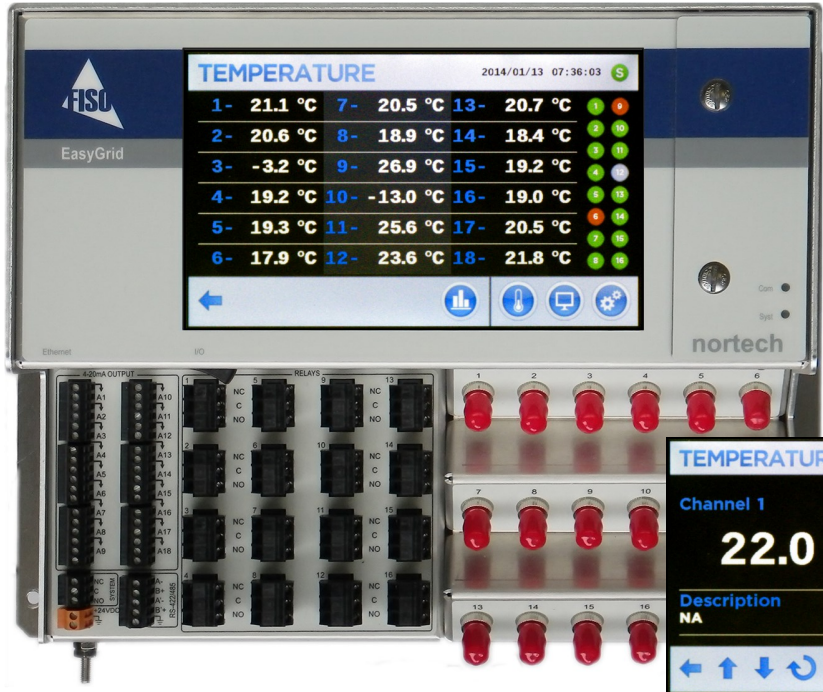




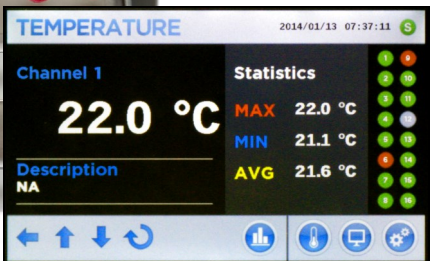
nortech

Nortech EasyGrid

ENERGY



MULTI-CHANNEL FIBER-OPTIC MONITOR / CONTROLLER FOR ENERGY APPLICATIONS



## Accurate, Reliable & Cost Effective Winding Hot Spot

### Description

The Nortech EasyGrid is the perfect complement to your Smart Grid. The fiber optic signal conditioner is designed for direct, accurate and real-time temperature monitoring to manage and maximize your transformer performance.

The EasyGrid provides critical information about the level of thermal stress and the management of the life cycle of any transformer or reactor. From an EHV/UHV, HVDC to a distribution transformer the cost-effective EasyGrid will meet the highest requirements.



A large 7" (800 x 480) Color Touch Screen LCD Display allows you to monitor and configure up to 18 channels and 16 form-C programmable relays. The graphical user interface makes it easy to customize to your needs.

The Nortech Client software allows full configuration and complete monitoring of your system. View all data logging information live on your PC without stopping the acquisition or downloading of any file.

For over 20 years, FISO has been the leader in the Fiber-Optic White-Light Technology. The EasyGrid is using the temperature dependent band gap shift of the GaAs crystal to provide a fast and accurate measurement. Inherent to the technology, the system will not drift nor require any recalibration and the monitor Auto-Correct feature continuously compensates for internal temperature effects.

Furthermore, internal monitor temperature data logging allows tracking of your control equipment during extreme environmental conditions.

### Key Features

- Real-time Temperature Monitoring
- 4 to 18 Channels, 1 Analog Output / Channel
- Large 7" Color Touch Screen LCD (800x480)
- 0, 8 or 16 Form-C Programmable Relays
- 4 GB Data Storage
- Modbus, Modbus TCP-IP\*, IEC 61850\*, IEC 60870-5-104\*, DNP3.0\*
- No Calibration Required
- Easy Front Panel Wiring
- Light Source Good for the Life of the Transformer
- Auto-Diagnostic & Auto-Correct
- Robust design & 5 Year Warranty

\* Optional

### Applications

- Power Transformer Winding & Core Hot Spot
- Power Transformer Top & Bottom Oil
- All types of Transformers (MV, HV, EHV, UHV, HVDC)
- Reactors, Generators, Switchgear
- Load Tap Changers



### Specifications

Number of channels	4, 6, 8, 9, 10, 12, 14, 16 or 18
Reading temperature range	-40 °C to 225 °C
Temperature accuracy	±1 °C
Resolution	0.1 °C
Sampling rate (per channel)	500 ms
Operating temperature	-20°C to 60°C
Storage temperature	-30°C to 85°C
Light source life	Life of the Transformer
Humidity	95% RH Non-Condensing
Display	Large 7" TFT Color display (800x480)
System Configuration	Touch Screen Panel or USB Remote
Security	Password Protection
Internal monitor temperature	CCD, Board & System Temperature Available with data logging

Communication ports	USB, RS-485, RS-422 & Ethernet (RJ45)*
Communication Protocols	Nortech, Modbus (ASCII / RTU), Modbus TCP-IP*, IEC 61850*, IEC 60870-5-104*, DNP3.0*.
Analog Output	4-20 mA, User Configurable
Relays	8 or 16 Form-C Relays, User Configurable Also Available without Relays
System fault relay	1 Dedicated System Fault Relay
System Status Indicator	LED
Memory	4 GB Memory & User configurable > 30 Years at 1 measurement/minute
Auto-Correct	Continuous Internal Temperature Compensation
Auto-Diagnostic	Light Level, Signal Level
Input Power	24 VDC
Power consumption	40W (maximum)
Surge Protection	4000V (IEEE C37.90.1 -2002)

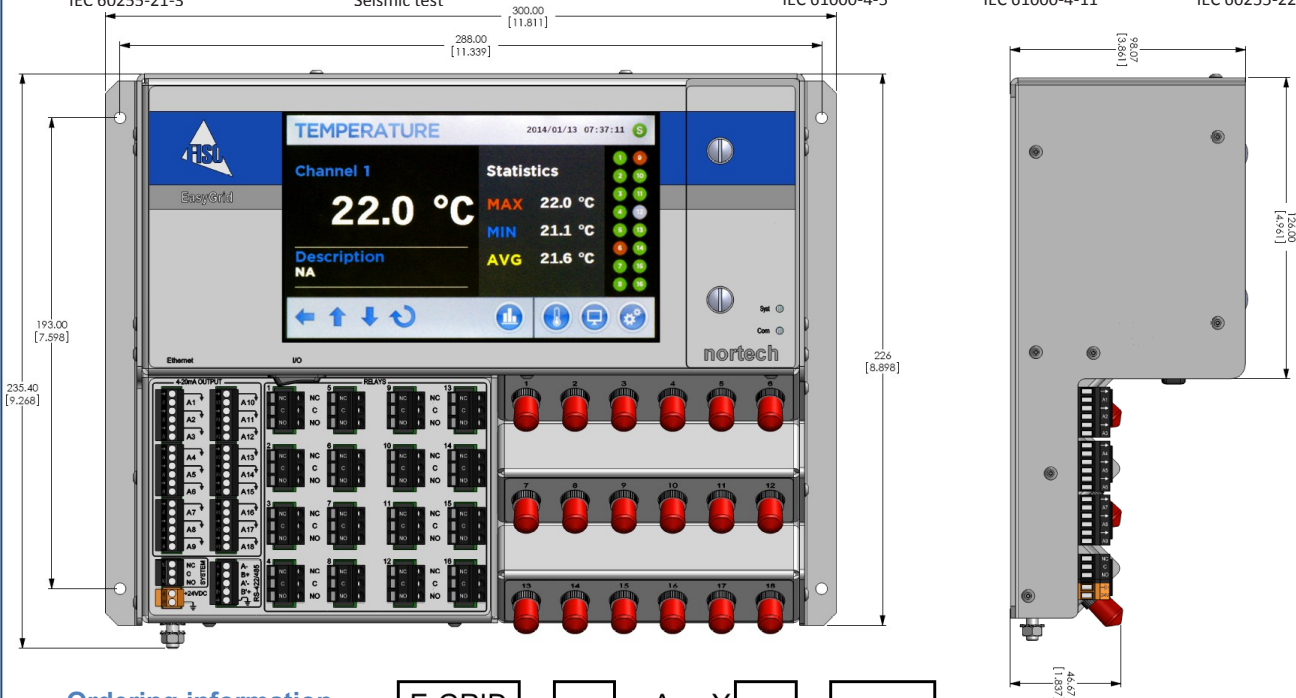
\* Optional

### Environmental standards

MIL-STD-810G	Transport vibrations
IEC 60255-21-1	Vibration: response , endurance
IEC 60255-21-2	Shock
IEC 60255-21-3	Seismic test

### Immunity standards

IEC 61000-4-2	IEC 61000-4-6	IEC 60255-22-3
IEC 61000-4-3	IEC 61000-4-8	IEC 60255-22-6
IEC 61000-4-4	IEC 61000-4-9	IEC 60255-5
IEC 61000-4-5	IEC 61000-4-11	IEC 60255-22-1



### Ordering information

**E-GRID** -  - **A** - **Y**  -

**Number of Channels**  
04, 06, 08, 09, 10, 12, 14, 16 or 18

**Number of Relays**  
00: 1 System Fault Relay  
08: 1 System Fault Relay + 8 Programmable Relays  
16: 1 System Fault Relay + 16 Programmable Relays

**Communication Options**  
STND: Standard  
DNP3: DNP 3.0  
1850: IEC 61850  
1870: IEC 60870-5-104  
MTCP: MODBUS TCP-IP

