OROS Xpod™ **Strain gauges conditioner**

Bridge conditioner extension module **OROS 3-Series analyzers**



For OR36 & OR38 Instruments	

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Main Features

- 8 ch. conditioner module for Wheatstone bridges:
 - o Strain gauges, Pressure.
 - o Load.

 - o Torque, o Force,

- 5 sec. docking on the analyzer side
- Built-in bridge completion resistors.
- Manage all bridge types.
 - Field operation flexibility: o Exchangeable,
 - o Both connections (BNC,
 - Bridge) available for each input.
- Rugged metal case.
- Compact design, easy to handle.
- Monitoring LED on each channel
- Automatic bridge balance (auto zero offset).
- Available on the OR362 and OR382 analyzers*.

* Requires optional features.

Specifications

- 8 inputs / Module.
- 120 Ω and 350 Ω built-in completion resistors.
- Full, 1/2 and 1/4 bridge interface.
- 0 to 10V excitation voltage.
- NVGate[®] or D-rec[™] auto zero.
- Compact design:
 - l: 300 mm / 12 " 0
 - w: 60 mm / 2.36 " 0 h: 25 mm / 1" 0
 - 0.4 kg / 0.180 lb. 0
- High (100) & low gain (10)
- Software setup
 - 100 % controlled by NVGate® 0
 - Multiple/ or individual 0 inputs setup
 - Save/Load preset 0 0

Gauges database

Introduction

Mechanical stress into machineries may lead to dramatic failure including total destruction. In the worst cases operators or passengers safety may be endangered in case of rupture. From the design to the residual lifetime evaluation strain measurements are essentials to validate the operational perimeter of machineries, installations and vehicles.

Gauges are used to measure the strain and then the stress applied to materials. Strain gauges also apply for pressure, load, torque and acceleration measurements due to their high sensitivity and temperature independance. They are used in R&D, qualification and rupture analysis steps of a machine/product life.

The applications are widely spread in petrochemicals (tank & pipe), transportation (suspension, traction, engines), aerospace (satellite, components, aircraft body) as well as in industrial machinery (basement, shaft support, turbine blades).

Wheatstone bridges used for strain, load, pressure and acceleration measurements require a specific conditioning. For dynamic analyzers it is usually external boxes that are uneasy to carry and install in the field. On the other hand some front-ends feature integrated conditioners but they lock a set of channels for bridge purpose only, reducing the flexibility of the instruments.

OROS proposes bridge conditioners for the OR36 and OR38 portable recorders/analyzers that are integrated in the Xpods modules.

Xpods are extension modules that can be locked on the latest 36₂ and 38₂ chassis.

They offer signal conditioning in a compact, integrated and rugged package.

The bridge Xpod features everything necessary to handle bridge-based sensors for strain, load, force, torque, pressure and acceleration measurements.



Bridge conditioner Xpod



Analyzer Setting Browser



Ordering Information

OR38-FREQ-32	OR38 ₂ , 32 ch FFT & recorder real-time analyzer
OR36/8-XPD-KT	Xpod connection kit for OR36 ₂ and OR38 ₂
OR3X-XPD-B&U	8 ch. bridge & universal inputs expander module
OR36-IN4-U	4 universal inputs for OR36
OR38-IN8-U	8 universal inputs for OR36









- Stress evaluation tank or pipe (compressed air, chemicals, gas).
- Diesels engine camshaft load measurements.
- Lifetime evaluation (inital & residual) on critical component.
- Dynamic load and stress on hydraulic cylinders and tubes.
- Vehicles damping, steering and breake systems stress measurements.
- Ship hull, crane and bridge dynamic load measurements.



Xpod[™] technology

OROS analyzers benefit from a field oriented design. For signal conditioning, 3-Series analyzers feature Xpods unstead of slots. This technology brings unrivalled flexibility, portability and robustness for vibrations measurements.

The Xpod modules can be added, removed and exchanged between the analyzers in a few seconds, making your analyzers 100 % adaptable on the field. Moreover, with the lateral side fixation, the classical BNC connectors are kept available to use the inputs with classical ICP/AC/DC/Float transducers.



Of course, as any OROS instrument and part, the Xpod offers high quality of design and manufacturing for both robustness and precision. Others Xpod type are avaliable to complete your ability to face other requirement see www.oros.com.

Bridge conditioner

The Bridge Xpod offers 8 parallel conditioners to be added to any block of analyzer inputs (1-8 or 9-16, etc..). When an Xpod is present on the analyzer, the bridge conditioning settings are available in the NVGate software. Like all the front-end ones, these settings are located in the ASB[™] which offers efficiency and clear setup of the instrument.

When activated, each Xpod channel can be set individually. The unused channels remaining available for classical use with the front-end BNCs.

All the necessary settings are offered including bridge type, completion resistor(s), offset, sensitivity, range and polarity channel by channel. The excitation voltage is user defined from 0 to 10 V commonly for the 8 ch. of the Xpod.

An automatic bridge balance*, with detection of bad connections completed with an auto range, supports the measurement efficiency and reliability on the field.

* Also avaliable with the stand-alone recorder: D-rec

- Dynamic load on train/truck structural and stabilization elements.

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