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Trigger Star Point

Type K3981B

Non-Ruggedized Trigger Hub

The Trigger Star Point Type K3981B is a non-ruggedized central trigger distribution hub for all incoming and outgoing Start of Record (SR) and T-Zero (T0) signals. In addition, a synchronization clock signal will be provided by the Trigger Star Point. The following functions are implemented by the Trigger Star Point:

- Hub/Repeater function for trigger signals
- Bidirectional standard mode and unidirectional fast mode for T0 with following runtime:
  - » Unidirectional 1 µs
  - » Bidirectional 10 µs
- **S**tart **R**ecord (SR) trigger generation
- Sync. signal generator for 20 Hz, 100 Hz, 1 kHz, 2 kHz or 5 kHz with 10 ppm oscillator stability (software controlled)
- Support of external sync. signal for 20 Hz, 100 Hz, 1 kHz, 2 kHz or 5 kHz by PLL function
- Status latch for trigger sources (T0 and SR) to detect (false) trigger origins

Description

The 19 inch rack of the stationary Trigger Star Point is usually located in or next to the control room. It distributes the generated (T0 and SR) or incoming trigger signals (T0) to all data and video recording systems by star topology via a standardized twisted pair CAT 6 cable. By default a bidirectional signal path will be used for SR/T0 trigger. In that case the trigger should be distributed to all participants within 10 µs. However, by higher requirements related to the runtime a separate line for sending and receiving T0 can be used in order to reduce the trigger runtime to less than 1 µs.

If no valid master sync signal is available the Trigger Star Point generates by default a 1 kHz sync. signal with a stability of better than 10 ppm. In addition there is the possibility to configure further frequencies, namely 20 Hz, 100 Hz, 2 kHz and 5 kHz. These sync. signals are provided at each RJ45 connector of the Trigger Star Point.

Operation of the Trigger Star Point is controlled by software, e.g. CrashDesigner, via Ethernet connection. The following tasks are handled by software:

- Mode setting of sync. frequency
- Configuration of trigger
- Status read-out

LEDs are used to give the user intuitive optical feedback about the trigger and sync. status.

The external supply voltage to the Trigger Star Point can vary in a large range between 85 V AC to 264 V AC. Manual matching by configuration is not necessary.

Technical Data

Input power		
AC input voltage range	V	85 ... 264
AC input frequency	Hz	47 ... 63
DC input voltage range	V	120 ... 375
Inrush current	A	40
Max. input current	A	0,65
Power consumption	W	<30
Leakage current (230 V 60 Hz)	mA	<0,75
External sync input		
Input magnitude maximum (peak to peak)	V	12
Input magnitude minimum (peak to peak)	V	0,4
Input impedance	Ω	120 ±5
Supported frequencies (external sync.)	Hz	20, 100, 1 000, 2 000, 5 000
Allowed tolerance of ext sync frequency	ppm	250
Fallback frequency if ext sync is invalid	Hz	1 000
Sync output (RS-485 level, 5 V differential)		
Max. drive current	mA	150
Max. recommended drive current	mA	50
Time base stability	ppm	<10
Supported frequencies (master sync.)	Hz	20, 100, 1 000, 2 000, 5 000
Allowed tolerance of master sync freq.	ppm	250
Fallback frequency if master sync is invalid	Hz	1 000
Delay to external sync (rising edge @ 1 kHz)	µs	0,5 ±0,2

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Technical Data (Continuation)

Trigger delay		
Input to output SR and T0 (std.)	µs	3,6 ±0,5
Input to output T0 (fast mode)	µs	0,8 ±0,2
Degree of protection	EN60529	IP20
Environmental conditions		
Storage temperature range	°C	–30 ... 85
Operation temperature range	°C	–25 ... 40
Storage humidity range (non-condensing)	%RH	10 ... 85
Operation humidity range (non-condensing)	%RH	30 ... 85
Weight	kg	4,4
Dimensions (LxWxH)	cm	31x48,3x13,3

Ordering Key

Type K3981B ☐

Variants

Trigger Star Point - 10 Channels	**01**
Trigger Star Point - 20 Channels Extension	**02**

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