





HVT 300-DX

Failsafe High Voltage Monitor for up to 1.000V DC







Application

Electrification of numerous industries is prevalent. This is especially true for the automotive industry. Voltage levels of next generation powertrains or batteries in electric cars and trucks are increasing. Currently, 800-1200V is made standard to achieve higher efficiency and faster charging time. This poses challenges to the safety of workers and equipment during manufacturing and testing of high voltage powertrain components.

Typically, the voltage transmitter HVT 300-DX is used in applications which require safety measures to cope with the risk of high voltages. This can be e.g., controlling the access to an automotive test bed or simulation of high voltage powertrain components using a failsafe voltage threshold (for example 50 VDC). Due to the flexible software configuration, the HVT 300 series is suitable for numerous industries and various electrification components.

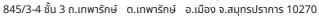
Scope of use

Battery
Battery Management System
Motor
Inverter
Climate Aggregate
Charger
Compressor
HV-Supply

Safety Features

Featuring a safety-by-design approach, the HVT 300-DX provides a wide range of diagnostic functions. In order to create a safety loop, the desired output must be evaluated in conjunction with one of the two diagnostic relays REL3/REL4. This way, two individually configurable safety outputs can be created, for which either the relays REL1/REL2 or the 4...20mA analog output are available.









Main Benefits

- Failsafe voltage monitoring
- Simple software configuration via USB or Modbus RTU
- 0-1000V DC measurement range
- Redundant architecture
- Robust design with high dielectric strength
- SIL2 according to IEC/EN 61508
- Two individual safety outputs
- LED status: Power, Error, Alarm
- 10-year proof test interval

Technical Data		
Certificate	SIL 2 according to IEC 61508	
Measurement range Input Resistance	0 1000V DC 12 MΩ each channel	
Analog Output Load Accuracy	0/420 mA Max 500 Ω at 22mA < 0,5%	
Contact outputs Switching Power Switching Voltage Switching Current Contact Material	Normally Open Max 62,5 VA / Max 30W Max 125VAC/110VDC Max. 1A AG Pd + 10 μAu	
Status LEDs	Power: Green Error / SIL Alarm: Red REL1/REL2: Yellow	
USB Interface	USB 2.0	
RS485 Interface Baud rate Device Address	Half duplex, no scheduling 9600 bps 1-248	
Supply Power Consumption	24VDC (2030VDC) Max. 1,9W	
Temperature Storage / Transport Perm. Humidity Max. operating Altitude	-10°C+60°C -20°C+70°C 10%90% r.H no cond. <2000m above mean sea level	
Temperature Coefficient	<0,01%/K (max) <0,005%/K (typical)	
Galvanic isolation Overvoltage category	4,3 kV AC test voltage CAT II: 1000V Pollution Degree 2	
PCB Material Housing Material Protection Class Flammability UL94 Mounting type	FR4 Polyamide IP20 V0 35mm DIN rail	

Safety Properties	FMEDA
Category	SIL 2
Device type	Type B
HFT	0
SFF	95 %
DC	89 %
Safe failure rate	331 FIT
Safe detected failure rate	0 FIT
Safe undetected failure rate	331 FIT
Dangerous failure rate	362 FIT
Dangerous detected failure rate	325 FIT
Dangerous undetected failure rate	37 FIT

