

DOMINO[®] USS **doble[®]**

ULTIMATE SAMPLING SYSTEM

Domino USS is a portable combination system, consisting of either a moisture-in-oil sensor or a moisture-in-gas (dewpoint) sensor or both, mounted in a handy carrying case, it provides a fast, convenient way to take high-quality samples

New **Domino USS** gives you a fast, convenient way to measure water content in oil – or the dewpoint of a gas – while you're performing other field tests. Easy to use, it is also a highly effective way to insure quality samples: the moisture-in-oil ppm or dewpoint reading on the **Domino USS** will not stabilize until all the excess moisture has been removed from the valve, ensuring that the valve or access point was adequately flushed prior to sampling. The real time graphic display allows instant monitoring of the stabilization procedure.

The result? Doble's **Domino USS** makes quality sampling simple and easy.

DOMINO USS Benefits:

- Streamline your sampling process
- Save time in field testing
- Buy only what you need now, and extend the product later

DOMINO USS Features:

DOMINO USS is a portable moisture-in-oil sensor that is connected to an indicator, which is equipped with a convenient rechargeable battery and also operates on AC voltage.

Lightweight, portable DOMINO USS

- Sensor mounts easily to a transformer valve or other oil-filled electric device for instant readout of water content in ppm
- Quick-connect fittings let you connect to the valve quickly and easily
- Two probes can be connected to the same indicator simultaneously, with the indicator automatically recognizing both probes and the types of probes that they are: (moisture-in-oil or dewpoint)

Save time in field testing

The simplicity of the process means time savings for you. As oil flows past the sensor in the brass manifold, the ppm of the water in the oil and the temperature of that oil are measured automatically. It only takes about 2-3 minutes to attach the adapters, and just a few more minutes to get a stable reading once oil is flowing.

Technologically advanced system lets you:

- Gather high-quality moisture-in-oil samples during other field tests
- Analyze four different oil types, each with the press of a button:
 - New and in-service transformer oil
 - Very aged transformer oil (>0.18mg KOH/g)
 - Silicone
 - Natural Esters (Vegetable Oil Dielectrics)
- Get accurate results in six minutes or less

Transformer Installation

Just imagine all the tools you need to monitor a transformer installation in one place. With the USS complete you can perform the following:

- Monitor the dewpoint of the interior atmosphere of the incoming transformer
- Monitor the dewpoint of the vacuum, dry air, nitrogen, and other inert gases
- Unlike other dewpoint sensors, our sensor is immune to oil vapor
- Monitor the oil filling process by being able to measure the incoming and outgoing oil from the processing trailer

TOGETHER WE POWER THE WORLD[®]



Buy just what you need now, and expand later

Domino USS lets you begin with a basic kit and add to it as your needs evolve.

modular, multi-option structure:

- Begin with a **Domino USS** kit: either for moisture-in-oil or dewpoint; plumbing fittings for connecting to transformers or other apparatus; handheld indicator, with rechargeable battery and AC adapter
- Add a moisture-in-oil oil probe
- Add a dewpoint probe with sampling manifold

Domino USS Ordering Information:

1. Moisture-in-oil USS – comes with rechargeable indicator, one (1) moisture-in-oil probe, quick-connect brass sampling manifold, plumbing connections, tools, and accessories housed in a small tool box inside a larger durable case with oil resistant foam and instructions
2. Dewpoint USS – comes with rechargeable indicator, one (1) dewpoint probe with a stainless steel sampling manifold, tools, and accessories housed in a small tool box inside a larger durable case with oil resistant foam and instructions
3. USS Complete – comes with rechargeable indicator, two (2) moisture-in-oil probes, quick-connect brass sampling manifold, one (1) dewpoint probe with sampling manifold, plumbing connections, tools, and accessories housed in a small tool box inside a larger durable case with oil resistant foam and instructions
4. Options – Additional moisture-in-oil probe(s)
Additional dewpoint probe(s)
10m long probe cable extension



DOMINO® USS Technical Specifications



Handheld Indicator:

Operating and Mechanical Parameters:

Humidity	0 to 100%RH, non-condensing
Temperature range	-10 to 40°C
Languages	English, Finnish, French, German, Spanish, Swedish
Display	Backlit LCD Character height up to 16mm
Probe inputs	1 or 2
Power supply	Rechargeable NIMH battery pack with AC power or 4 x AA size alkalines, type IEC LR6
Analog output	0 to 1 VDC
Output resolution	0.6mV
Accuracy	0.2% full scale
Temperature dependence	0.0002%/°C full scale
Minimum load resistor	10 kohm to ground
Date interface	RS232C (EIA-232)
Data logging capacity	900 to 2700 real time data points
Logging interval	1s to 12h

Logging duration	1 min to memory full
Alarm	Audible alarm function
Housing classification	IP 54
Housing material	ABS/PC-Blend
Housing weight	400g
Storage temperature	-40 to 70°C
Storage humidity range	0 to 100% RH, non-condensing

Battery pack:

Operation times	48h typical at 20°C continuous use
Operation times	Up to 30 days data logging use
Power consumption	10W maximum during charge
Charging time	4h



Moisture-In-Oil Probe Option

Measured Variables:

Relative Saturation (RS)	0 to 100% (-40 to 60°C)
Temperature Measurement	-40 to 100°C
Parts per Million of water	calculated (ppm w/w)

Sensor Types:

Water Sensor	Thin film polymer
Temperature*	Pt 100 RTD 1/3 Class B IEC 751

Sensor Accuracy:

RS: Accuracy (including nonlinearity and repeatability)	(0-90% range), ±1% RS (90-100% range), ±2% RS
Temperature at 20°C	±0.1°C

Mechanics:

Pressure range of sensor head (probe)	0-20 bar (0-290 psi)
Operating temperature range	-40 to 60°C
Sensor protection grid	Stainless steel
Probe head diameter	12mm
Housing classification	IP65 (NEMA 4)
Electronics housing material	APS/PC-Blend

Probe material	Stainless steel (AISI316L)
Probe cable length	1.9m
Extension cable (option)	10m
Weight of probe assembly	520g



Dewpoint Probe:

Measured Variables:

Dewpoint	-70 to 30°C
Temperature Measurement	-10 to 60°C
Gas types	Air, nitrogen, inerts, SF ₆

Sensor Types:

Water Sensor	Thin film polymer, 180M
Temperature	Pt 100 RTD 1/3 Class B IEC 751

Sensor Accuracy:

Dewpoint	±2°C full scale
Temperature at 20°C	±0.2°C

Mechanics:

Pressure range of sensor	0-20 bar (0-290 psi) head (probe)
Operating temperature	-10 to 60°C range
Sensor protection	Stainless steel sintered filter
Connection	G1/2 inch, ISO228-1 thread with bonded seal ring
Housing classification	IP65 (NEMA 4)
Electronics housing	APS/PC-Blend material
Probe material	Stainless steel (AISI316L)
Probe cable length	1.9m
Weight of probe assembly	350g
Sampling Cell	included, stainless steel

Specifications are subject to change without notice.

For more information, contact
DOMINO@doble.com



Doble Engineering Company

85 Walnut Street
Watertown, MA 02472 USA
tel +1 617 926 4900
fax +1 617 926 0528

Doble is certified ISO 9001:2000

MKT-SL-DOMINO.USS-04/07