

COMPLETE EQUIPMENT

OVERSPEED SIL3 MODULE



PROTECTION SYSTEM BASED ON TDSP
RACK FOR ROTATING EQUIPMENT
WITH SIL3 REQUIREMENTS

FEATURES

- SIL3 / IEC 61508-X:2010 2nd Edition certified
- Three channels - stand-alone basis
- Usable with different type of speed transducers, with analogue and digital inputs/outputs
- Overspeed thresholds settable by TDSP Setup software
- Digital outputs connected to safety contacts in 2oo3 architecture
- Ethernet port available on the front for configuring the board and connecting to external diagnostic systems and/or DCS.

FUNCTION

The Overspeed SIL3 protection module is a stand-alone rack which provides a highly reliable and redundant tachometer system specifically uses as part of an overspeed protection system. It is SIL3 / IEC 61508-X:2010 2nd Edition certified.

GENERAL DESCRIPTION

The system is based on the TDSP processing module, with two redundant power supplies, three independent channels for rotating speed measurement and an integrated safety PLC that can operate on a stand-alone basis. The architecture is 2oo3 in accordance with IEC 61508-X:2010 2nd Edition.

Its terminal board makes it possible to connect to different types of “non-contact” sensors that must be faced to a polar wheel.

The ethernet port on the front of each CPU module is used for configuring the board and makes it possible to connect to a dedicated PC that can be used for presenting data and for connecting to external diagnostic systems and/or DCS.

OVERSPEED SIL3 MODULE

ORDERING CODE

OVERSPEED SIL3 / A / B

A POWER SUPPLY

A1 90 ÷ 264 Vac (50/60 Hz)

A2 19 ÷ 32 Vdc

A3 85 ÷ 110 Vdc

B TYPE OF RPM SENSORS

B3 eddy current T-NC/8-API

B4 electromagnetic sensor T6-R

B5 hall effect sensor T6-H

TECHNICAL CHARACTERISTICS

INPUTS

Power supply

- See Ordering code

Speed signal input types

- See Ordering code

OUTPUTS

CPU analog outputs

- 4 ÷ 20 mA each channel

CPU digital outputs

- No.6 Single-pole, double-throw (SPDT) relays each channel
- Each relay is switch selectable for Normally De-energized or Normally Energized

SAFE TRIP digital outputs

- No.4 Single-pole, double-throw (SPDT)
- voting 2oo3 safety logic (2-out-of-3)

GENERIC

Data interface

- LAN port on each CPU
- ModBus TCP/IP communication

Response time to trip

- 40 ms

Accuracy

- < 100 RPM ±0,1 RPM
- 100 ÷ 3000 RPM ±1 RPM
- > 3000 RPM ±0,1%

Protection grade

- IP20

Back terminal boards (PSU & CPU)

- Screw terminal connectors, Phoenix Contact FRONT-SFL 2,5/F48

Environment condition

- Operating temperature 0 ÷ 60°C

Safety data

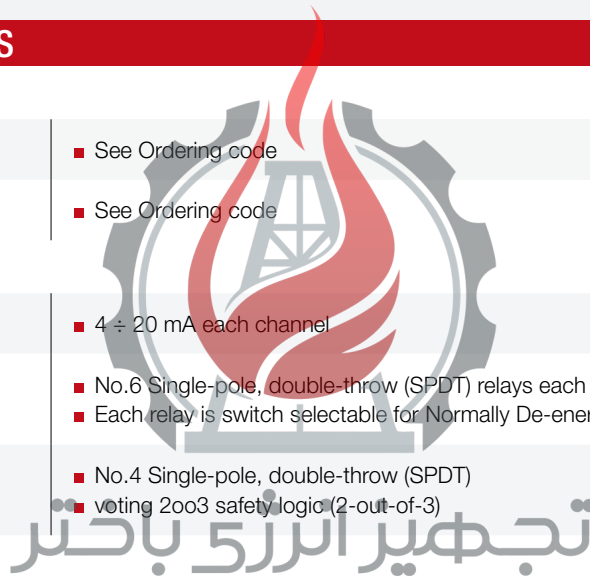
- According to certificate

Weight

- 5 Kg approx

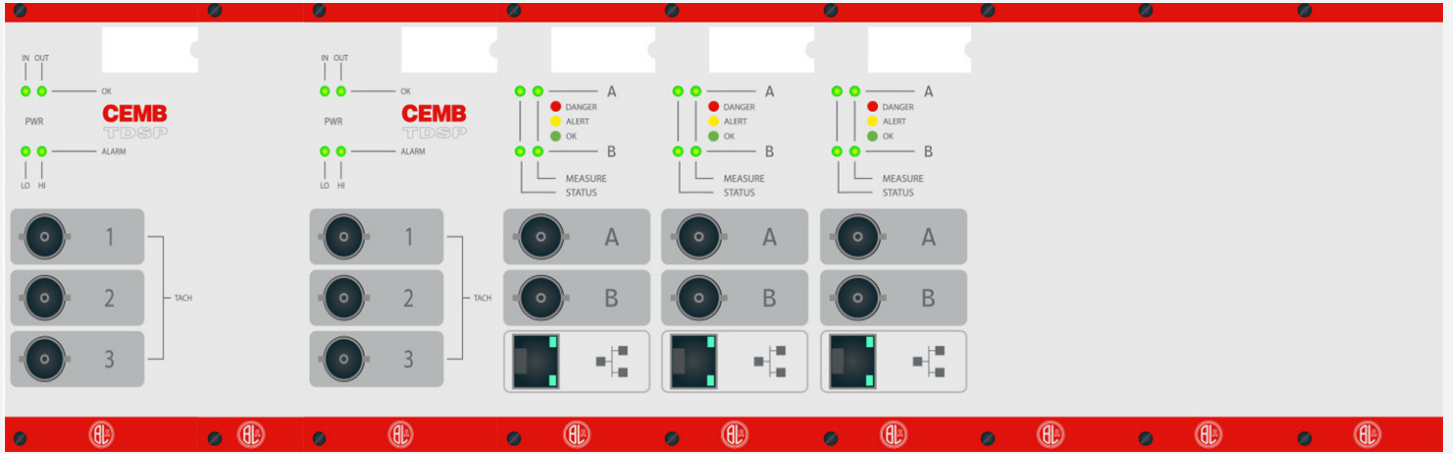
Dimensions (W x H x D)

- 482,5 x 305 x 132,5 mm (19" ; 3 units height)

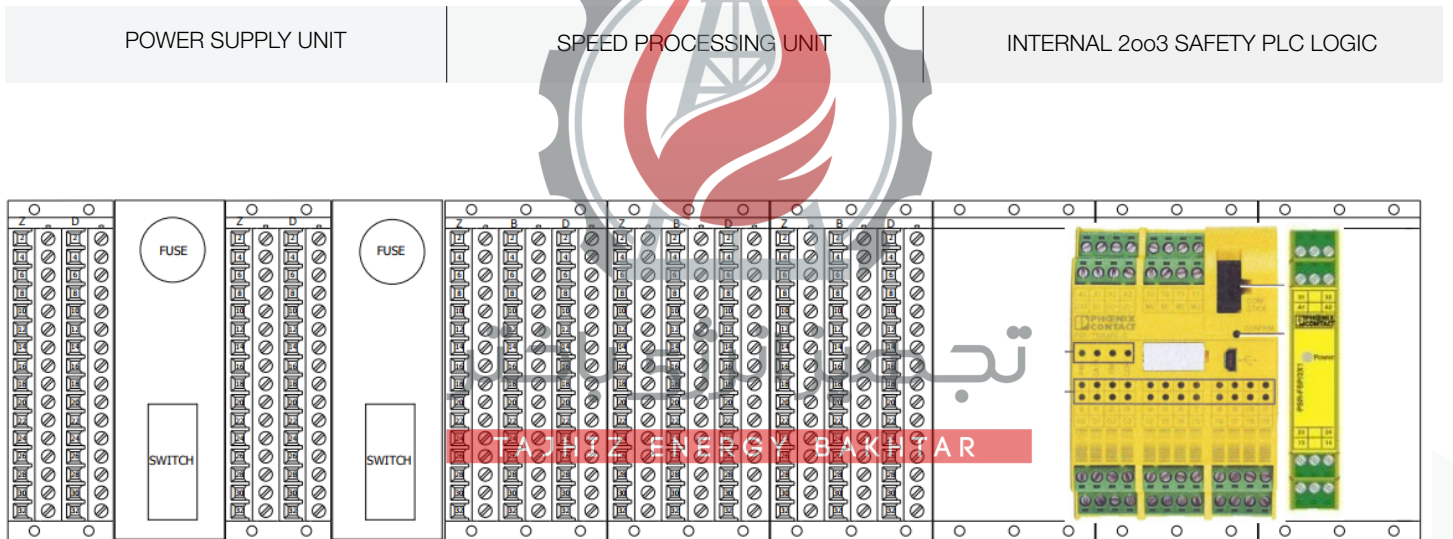


COMPOSITION OF THE SUPPLY

The Overspeed SIL3 protection module is composed by:



FRONT VIEW



REAR VIEW

SOFTWARE SETTINGS

The software allows the following system settings:

- Speed thresholds / set points
- Relay configuration
- Number of teeth of the polar wheel

ROTATING SPEED MEASUREMENT PROBES

The TDSP SIL3 Overspeed protection is certified to operate with the following types of probes:

Electromagnetic sensor T6-R



Material: Brass

Range: 1 ÷ 30 KHz

Thread: M22 x 1

Thread size: 60 mm

Temperature: -35 ÷ +105°C

Oil proof: Yes

Cable: length to be specified

Hall effect sensor T6-H



Material: Stainless Steel

Range: 0 ÷ 30 KHz

Thread: M14 x 1.5

Thread size: 90 mm

Temperature: -40 ÷ +120°C

Oil proof: Yes

Cable: length to be specified

Proximity Eddie Current Measuring Chain composition

Transducer T-NC/8-API

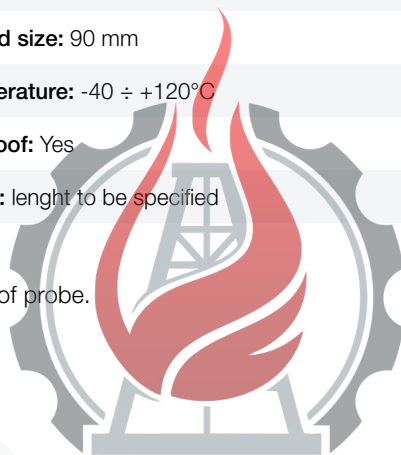


Range: 2 mm

Temperature: -35 ÷ +75°C

Din Rail mount: optional

Before to order it is necessary to indicate the type of probe.



تجهیز انرژی باختر

TAJHIZ ENERGY BAKHTAR

Pick-up ST-NC/8



Different probe dimension, body dimension, thread type and cable length are available under request

Tip diameter: 8 mm

Temperature range: 0 ÷ 180°C

Material: Stainless Steel

Oil proof: Yes

Optional

Not armoured

Armoured



Stainless steel armour cable: optional