

PF20 **NEW** FBG Data Logger

Electric noise immunity

+

Intrinsic safety

+

Transmission over long distance

+

Multiple points and variety types of measurement

Multi-functional optical sensing data logger to meet demanding requirements in applications where these factors are essential.



PF20 FBG Data Logger

PF20 is dedicated FBG multi-functional data logger features **“Conversion function into physical quantity, its data storage and display”** using touch screen interface for the easy configurations.



Design dedicated for easy field operation

Compact and lightweight. LCD touch screen interface enables immediate access to measurement status. Optical sensor signal can be converted into physical quantity and displayed.

* Conversion factor can be acquired from each SD card that comes along with PF20 to transfer to it.

Easy additional deployments of FBG sensor capacity

It accomplishes addition of FBG sensor deployments conveniently as a result of multiplexer to expand measurement channels up to 16CH.

Easy operation

Easy operation available through the use of “Install Navigation” system without complicated manual configuration.

Network communication ability

Capable of Wi-Fi connection (optional) in addition to LAN connection allows for command control and file transfer etc., to expand its network connection ability.

Higher sampling rate

Capable of data acquisition with 1 ms max. high sampling rate.

Various measurement modes

Various measurement modes are available represented by Triger function, Timer function etc.

FBG data logger features

● Support feature for FBG sensor installation: Install navigation



- It navigates FBG sensor installation through the use of “Install Navigation” which conventionally has been difficult to achieve by user.
- The feature achieves automatic optimization of configurations for installed FBG sensor without complicated manual configurations.
- The feature allows for high reliable measurement due to its capable of self-verification and diagnosis of installed FBG sensor.

● Variety of measurement features

Easy output recognition from FBG sensor

No/CH	Wavelength(nm)	Loss(dB)	Status
1 / 1	1530.353	- 3.6	●
2 / 1	1540.846	- 8.2	●
3 / 1	1551.111	- 11.7	●
1 / 2	1532.401	- 5.9	●

FBG wavelength

No/CH	Sensor ID	Status
1 / 1	ACCDFG20161012A	●
Output	100.356	Gal
FBG 1	1530.353	nm
FBG 2	-----	nm

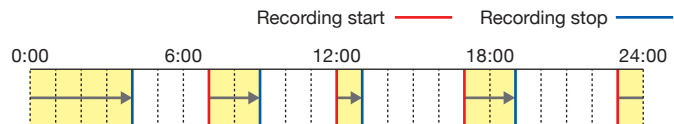
Physical quantity



Waveform

Timer function

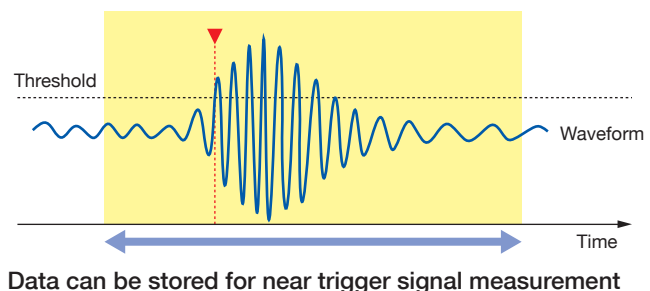
- Programmable timer
Maximum 4 parameters can be programmed for start time of measurement and measurement time.



- Interval timer
User can set measurement time and its interval.
ex:10 minutes measurement time every one hour interval.

Trigger function

Arbitrary FBG sensor output can be configured as a form of trigger output.



*User can measure timer function coupled with trigger function.

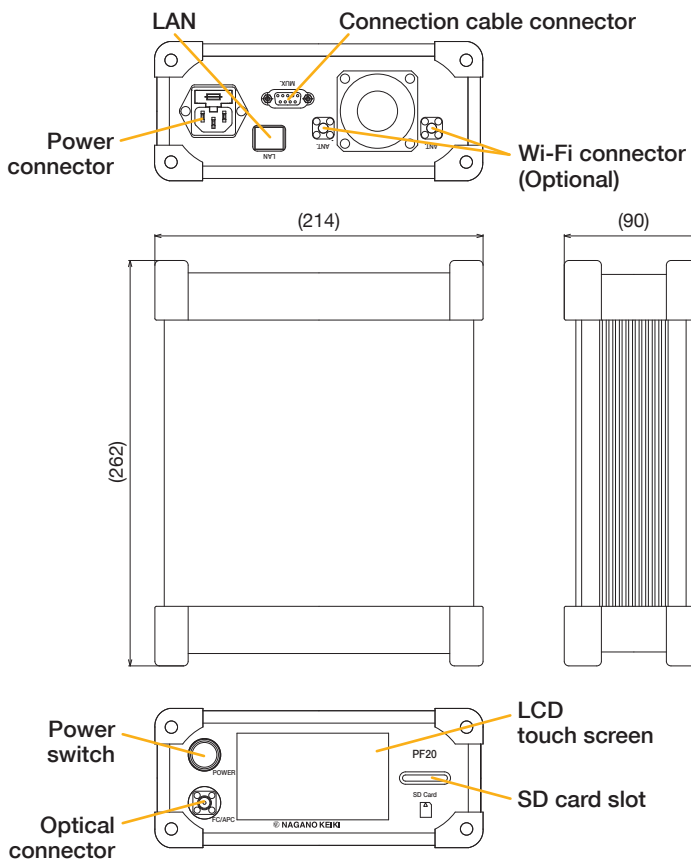
● Variety of interfaces

- LCD touch panel in full color allows operation without having PC at field.
- Wi-Fi connection is available in addition to LAN connection allows for field operation throughout PC and tablet-type device.
- It features FTP server for the file transfer in addition to TCP/IP socket communication to allow for data transfer from SD card.

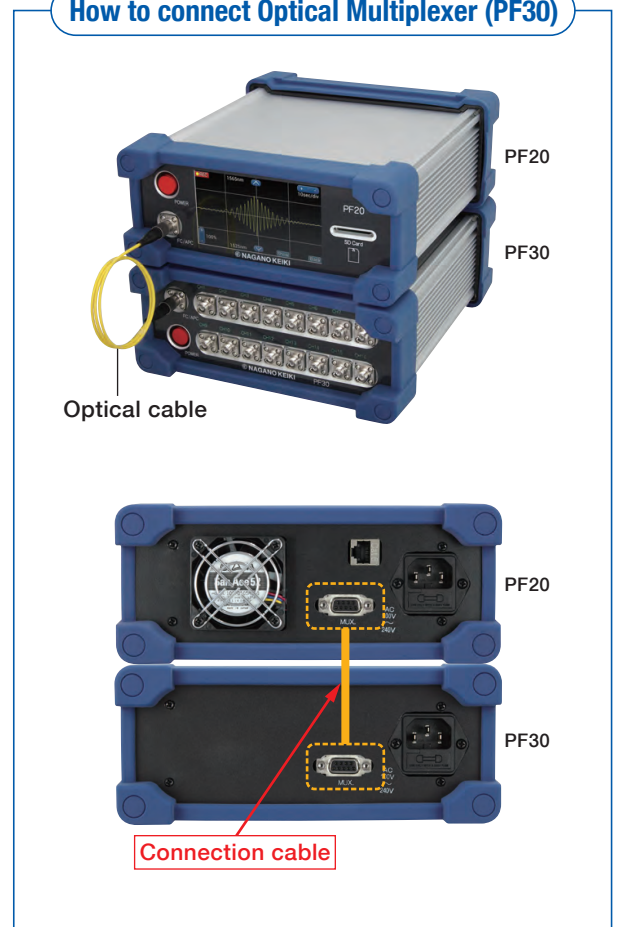
PF20 Specification

Specifications	PF20
Number of optical channel	1CH
Scan frequency	1Hz or 1kHz
Wavelength range	1530-1560nm
Wavelength stability	$<\pm 15\text{pm}$
Wavelength repeatability	$<\pm 3\text{pm}$
Optical connectors	FC/APC or SC/APC
Dynamic range	10dB
FBG recommendation	FWHM $<300\text{pm}$ SLSR $> 15\text{dB}$
Interfaces	LAN Wi-Fi (Optional)
Dimension	262(W) \times 214(D) \times 90(H)mm
Weight	2.8kg
Operating temperature	-10 to 50°
Storage temperature	-20 to 70°
Input voltage, Power consumption	100 to 240VAC, 7W
Data storage method	SD, SDHC(32GB max.) *Not included

PF20 Dimension



How to connect Optical Multiplexer (PF30)



PF30 Optical multiplexer

Optional

In conjunction with FBG data logger, it is possible for PF30 optical multiplexer to add measurement channels up to 16CH*.

*Sampling frequency available in 1Hz only

PF30 Specification

Specifications	PF30 (4CH)	PF30 (16CH)
Number of optical channel	4 CH	16 CH
Switch Frequency	1Hz or 1kHz	1Hz
Optical connectors	FC/APC or SC/APC	
Insertion Loss (2-way)	≤3.4 typ.2.4dB	≤2.8 typ.1.6dB
Dimension	262(W)×214(D)×90(H)mm	
Weight	2.4kg	
Operating temperature	-10 to 50°	
Storage temperature	-20 to 70°	
Input voltage, Power consumption	100 to 240VAC, 7W	

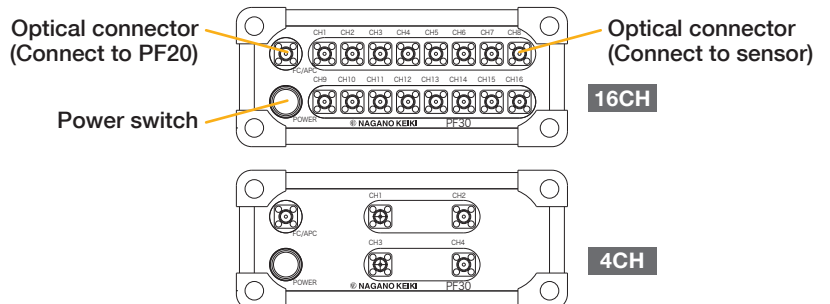
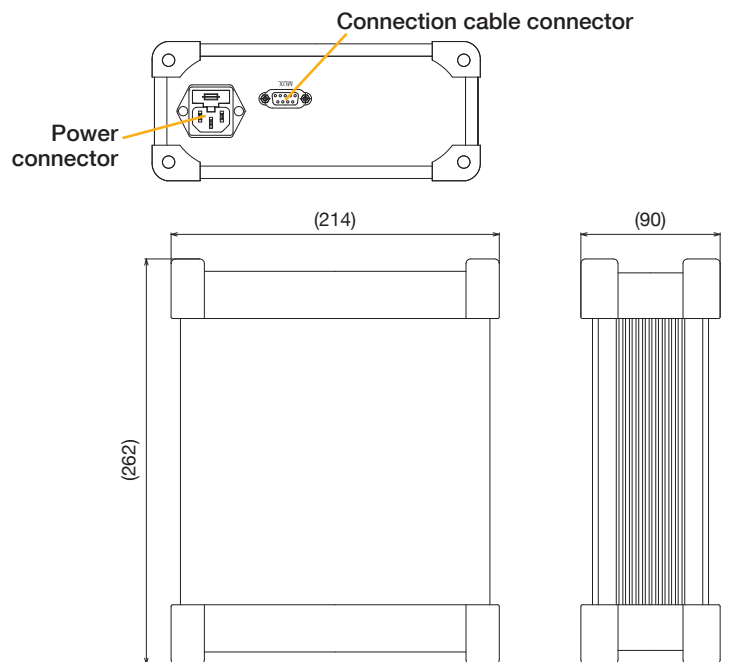
PF30 Dimension



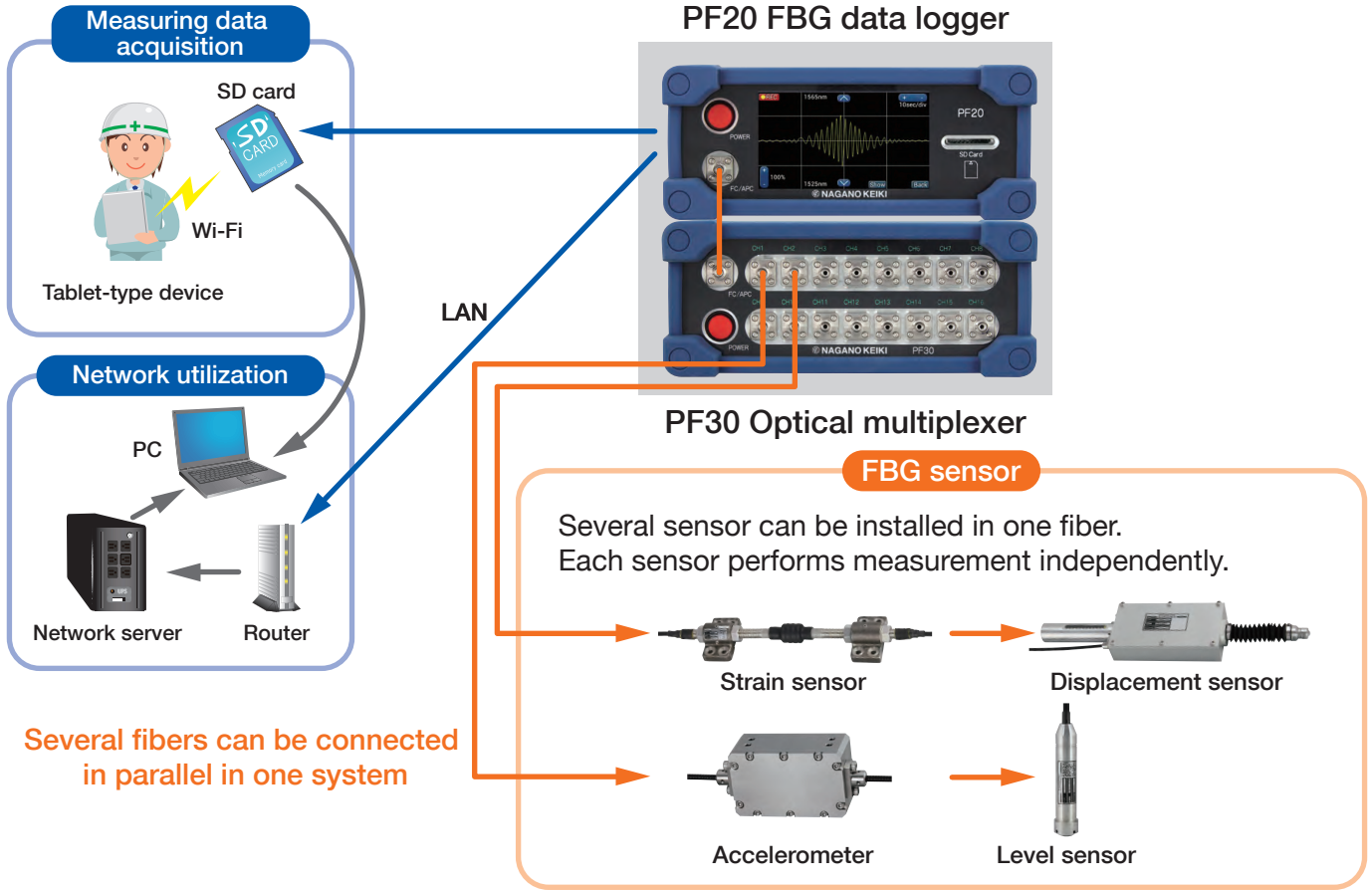
Front view



Rear view

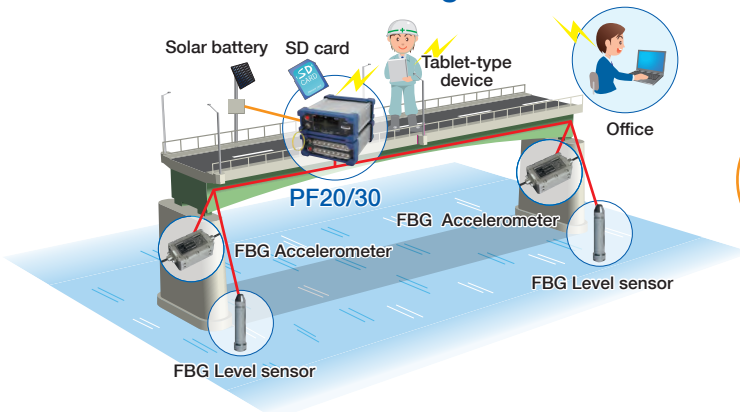


Example of measurement system configuration

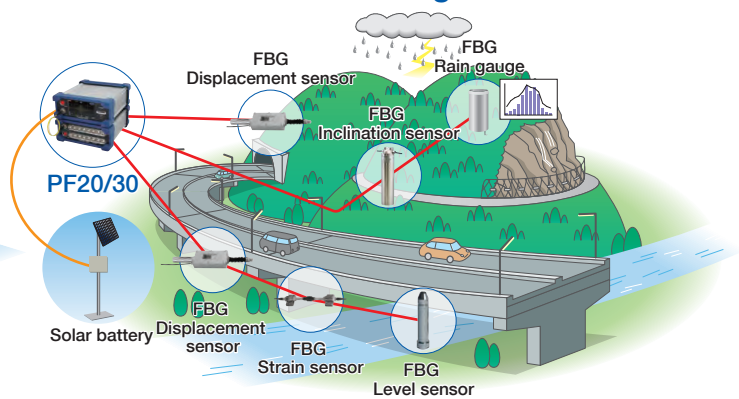


Examples of Application

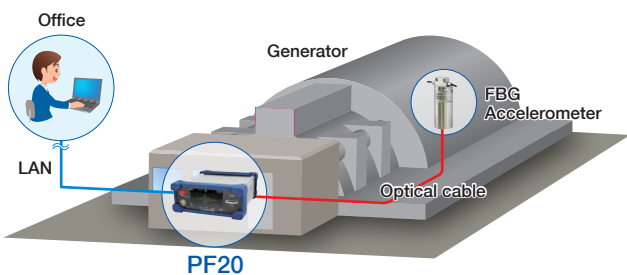
● Infrastructure monitoring



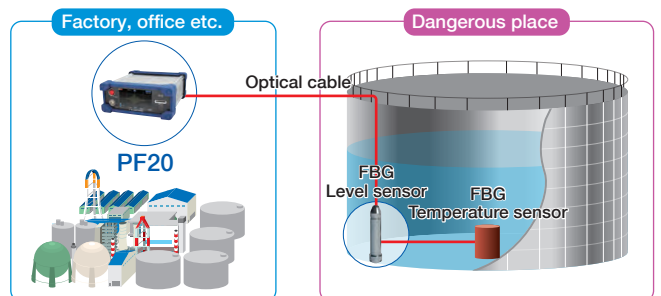
● Natural disaster monitoring



● Monitoring in power-generating plant



● Monitoring of tank status



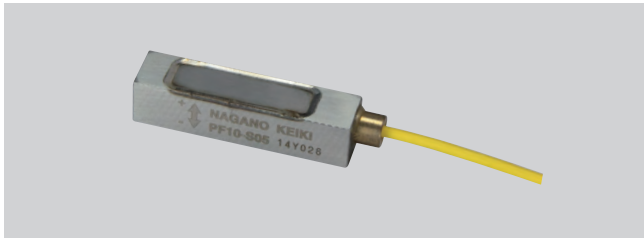
Naganokeiki's FBG sensor

Introducing physical quantity sensor consists of FBG sensor which achieves
“Electromagnetic immunity” “Lightning immune” “Intrinsic safety”

*Each sensor can be customized based upon customer's unique requirements.

*SD card which has unique conversion factor and data information comes along with each sensor.

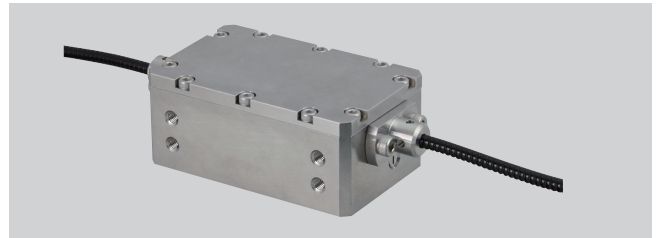
Accelerometer (High range)



Specification

Measurement range	±100G
Reference Sensitivity	12pm/G
Resonance Frequency	1200Hz
Operating Temperature Range	-20 to 90°C
Dimension	□9.5x40mm
Weight	Approx. 20g

Accelerometer (Low range)



Specification

Measurement range	±1G
Reference Sensitivity	1200pm/G
Resonance Frequency	150Hz
Operating Temperature Range	-20 to 60°C
Dimension	80x50x35mm
Weight	Approx. 1kg

Strain sensor



Specification

Measurement range	±2500μ strain
Reference Sensitivity	1.2pm/μ strain
Operating Temperature Range	-20 to 60°C
Dimension	350x70x35mm
Weight	Approx. 1kg

Level sensor



Specification

Measurement range	0 to 10m
Reference Sensitivity	0.3pm/mm
Operating Temperature Range	-20 to 60°C (Not freeze)
Dimension	ø30x160mm
Weight	Approx. 1kg

Displacement sensor



Specification

Measurement range	0 to 50mm
Reference Sensitivity	60pm/mm
Operating Temperature Range	-20 to 60°C
Dimension	370x75x35mm
Weight	Approx. 1kg

Inclination sensor



Specification

Measurement range	±3°
Reference Sensitivity	700pm/°
Operating Temperature Range	-20 to 60°C
Dimension	130x90x50mm
Weight	Approx. 1kg

Model number configuration For ordering, please specify the model number, each specs.

P F 2 0	—	0			—	2	×	×	×	×	×	×	×	×	×	×	×	×
FBG data logger		①	②	③		④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	

Model number		Selectable spec	Additional spec
②Interface	0	LAN	
	1	LAN+Wi-Fi	Wi-Fi antenna comes as standard
③Optical connector	1	FC/APC	
	2	SC/APC	
④Power supply	2	100VAC (100 to 240VAC)	Power supply cable comes as standard
⑮Document	0	Not required	
	1	Available in: •Submission drawing •Test report	

● Optional

P F 3 0	—	0			—	2	×	×	×	×	×	×	×	×	×	×	×	×
Optical multiplexer		①	②	③		④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	

Model number		Selectable spec	Additional spec
②Number of Channels	2	4ch	
	4	16ch	
③Optical connector	1	FC/APC	
	2	SC/APC	
④Power supply	2	100VAC (100 to 240VAC)	Power supply cable, PF20-30 connection cable and optical cable comes as standard
⑮Document	0	Not required	
	1	Available in: •Submission drawing •Test report	

*Please specify the document separately.
*Please contact us for special specification.

● Accessories (Optional)

• Cleaner for optical connector

Model number:PF20-902

• Optical cable (Length 500 mm)

Model number:PF30-910
SC/APC



Model number:PF30-911
FC/APC



• Wi-Fi antenna

• Wi-Fi cable

• PF20-30 connection cable

• Carrying case

For PF20 Model number:PF20-901
For PF30 Model number:PF30-901



The contents in the catalogue are subject to change without notice.

NAGANO KEIKI

NAGANO KEIKI CO., LTD.

URL : <http://www.naganokeiki.co.jp/>

HEAD OFFICE & OVERSEAS SALES DEPT

1-30-4, HIGASIMAGOME OHTA-KU, TOKYO, JAPAN.

PHONE : +81-3-3776-5328 FAX : +81-3-3776-5447

E-mail : overseas_sales_dept@naganokeiki.co.jp