Stall Monitor v4   STM156

Description

The Stall Monitor STM156 provides an under speed alarm in monitoring applications such as conveyor systems and rotating shafts and will accept signals from the following sensor types.

- > **Low level AC**, sine waves as produced by coil-type pick up (min 200mVpp).
- > **Low level AC**, any wave shape having a consistent frequency pattern (200mVpp up to 20Vpp).
- > **DC pulse**, zero going (200mVpp up to 50Vpp).
- > **NAMUR proximity sensor or pulsing contact** - the sensor is directly connected to the STM156 as the module provides the 8Vdc auxiliary supply.
- > **All types of 3-wire proximity sensors**, optical sensors or any devices with NPN/PNP open collector transistor output requiring 5 - 30Vdc auxiliary supply at 20mA maximum.

The operation of the unit is to monitor the time between pulses and provide a relay contact output if a pulse is not detected within the time set via the trip speed adjustment. If the monitor times out before detecting the next pulse, the alarm will be activated, however it will be reset upon detection of the subsequent pulse. Thus the level of under speed can be determined via the alarm duration for applications where the alarm is not used to shut down the system upon under speed detection. For applications where a start-up delay is required, the STM156 can be fitted with a power-up (link 6 and 7)/start-up (contact 6 and 7) delay timer that inhibits the operation of the alarm for the pre-set delay time (max. 5 min). The STM156 provides indication of target detection and relay status via the LED's, a switch for reverse or direct action of relay operation and 15-turn trim-pots for trip speed and optional start up delay. Various power supply choices are available ranging from 240Vac down to 8Vdc all featuring power isolation and power transient protection.

General Specifications

Size:	52 W x 70 H x 110 D (mm).
Mounting:	DIN-Rail, gear plate.
Termination:	Screw terminals on front.
Protection class:	IP40.
Weight:	0.300 kg.
Housing material:	ABS.
Repeatability:	0.5% of input span.
Temperature effect:	0.01% per °C.
Operating temperature range:	-10...+60°C.
Storage temperature range:	-20...+70°C.
Power requirement:	3W.

Electromagnetic compatibility: AS/NZS 4251.1 (EN 50081.1) ℃

Block Diagram
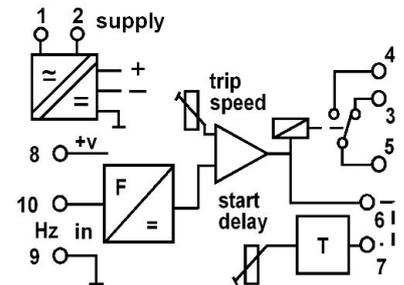
TYPICAL APPLICATIONS

- Conveyor belt stall monitoring.
- Conveyor belt under speed (overload) monitoring.
- Stall or under speed monitoring on any slowly rotating shaft.

For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

TYPE NO. DESIGNATION

STM156 - X XX X X X X

Power Supply:

1 = 90-280Vac 50/60Hz (65-280Vdc).　　*) 6 = 8 - 60Vdc.
*) 3 = 16-48Vac 50/60Hz (10-60Vdc)　　*) 9 = Other specify.

Input:

01 = Low level sine or sawtooth (200mVpp - 20Vpp).
02 = 24Vdc pulse external source (0.2 - 50Vdc).
03 = NAMUR proximity sensor or contact (8V).
04 = 3-wire NPN proximity sensor 15V auxiliary.
05 = 3-wire PNP proximity sensor 15V auxiliary.
06 = 3-wire NPN proximity sensor 24V auxiliary.
07 = 3-wire PNP proximity sensor 24V auxiliary.
08 = 2-wire 24Vdc/ac proximity sensor 24V auxiliary.
*) 09 = Other specify.

Output:

1 = Change over contact 5A/240Vac resistive.
2 = Optional 2nd contact (excluding Start-up override).
*) 9 = Other specify.

Trip Speed:

1 = 0 - 10 sec.　　　　　3 = 0 - 60 sec.
2 = 0 - 30 sec.　　　　　4 = 0 - 120 sec.

Start-up Override Delay:

0 = Not fitted　　　　　　*) 2 = 0 - 60 sec.
*) 1 = 0 - 30 sec.　　　　*) 3 = 0 - 300 sec.

Options:

0 = None.
*) 2 = Relay contact 16A/250Vac resistive.
*) 4 = External trip speed adjust.
*) 5 = External start-up delay adjust.
*) 9 = Other specify.

*) = Price Extra.

Front Panel Adjustments

1. Start-up delay adjustment 15 turn precision trimmer.
2. Trip speed adjustment 15 turn precision trimmer.
3. Switch to select REV/DIR trip
   REV: relay energises on under speed.
   DIR: relay de-energises on under speed.
4. Target indicator (green LED).
5. Status indication of trip condition (red LED)
   (LED ON = relay energised).

Connection Diagrams