

SPECIFICATIONS

Recorder Unit

Measuring system		Ultrasonic echo sensing system				
Recording system		DM-604	Direct recording in four directions (X-X' and Y-Y')			
Recording paper		Electrosensitive recording paper 250 mm x 20 m (DMP-250)				
Measuring range (radius)	Shift	0%	0 to 0.5 m	0 to 1.0 m	2.0 m	4.0 m
		50%	0.25 to 0.75 m	0.5 to 1.5 m	1.0 to 3.0 m	2.0 to 6.0 m
		100%	0.5 to 1.0 m	1.0 to 2.0 m	2.0 to 4.0 m	4.0 to 8.0 m
Paper feed rate	Constant speed	7.5 mm/min, 15 mm/min, 30 mm/min and 60 mm/min				
with the depth	Synchronized	1/40	25 mm/m of sensor up/down movement			
		1/50	20 mm/m of sensor up/down movement			
		1/100	10 mm/m of sensor up/down movement			
		1/200	5 mm/m of sensor up/down movement			
Measuring accuracy		±	2% at full scale			
Depth mark		A depth mark is printed every 1 m and depth is automatically printed numerically every 5 m				
PC display and storage		Serial data output provided (RS 232C cable: option)				
Power supply protection circuit		Equipped with two built-in non-fuse breakers (2 A and 8 A), a leakage breaker (20 A) and an overvoltage protection circuit				
Power supply		100 VAC, 50/60 Hz	110 VAC, 50/60 Hz	220 VAC, 50/60 Hz	440 VAC, 50/60 Hz	
Power consumption		500 VA (At 100 VAC)	700 VA (At 110 VAC)	700 VA (At 220 VAC)	700 VA (At 440 VAC)	
Operating temperature		-10°C to +50°C (14°F to 122°F)				

Winch Unit

Up/down speed	0 to 20 m / min
Up/down movement distance	100 m maximum
Bottom and casing sensing system	Automatic sensing by limit switch
Operating temperature	-10°C to +50°C (14°F to 122°F)

Standard Configuration

Recorder unit	DMR-604 (DM-604)	Contained in an aluminum box	47 kg
Power supply (Built into Recorder unit)	DMT-000	For 100 VAC, contained in an aluminum box	10 kg
	DMT-001	For 110 VAC, contained in an aluminum box	10 kg
	DMT-002	For 220 VAC, contained in an aluminum box	10 kg
	DMT-003	For 440 VAC, contained in an aluminum box	12 kg
Winch unit	DMW-002A (DM604)	With a sensor unit and cable	121 kg
Connecting cable	CW-558	With 15-pin connectors	10 m
AC power cable	CW-71	With 3-pin connectors	10 m
Spare parts kit		Included in Recorder unit	1 set
Operation manual	93170152	Contained in Recorder unit	1
Brief operation	for DM-604	Contained in Recorder unit	1

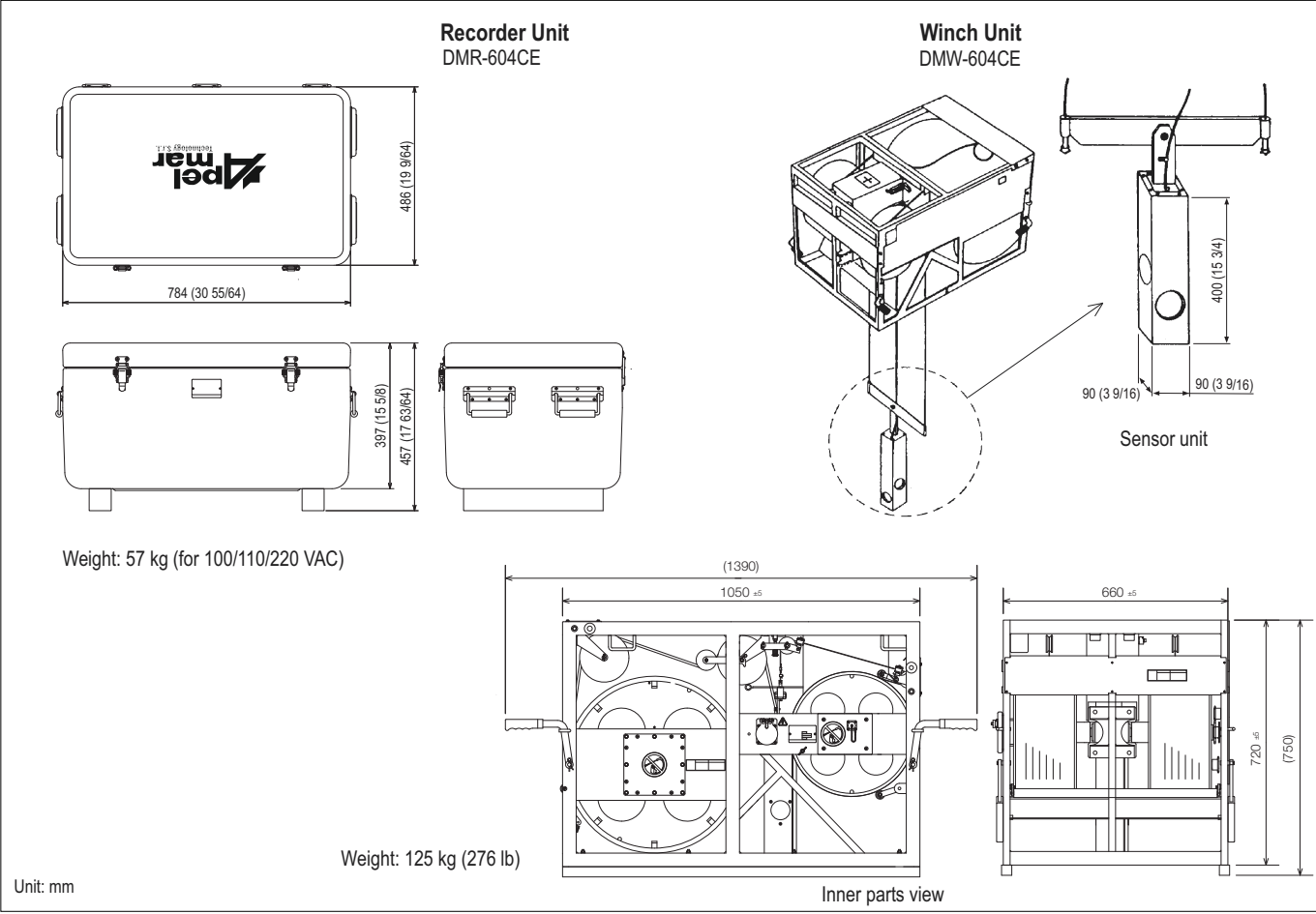
Spare Parts List

Recording paper	DMP-250	250 x 20 mm (A3-560)	2
Recording stylus	DMS-001	Included in a vinyl bag	2
Current feed stylus	DMS-002	Included in a vinyl bag	2

Optional Item

RS 232C output port	CW-384	Output connector: D-Sub 25 pin	
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DIMENSIONS AND WEIGHT

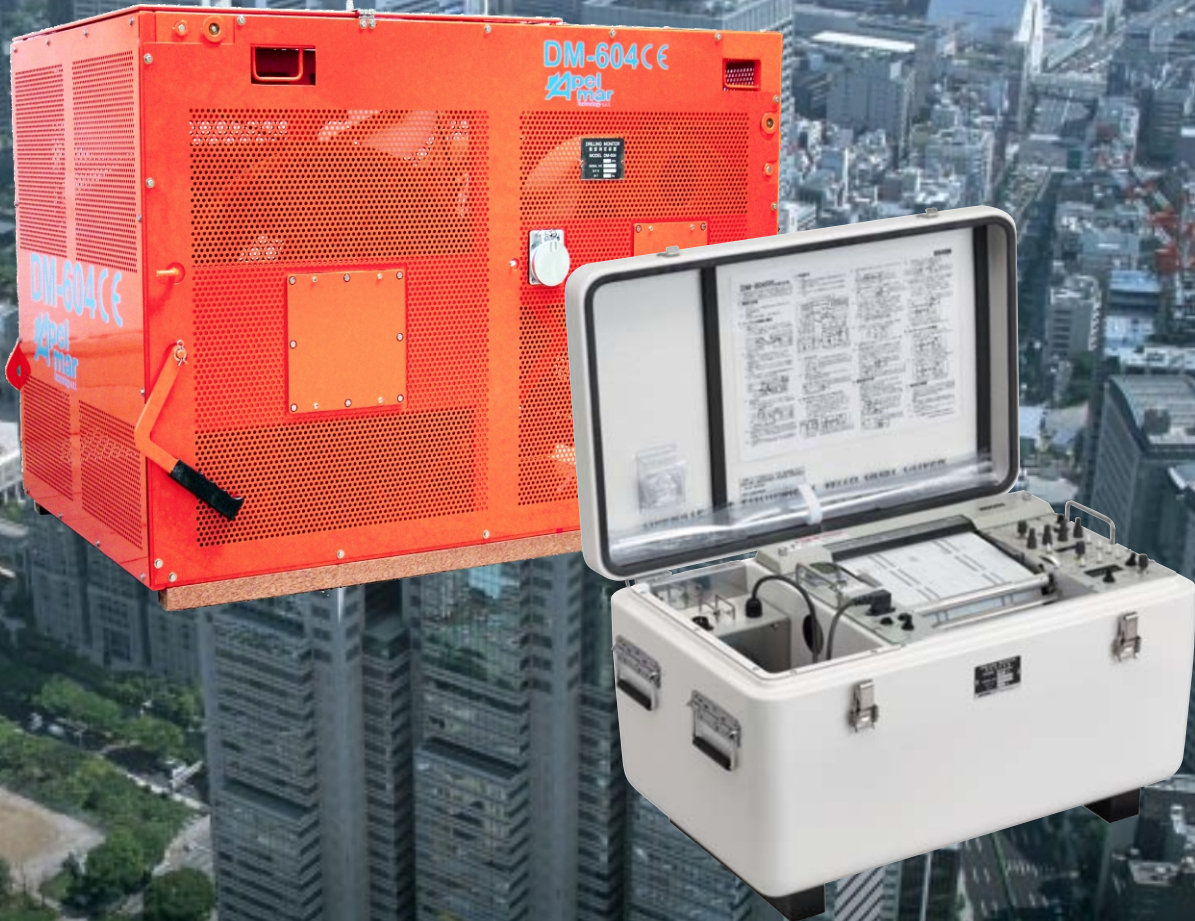


Ultrasonic Drilling Monitor

DM-604




High quality measurements tests in foundation works.



- Deeper excavation measurement in high accuracy
- Clear recording even in slurry contaminated with dirt and sand
- High quality excavation work reducing time and cost

www.koden.it/dm-604ce

**Safety**
precaution

To ensure proper and safe use of the equipment, please carefully read and follow the instructions in the Operation manual

For details, please contact:

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www.koden.it/dm-604ce

DM-604CE helps improving the quality of drilled holes and reduces working time and costs !

General

Recent progress and development in foundation engineering has resulted in great strides in excavation techniques. By using artificial slurry of high density and specific gravity, deeper excavation has been made possible. The DM-604CE Drilling Monitor system has been developed in compliance with the user's needs arisen from the recent construction environment to accurately measure and record the shape of a drilled hole of greater depth. It can be easily positioned and set up for measurement to provide quick and accurate recordings of excavations. The DM-604CE Drilling Monitor provides the following advantages.

- Helps improve the quality of a drilled hole and reduces working time and cost.
- Provides on site records of the perpendicularity of drilled holes and the shape of cross sections in high accuracy.
- Provides numerical measurement data that can be easily exported to various Windows applications (Excel, Word, PowerPoint, etc.) for work reports, etc. (Option)

Features

- DM-604CE supplies clear records of a drilled hole even in slurry, heavily contaminated with dirt and sand.
- DM-604CE supplies clear and precise records thanks to its unique signal processing technique that discriminates wall echoes from the noise.
- DM-604CE has the facility to cancel the oscillation line echo that often prevents very close echo recordings.
- The sensor device is automatically controlled to stop at the casing and at the bottom of the hole. An emergency return function is also included.
- Depth range mark, depth mark, drilled hole mark, date, time, etc. can be printed on the recording paper.
- Limit switches are provided to avoid possible wire breakage or entanglement of the wire and cable.
- The recorded result can be output to an external PC via a built-in RS 232C output port. (Option)
- A non-fuse circuit breaker is used for circuit protection, eliminating the need for cumbersome fuse replacement at the construction site.



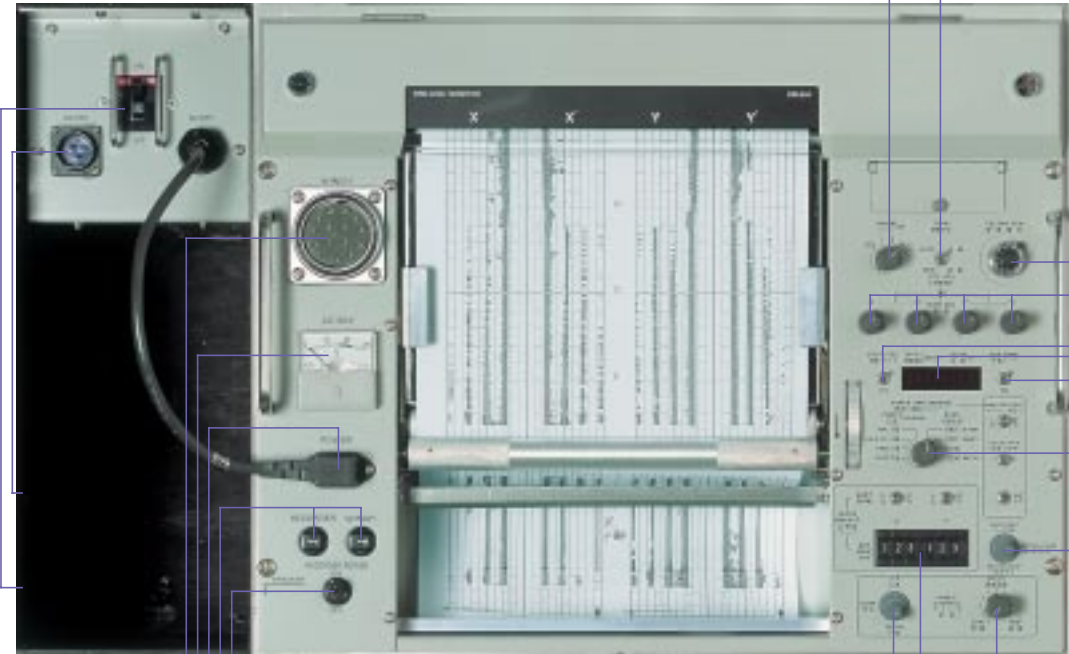
The winch unit and recorder unit on site



Recording the echo of a drilled hole

Main controls/switches

(Photograph shown is DM-604 operation panel)



WINCH connector

Voltage meter

POWER connector

Non-fuse breaker

RECORDER

POWER switch

UP/STOP/DOWN switch
Used for selecting sensor movement between up, down or stop.

WINCH UP/DOWN SPEED control
Used for controlling the sensor up or down speed (turning it to the right increases the speed).

DRILLING HOLE MARK WIDTH switch
Used for setting the reference value (diameter) of the drilling hole on the wall face (in cm).

RANGE switch
Used for switching the measuring range (radius) in four steps of 0.5 m, 1 m, 2 m and 4 m

GAIN switch
Used for switching the gain control method to AUTO or MANUAL

CALIBRATION control
Used for calibrating the distance between the sensor and the wall face to the actual measured distance.

STC control (outer control)
Used for adjusting or eliminating irregular reflections near the oscillation line.

GAIN control (inner control)
Used for adjusting the receiving gain.

DEPTH RESET switch
Used to reset the depth record to 0 m.

SPEED/DEPTH display window
Used to display the speed and the depth of the sensor.

MANUAL MARK switch
As long as it is set to ON, the manual mark is recorded on the recording paper.

PAPER SPEED switch (MENU)
Used to change the paper speed in 4 steps in CONSTANT and PROPORTIONAL speed modes.

DATA PRINT/RECORD START & STOP switch
Used to start and stop recording as well as print text data.

Recording Examples

DM-604CE (4 axis simultaneous recording)

