where the result has been a short circuit, rendering the deadman system permanently operational, even when the switch is released. Also, it is now becoming more common for the refuelling operator to operate the aircraft fuel control panel whilst refuelling. This can require even longer suzie cables for stand off refuelling, or the use of a second suzie cable/switch mounted on the vehicle elevating platform when underwing refuelling wide bodied aircraft.

There is now a system available which helps overcome these problems, the Delta Wireless Deadman System.

### Description.

The Delta Wireless system uses a transmitter (the handswitch), to send a coded digital signal to a receiver unit inside the vehicle cab, which in turn controls the vehicle deadman system.

The signal is digital and transmits on an intermittent timeshare basis, and the receiver and handswitch are coded together. This combination of features allows the unit to operate without interference from stray radio signals or from adjacent wireless deadman systems.

The handswitch is ergonomically designed and is extremely robust and light in weight. It is fitted with a rechargeable battery with capacity for about 12 hours continuous operation, and incorporates a transmission indicator light and a low battery warning light, which tells the operator when he has 15 minutes battery life remaining. When the refuelling is finished the handswitch is stowed onto the receiver unit, at which point the battery is automatically recharged, initially at a high rate and thereafter on trickle charge. The charging contacts are current limited so it is not possible to generate a spark or shock from them, and they are also protected against short circuit. The action of stowing the handswitch automatically sends a signal to the vehicle brake interlock system. It is therefore impossible to drive the vehicle away unless the handswitch is stowed so it cannot be inadvertently left at the aircraft.

A deadman timer feature is included as standard, with separate warning light and sounder outputs, although the timer can be disabled if not required. The receiver unit is fitted with an Emergency Stop button, which is also used for coding the handswitch to the receiver and to initiate a boost charging cycle should it be necessary.

However, the Delta system has some additional features which have not been available up until now. It has a remote Emergency Stop button which is accessed by lifting the handswitch trigger. By pressing this button the operator can close down the complete vehicle deadman system, and also remotely stop the engine. This is a significant safety improvement because in the event of serious vehicle problem developing, for example an engine fire, the operator would not want to return to the vehicle to press the local emergency engine stop button. With the Delta system he does not need to.

There is also an additional button (extra feature) on the handswitch, which can be used for a number of

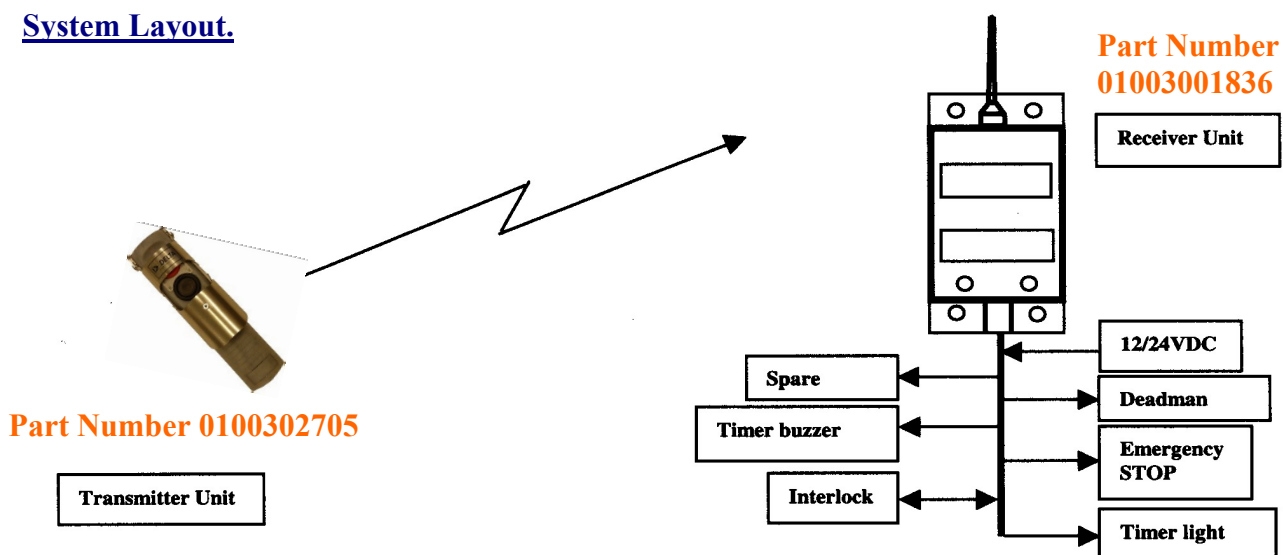
purposes, such as remote engine speed control or remote hose reel rewind.

The Delta Wireless system gives the operator much more freedom to move around the refuelling area, and fully complies with the JIG Guidelines.

The transmitter also has full ATEX approval for use in hazardous areas, which is not available on many of the existing wired systems.

Aljac Fuelling Components is now able to offer you the Delta Wireless Deadman System from stock, and we are also able to provide you with a comprehensive support service, including spare parts, technical advice, and installation.

### System Layout.



### Technical Information.

Type: Low power wireless timeshare transmission system, licence free operation, transmitter and receiver coded together, FSK modulation.

Operating Frequency: Global 2.4GHz.

Transmission Speed: Max 4800 bits/sec.

#### Receiver.

Aerial: External 14.5cm long, BNC connector.

Power Supply: 11-27V DC, auto shut down over 30V DC.

Power Consumption: 62mA standby, 112mA during full charging.

Outputs: Deadman, switch stowage, timer warning light (intermittent), buzzer (constant), normally closed output (opens when Stop button pressed), extra function.

Transmitter Charging: Front panel station, time regulated 50mA constant charging current.

Controls: Push button for emergency stop, coding and boost charging.

Indicators: Green Power On light, Yellow Charging

light.

Housing: ABS Polycarbonate IP52, Stainless Steel mounting plate.

Dimensions: 160mm by 80mm by 60mm deep.

Weight: 0.7 Kg.

#### Transmitter.

Output power: 8 to 10 mW.

Aerial: Internal.

Power Supply: 3.6V NiMH battery, 170 mAh, rechargeable through contacts.

Charging: Constant current charging 50 mA, time controlled by receiver, contacts protected against short circuit.

Charging Temperature Limits: 0 to 50 degC.

Control Buttons: Deadman (operated by Stainless Steel trigger), Emergency Stop, Extra Function.

Indicators: Red Active Transmission light diode, Yellow Low Battery light diode.

Housing: Polyamide 6, IP66.

Dimensions: 40mm diameter, 170mm long.

Weight: 0.3Kg including battery.

ATEX Approved: II 2G Ex ib IIC T4.