

## Multi-Sensor Memory Production Logging Tool (MPLT)

Since introducing the first MPLT into the North Sea in 1985 Expro have successfully logged hundreds of wells worldwide.

To meet industry demands for increased quality and flexibility at a cost effective price, Expro introduced the Multi-Sensor MPLT. This purpose built tool utilises state of the art components to provide a rugged tool with high accuracy and expanded memory capacity.

PL tools are able to operate in deviated or horizontal wells and have the capability to log all types of multiphase flow. They can be deployed via slickline, coiled tubing or e-line. Advanced telemetry allows the combination of tools including array type sensors.

### Applications:

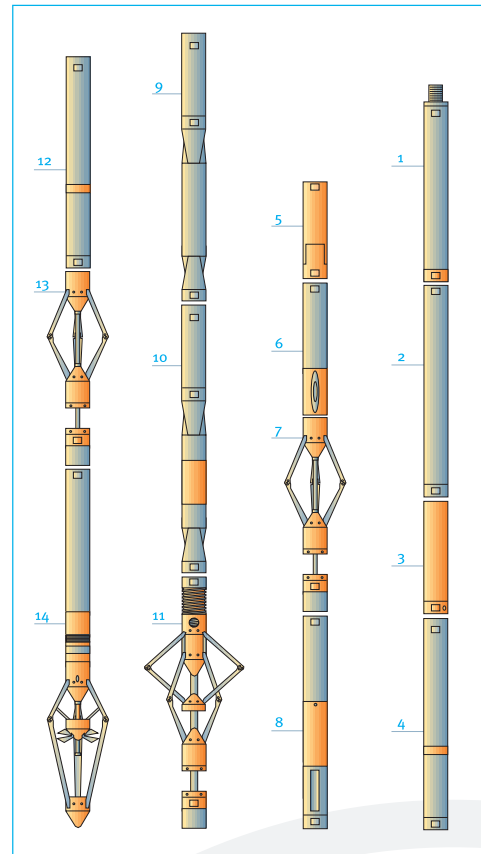
- Vertical, deviated or horizontal wells
- Determination of downhole flowrates
- Layering
- Zonal distribution
- Crossflow and leaks
- Multiphase flow

### Benefits:

- High resolution
- Portable for fast mobilisation, minimising rental period
- Accurate and reliable
- Can be run on slickline and coiled tubing
- Allows rapid decisions

### MS-MPLT Toolstring

Showing individual components and positioning.



1. Battery Housing (MS-MPLT)
2. MS-MPLT Memory Section
3. Pressure Tool
4. Casing Collar Locator
5. Knuckle Joint
6. Temperature Tool
7. Centraliser
8. Radio Active Fluid Density Tool
9. In Line Flowmeter
10. Capacitance Water Hold Up Tool
11. X-Y Caliper
12. Gamma Ray Tool
13. Centraliser
14. Full Bore Flowmeter

## Multi-Sensor Memory Production Logging Tool (MPLT)

### Technical Specifications:

#### Memory

Type	Non-volatile EEPROM
Size	Expandable up to 128Mb
Sample Rate	From 0.1 sec to several days
Data Set	Minimum of 30,000 on all channels
Length / OD	1.64ft / 1 <sup>11</sup> / <sub>16</sub> " (500mm / 43mm)

#### Full-bore Flowmeter

Size	Various for use in up to 9 <sup>5</sup> / <sub>8</sub> " (244.5mm) casing
Measurement Range	100 to over 30,000 bbl/day in 7" (177.8mm) casing
Length / OD	2.95ft / 1 <sup>11</sup> / <sub>16</sub> " & 1 <sup>1</sup> / <sub>2</sub> " (899mm / 43mm & 38mm)

#### In-line Flowmeter

OD	2 <sup>1</sup> / <sub>8</sub> " and 1 <sup>11</sup> / <sub>16</sub> " (54mm & 43mm)
Measurement Range	600 to over 60,000 bbl/day
Length	1.44ft (439mm)

#### CCL

Type	Passive
Length / OD	1.54ft / 1 <sup>11</sup> / <sub>16</sub> " (470mm / 43mm)

#### Gamma Ray

Type	Scintillation Crystal
Sensitivity	1 cps / API unit
Length / OD	1.93ft / 1 <sup>11</sup> / <sub>16</sub> " (587mm / 43mm)

#### Capacitance Array

Type	Capacitance
Number of Fluid Sensors	12 (1 sensor per spring bow)
Orientation Sensor	Indicates which sensor is "up"
Resolution	± 5% (dependant upon the distribution of phases in the wellbore)
Range	0-100% oil/water/gas
Length / OD	51.43"(1306mm) / 1 <sup>11</sup> / <sub>16</sub> " (43mm) (Spring bow fully closed)

#### Water Hold-up

Type	Capacitance
Measurement Range	0.01 to 1 (accuracy decreases at high values)
Length / OD	2.18ft / 1 <sup>11</sup> / <sub>16</sub> " (665mm / 43mm)

#### Pressure

Type	Shear quartz
Resolution	< 0.008 psi
Linearity	< 0.01% FS
Length / OD	1.02ft / 1 <sup>11</sup> / <sub>16</sub> " (310mm / 43mm)

#### High Resolution Temperature

Type	Platinum resistance
Accuracy	± 0.5°C (32.9°F)
Resolution	0.9°C (33.6°F)
Length / OD	1.04ft / 1 <sup>11</sup> / <sub>16</sub> " (318mm / 43mm)

All sensors are rated to 150°C

#### Radioactive Fluid Density

Type	Radioactive source
Length / OD	1.92ft / 1 <sup>11</sup> / <sub>16</sub> " (584mm / 43mm)
X-Y Caliper	
Type	4 arm
Length / OD	3.13ft / 1 <sup>11</sup> / <sub>16</sub> " (953mm / 43mm)