

MARS™ Fiber Line

Provides high-speed data transmission to quickly and efficiently monitor wellbore conditions and prevent equipment failures

Applications

- Offshore and onshore wells, including remote locations
- High-pressure, high-temperature (HPHT) environments
- Multi-zone, intelligent, high-rate, and geothermal wells
- Remedial DAS and DTS surveillance in wells without existing fiber optic installations
- Through-tubing conveyance of MARS optical pressure and temperature (P/T) sensor
- Tubing integrity issues and leak detection
- Sand influx

Features and Benefits

- Optical downhole fiber line provides a high-performance signal pathway for downhole pressure, temperature, and seismic measurements.
- High-speed data transmission enables operator to quickly gather and interpret critical data to allow for prompt decision-making and rapid response to any potential issues.
- Highly sensitive fiber optic sensors enable the detection of subtle changes in wellbore conditions to optimize well performance and minimize downtime.
- Fiber optic cased-line technology provides unparalleled monitoring accuracy to prevent costly equipment failures or environmental incidents.

Tool Description

The Weatherford MARS fiber line provides a high-performance, high-speed signal pathway for downhole pressure, temperature, and seismic measurements to enable operators to collect and interpret critical data quickly and efficiently. The fiber line accommodates up to four single- or multi-mode fibers in any combination supporting distributed temperature sensing (DTS) and distributed acoustic sensing (DAS) while being able to monitor wellbore activity across the entire length of the fiber line in combination with the Weatherford optical P/T sensors.



The MARS fiber line provides operators with critical, high-speed data to interpret and quickly respond.



MARS™ Fiber Line

Specifications

Construction

Model	Extreme		Thermal
Cable size	1/4 in. (6.35 mm)		
Wall thickness	0.028 in. (7.112 mm)	0.035 in. (0.889 mm)	0.035 in. (0.889 mm)
Optical fibers	Up to 4 fibers ^a , single-mode or multi-mode		
Inner metal tube	304 stainless steel		
Buffer	AA1070 Aluminum		None
Outer armor tube: INCOLOY® 825* OD x wall	0.25 in. OD x 0.028 in. wall (6.35 mm OD x 7.112 mm wall)		0.25 in. OD x 0.035 in. wall (6.35 mm OD x 0.889 mm wall)

Mechanical Properties

Weight in air	0.1 lb-ft (0.1488 kg-m)	0.11 lb-ft (0.01637 kg-m)	
Working pressure	20,000 psi (1,379 bar)	25,000 psi (1,724 bar)	
Collapse pressure	>30,000 psi (2,068 bar)	>35,000 psi (2,413 bar)	>30,000 psi (2,068 bar)
Burst pressure	20,000 psi (1,379 bar)	25,000 psi (1,724 bar)	15,000 psi (1,034 bar)
Maximum tensile load	1,500 lb (680 kg)	2,000 lb (907 kg)	
Maximum splice-free length	27,000 ft (8,229 m)	10,000 ft (3,048 m)	

Environmental Specifications

Maximum operating temperature ^b	347°F (175°C)		572°F (300°C)
Minimum storage temperature	-40°F (-40°C)		
Pressure range	Atm to 20,000 psi (1,379 bar)	Atm to 25,000 psi (1,724 bar)	Atm to 20,000 psi (1,379 bar)

^a Thermal may have more fibers on a case-by-case basis. Custom optical fiber configurations can include any combination of single-mode or multi-mode optical fibers.

^b DTS temperature range will depend on optical fiber selection.

* Incoloy is a registered trademark of Special Metals Corporation.

