SERTEL
Think Time Think Sertel

SIGNAL CONDITIONER
T-SC-300

OVERVIEW

Signal Conditioner converts one format of time signal to another time format with provision of providing many number of outputs for connecting to various number of Electrical and Instrumentation devices.

Multiple protocol variants such as IRIG-B (AM / TTL), RS 232, RS485, TCP/IP, NTP/SNTP,NTP/SNTP Over FO, IRIG-B –TTL over FO output, Differential pulse signals are generated as per quantity requirement.Each outputs are isolated.

Conversions such as RS 232 to RS485, RS 232 to TCP/IP, RS232 to Pulse, RS232 to SNTP/NTP, IRIG-B(TTL) to IRIG –B (AM), IRIG-B(AM) to IRIG-B(TTL), RS232 to NTP/SNTP– FO,

Signal Conditioner Units are provided for RS232, Pulse output, IRIG B outputs, SNTP/NTP Output, TCP/IP Output. These outputs are isolated completely. Pulse Width Duration i.e., Pulse Per Second, Pulse Per Minute, Pulse Per Hour are user selectable as per requirement.

Uniform time can be maintained across plant premises with help of single GNSS/GPS Receivers

OPERATION

The signal from the satellite is collected by T-GPA-014-S15,an active antenna and transmits the signal to Multi Constellation GNSS Time Server.

GNSS Receiver will have limited number of outputs.

Environments such as Generation plants, Substations with more number of bays, other process industries, have wide range of devices which need time synchronization.

Signal conditioner module receives input from GNSS receiver over RS232/ RS485/IRIG-B outputs required protocols will be generated with the help of signal conditioner module.

Precise Time stamps measurement data can be analysed by feeding external 1PPS Pulse Marker over TTL level signal.

LED Indication in the front panel shows Power Healthiness, Input and Output Signal Status.

Signal Conditioner can be placed at various locations in the plant by decentralizing the signal, which reduce cable length and laying activity.

Highly precise and stable OCXO compensates for any interferences or loss of signal from the satellite/external input thus making the operation of the receiver reliable*.

KEYFEATURES

- Accepts Wide Range of External Input Sources 1PPS, IRIG-B [AM/TTL], RS232, RS485.
- Multiple protocol outputs can be generated
- Protocols generated from Signal Conditioner

  IRIG-B (AM / TTL), RS232, RS485, PTP, TCP/IP, NTP/SNTP,NTP/SNTP Over FO, IRIG-B –TTL over FO output.
- Any combination of outputs can be generated with single input source
- Multiple NTP/SNTP ports can be generated, Unique IP addresses can be assigned for each ports.
- Equipped with high precision OCXO crystal maintaining better holdover and frequency level in case of non-availability of input source*.
- Multiple Signal Conditioners can be placed at various plant locations with help of single GPS/GNSS receivers.
- Highly customizable Output as per requirement and all ports are dedicated one.
- Any number of outputs can be generated with help of multiplying signal conditioners.
- 19" Rack Mount device varies from 1U,2U,3U based on output requirements

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SIGNAL CONDITIONER
T-SC-300

TECHNICAL SPECIFICATIONS

GPS RECEIVER	
Model	T-SC-300
Interface	TTL (Normal High)
Input connector	BNC / Phoenix / DB-9
Output Rate	Every second
Power Supply	90-260 V AC/DC A & B
Display	LED INDICATORS Signal Input Signal Output Power Fail
Design	1U/2U/3URack-mount bracket designed for 19 Inch Cabinets Fabricated Heatsinks IP40 (Ingress Protection Rating)
Oscillator Options	
Rubidium	TBC*
VCTCXO	TBC*
OCXO	TBC*

MECHANICAL SPECIFICATION	
Dimensions	Dimensions
Mounting	Mounting
Weight	Weight
ENVIRONMENT	
Storage Temperature	-40 to +85 ·C
Operating Temperature	-10 to+55 ·C
Humidity	0 – 95% RH, non-condensing
Power Drain	60W max
Power Supplies	1x or 2x Power Supplies High Voltage - AC/DC 120-240 VDC 100-240 VAC Low Voltage - DC 40-110 VDC
Ingress Protection	IP40
Configuration Software	
Platform	Platform

INPUT	
External Pulse Signal	Phoenix /BNC [F]
External 1PPS	TTL, BNC [F]
External IRIG-B	TTL/AM, BNC [F]
External 10Mhz	0 to 13dBm, BNC [F]

OUTPUT	
1PPS	TTL, 50 Ω Impedance, BNC [F]
IRIG-B	AM [B125], BNC [F]
	TTL BNC [F] / TTL-FO
10 MHz	10dBm, ±1dBM, BNC [F]
Impedance	50 Ω Sine Wave
RS232	DB-9 [F] / Phoenix / Wago
RS485	DB-9 [F] / Phoenix / Wago

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External RS232	DB-9 [F]
External RS485	DB-9 [F]
Configuration	Web server Interface and Sertel Time Management Suite for complete accessibility and configurability of server. SNMP for remote management only for NTP/SNTP
Ethernet Connections	RJ45 1GbE/Fast Ethernet SFP 1GbE`/Fast Ethernet
Alarm Relay	3-Pin Form-C NO/NC alarm relay

NTP / SNTP	RJ45 [Copper] / FO
T1/E1/J1 Output	RJ48 T1/E1/J1 Output
Fiber Output	ST Fibre 62.5/125 µm, ʎ 820 nm
Programmable Output	TTL or Frequency Output (1.544, 2.048, 10MHz, Sine or Square) (BNC) TTL or AM IRIG-B Output (BNC) TTL Input/Output (BNC) ST Fiber (62.5/125 µm) multi-mode HV MOSFET 300V 1A (2-pin)

TEST AND STANDARDS

Dry Heat Test	IEC 60068-2-2	Electrostatic Discharge Immunity Test	IEC 61000-4-2,2008
Cold Test	IEC 60068-2-1	Radiated Susceptibility Test	IEC 61000-4-3,2010
Damp Heat (Steady State) Test	IEC 60068-2-3	Electrical Fast Transient Immunity	IEC 61000-4-4,2012
Sinusoidal Vibration Test	IEC 60068-2-6	High Energy Surge Immunity Test	IEC 61000-4-5,2014
Dielectric Strength Test	IEC 60255-5-0	Conducted RF Immunity Test	IEC 61000-4-6,2013
Pulse Magnetic Field Test	IEC 61000-4-9,2016	Power Frequency Magnetic Field Test	IEC 61000-4-8,2009
Radiated RF Power Disturbance	CISPR 14-1,2009	Damped Oscillatory Sinusoidal Immunity Test	IEC 61000-4-18,2011
Voltage Fluctuation and Flicker Emission Test	IEC 61000-3-3,2013	Voltage Dips and Interruption Immunity Test	IEC 61000-4-11
Harmonics, Inter Harmonics and Low Frequency Immunity Test	IEC 61000-4-13,2002		

*Feature Available only on Specific requests and suitable price points
*Output ports & Input Ports are customizable based on the requirements
*Product development is continuous process, subject to change without prior notice

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