



GPS SYNCHRONISATION CONTROLLER

for ultimate Cathodic Protection

Cathodic Protection is a necessary process in maximising pipeline life by preventing corrosion and oxidation. Transformer Rectifiers, located at regular intervals along the pipeline, inject a current into the pipe to replace any lost electrons. The level of current must be controlled to ensure optimal protection. Regular voltage measurements must be taken to ensure the optimum current is injected.

Historically this has been a time consuming process. The Cathodic Protection system needs to be switched off and on during measurement. Most pipelines extend over extremely long distances and it becomes impractical to manually switch the Transformer Rectifier units whilst taking the measurements.

This problem is solved by using Omnitronics' GPS Synchronisation Controller.

The GPS Synchronisation Controller has a programmable internal calendar. The internal calendar provides a means of switching the Cathodic Protection Systems on and off at pre-prescribed dates and times, within an accuracy of ± 3 milliseconds.



Benefits:

- Increased Accuracy of Voltage Measurements
- Achieve the maximum life out of the pipe
- Significant savings in man power
- Can be controlled locally, remotely or pre-programmed



Specifications

Voltage Supply	
Input Supply Voltage	10 to 30VDC
Operating Voltage (Logic)	5VDC
Operating Current (24V)	60mA nominal
Power Supply Protection	
Reverse polarity protection	Series diode
Fuse	0.5A resetting
Transient Protection	30V Transzorb, 35V MOV
Noise Suppression	370µH common mode choke
Communications	
External	RS232 full duplex
Baud Rate	9600bps
Format	8,N,1
Switchable Options	Processor – RS232, Processor – GPS, GPS – RS232
GPS Receiver	
Type	Lassen iQ Continuous Tracking
Receiver Channels	12
Frequency	1575.42MHz
Time Sync	1 Pulse Per Sec ±50nsec
GPS Data Backup Supply	3V Li Ion Coin Cell
Output Protocol	Main Timing NMEA*
Configuration Protocol	TSIP*
LNA Gain	28dB Typical
Current	10mA
Impedance	50Ω
VSWR	1.5:1 max at connector
Polarisation	Right Hand Circular
Protection Switch Drive	
Type	5 to 12V isolated
Isolation	1kV DC
Drive	Gate – Source of MOSFET Switch
Turn Off Delay Reduction	Transistor Active Shunt
Turn Off Delay	< 4ms
GPS Synchronisation	< ±2.5ms unit-unit
Digital Input/Output	
Inputs	8
Outputs	8
Environmental	
Operating Temperature Range	0°C to +70°C
Antenna	-40°C to +85°C
Storage Temperature	-25°C to +85°C
Relative Humidity	95% non condensing

*GPS Protocols: NMEA National Maritime Electronics Association
 TSIP Trimble Standard Interface Protocol



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