



## **Case Study – GSM2 Comms units**

### **Alport DBS to Ashford DSR mains pressure – GSM Comms Link**

#### **Introduction**

Severn Trent Water's (STW) contractors were looking for an immediate solution to a nearly completed scheme to transmit a mains pressure transducer signal 4-20ma scaled system to a control panel display at the Ashford DSR.

A competitor's pair of units had been purchased to originally to perform this task but both the contractors and the original equipment suppliers could not establish a comms link using fixed STW supplied fixed EE SIM cards with 30mb data allowance between the sites due to the low amount of 2G/3G signal available on the Ashford DBS site within the site cubicle.

Both the DBS and the DSR have mains power available but the DSR site is an underground control room.

Hence, due to the success of another fast fix GSM solution used in the district at Edale DSR and Bentley DSR, the request to obtain a pair of Simranger GSM 2 units via the STW approved contractor was received to replace the units that would not work due to low signal strength.

The Simranger GSM2 can work as low as 1 bar of mobile network on any network.

## Design Specification

The system must be able to work off a 24v dc supply via a 230vac to 24vdc rectifier block.

The system must be able to transmit 1 x Analogue signal (4 to 20mA) and 1 digital output for comms failure.

The units must work from a STW supplied EE fixed SIM cards and only use less than 30mb of data max per month on each unit.

The GSM units must transmit / update every 2 mins.

If no GSM signal received after 20mins the unit should failsafe and its milliamp output must be driven to 0ma and also drop the 'failsafe' 'comms fail relay' to indicate to telemetry that there is a GSM system comms fail.

On restoration of GSM Comms the system should auto reset itself back to transmitting the 4-20ma level comms signal and reset the 'comms fail relay' back to healthy thus gaining a healthy comms path signal.



## Site Survey

The site contractor confirmed that there was at least a healthy one bar of EE mobile comms signal of 3G strength on both ends of the site. As this was an immediate solution required this was ample to work the Simranger GSM2 comms units. No further surveys required.

## Quotation / Ordering Stage

A quote for an immediate dispatch of a pair of GSM2 units was raised from the contractor (an official STW supplier) via Simranger.

The quote was issued the same day along with a PO back to the supplier.

The 2 x STW EE SIM card were sent to the Simranger offices to be fitted and bench tested in the GSM2 units.

These were programmed up with the outlined parameters required and the pair of units was delivered to the contractor on site.



## Installation

The Simranger GSM2's were fitted via the STW approved contractor in place of the obsolete comms units. This was simply a matter of removing the redundant failed GSM links and replacing with the Simranger GSM2 units and connecting the aerials. The aerial at the Ashford DSR site was required to be mounted on the roof of the underground station to obtain a suitable mobile signal.

Once the units were fitted, taking less than 2 hours for both sites, the units powered up, and comms was swiftly established.



Alport DBS

Ashford DSR

Ashford DSR Aerial

## **Commissioning**

Simranger attended site (free of charge) to assist with a smooth and swift commissioning as this was the first time the technicians had fitted this kit.

The units were then commissioned using a forced 4-20ma stepped through the ranges and also for its action on a loss of site comms between the units. All units comms tests performed perfectly.

## **Site issue / comms fail alarm experienced**

Once the units were connected to the field pressure transmitter it was noted, via use of the 'free issued website/app' (see below) that there was no analogue input being received at the Alport DBS site but comms between the units was established.

On closer inspection the transducer fitted by contractors was not working. As Simranger had instrumentation experience they were asked to look at the transducer. It was swiftly noted that some wires had become unattached within the unit. With the use of a soldering iron and a recalibration pressure test (all carried out free of charge to aid the completion of the job). Once refitted the website/app was once again utilised to quickly identify that the analogue input was now restored and working.

# Free Issue Website/app

portal.amartguard.co/simex

Status of SR00023			
Input	Reading	Units	Info
Digital Input 1	OFF	on/off	
Digital Input 2	OFF	on/off	
Digital Input 3	OFF	on/off	
Digital Input 4	OFF	on/off	
Analogue CH1 (input)	14.206	mA	
Supply	12.9	Volts	
Last Seen	4	minutes	time since last connection

**Enter serial and search**

Serial SR00023