

# Technical Datasheet

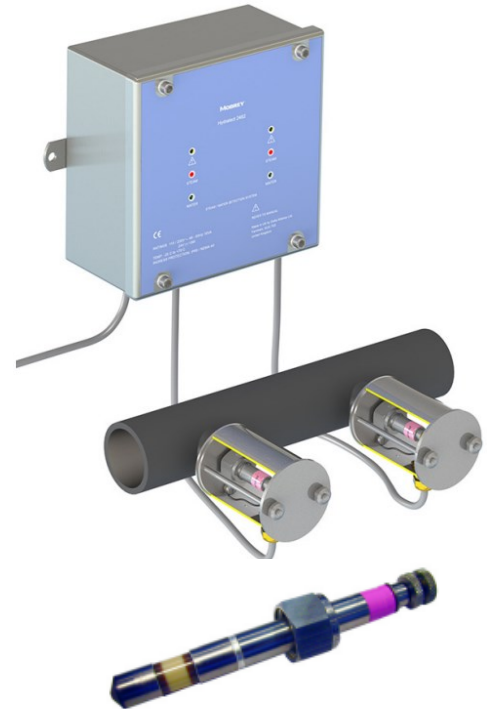


## Hydratect 2462

### Steam and Water detection

#### Key Features

- Highly reliable solution for water detection in steam lines
- Two channels, for use with two electrode inputs
- LED status indication, relay status output
- LED fault indication, relay fault output
- No fault can go undetected
- Contamination indication for preventative maintenance
- For use to 560 °C (1040 °F) and 300 Bar (4350 PSI)
- FM approved for boiler level control



#### Series Overview

The Hydratect electronic water and steam detection system is designed as an electronic alternative to conventional water level switches for steam raising plant.

It can be used in a wide variety of situations wherever the detection of water or steam is vital for safe and efficient plant operation. The Hydratect 2462 control unit provides signal processing for two electrodes. Each channel monitors the status of its associated electrode. Four conductors are used between the control unit and each electrode so it can differentiate between steam, water, short-circuit and open-circuit.

A green LED indicates water, a red LED indicates steam, and an amber LED indicates a fault condition. Each channel has a status relay to indicate water or steam, and a fault relay which will de-energise on a fault condition. The two channels are completely independent having separate power supplies, signal processing and fault detection. The relay outputs can be externally wired for a 'one out of two' or 'two out of two' tripping scheme.

#### Other products

Other products we can offer :

- Hydrastep for water and steam detection
- Boiler Level Controls
- D Series Differential Pressure transmitter



#### Product applications

- An electronic alternative to mechanical float level switches
- Drain or condensate pots level detection
- TWIP (Turbine Water Induction Protection)
- As part of an ASME TDP1 compliant system
- Steam drum or de-aerator drum high and low level alarms or trips

#### How can we help you?

Delta Mobrey offers fast, efficient and knowledgeable support when and where you need it. Please visit our website at [www.delta-mobrey.com](http://www.delta-mobrey.com) to find your local support centre or call us on: **+44 (0)1252 729140**

Hydratect: Steam & Water Detection

Model: 2462

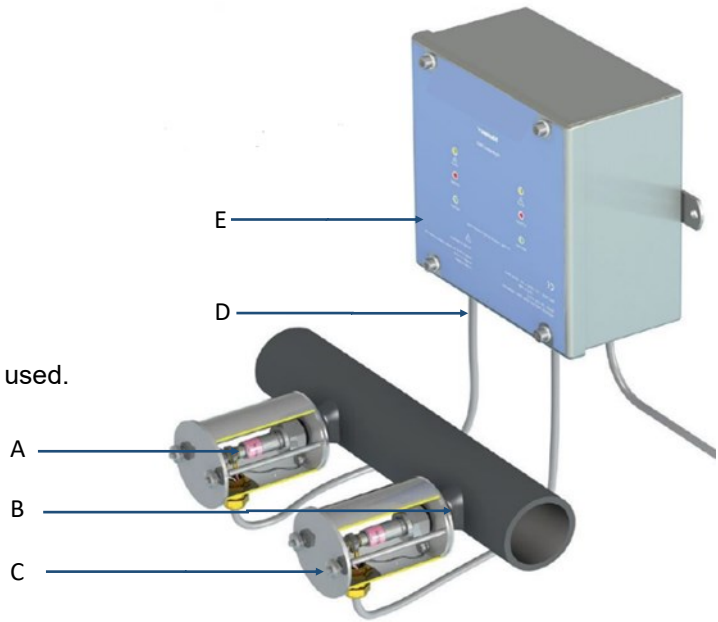
## Hydratect 2462: How to order

A two channel Hydratect is a system comprised of

- A) A pair of Electrodes
- B) A pair of inserts (or an optional manifold)
- C) A pair of protective covers
- D) A pair of cables
- E) A single control unit

Alternatively, a single channel system can also be used.

*Please use the tables below to configure a system to suit your needs. Contact our Sales engineers if support is needed.*



### A) How to order Electrodes

The electrode must be selected to match the application conditions. Refer to the tables below.

2	4	6	7	8	5	*
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Electrode part number  
Table 1

Electrodes	TABLE 1	2	4	6	7	8	5	*
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Description	Code
Super critical electrode, Swagelok style union (gasket not required) Maximum pressure 300 bar, maximum temperature 560°C, ZTA insulator, 7/8" thread, pH range 7-11	A
Super critical electrode, Swagelok style union (gasket not required) Maximum pressure 210 bar, maximum temperature 370°C, Zirconia insulator, 7/8" thread, pH range 7-11	Z

### B) How to order inserts

Inserts are needed when installing electrodes into pipework. One insert is needed for each electrode. Inserts are SS316, with 7/8" thread and are suitable for 300 bar and 560°C

Electrode insert

Description	Code
Electrode insert (one needed for each electrode)	24673540B

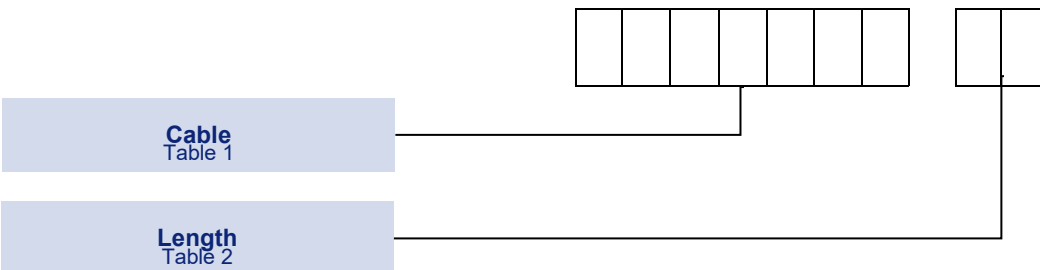
### C) How to order Electrode Covers

Covers are held in place by the electrode, and protect the electrode from damage  
Covers are Stainless Steel with an M16 gland

<b>Electrode cover</b>	Description	Code
	Electrode cover (one needed for each electrode)	24670118A

### D) How to order Cables

High temperature resistant multicore cables. Once cable is needed for each electrode.  
One end fitted with ring crimps for connecting to electrodes, the other end unterminated for cutting to required length.



<b>Electrode cable</b>	TABLE 1		

Description	Code
Hydratect 4 core cable (one cable needed for each electrode)	2462020

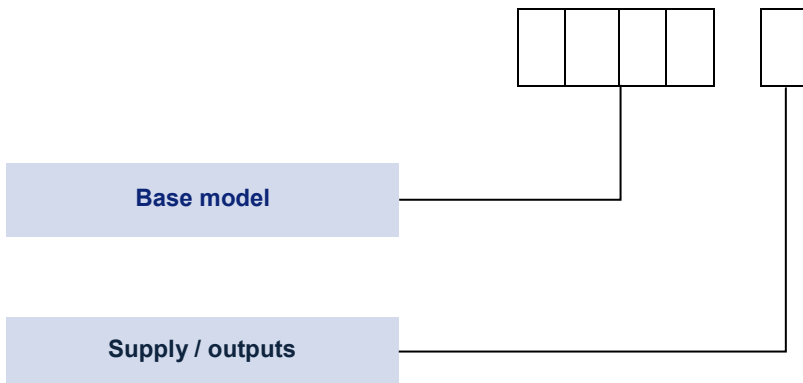
<b>Cable length</b>	TABLE 2							

Description	Code
3 metre (10 ft) 4-core cable	4A
10 metre (33 ft) 4-core cable (for up to 8 electrodes)	5A
18 metre (60 ft) 4-core cable (for up to 8 electrodes)	6A
30 metre (98 ft) 4-core cable	7A

Hydratect: Steam & Water Detection  
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## E) How to order a Control Unit

The control unit is configured by selecting codes for power supplies and relays



### Base model

TABLE 1	
Description	Code
Hydrastep Control Unit	2462

### Configuration

TABLE 2	
Description	Code
Two channel steam / water detection control unit AC mains supply, Single Pole Single Throw relay output	A
Two channel steam / water detection control unit 24VDC mains supply, Single Pole Single Throw relay output	C
Two channel steam / water detection control unit AC mains supply, Two Pole changeover relay outputs	E

Installation Accessory	
Accessory	Code
Electrode thread anti-seize compound (recommend one per water column)	830007220

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<b>Technical Specification</b>	
<b>General</b>	
Water / Steam Threshold	0.6 $\mu\text{S}/\text{cm}$ (normal) or 1.6 $\mu\text{S}/\text{cm}$ (alternate) according to water purity
<b>Display</b>	
Integral display	Red LED to indicate steam Green LED to indicate Water Amber LED to indicate fault
<b>Electrical</b>	
Power supply	AC: 94 to 130V or 187 to 256V, 48 to 65 Hz, 2 x 10VA maximum DC: 20 to 60V, 2 x 10W maximum
Status relay output (one for each channel)	Water normal: Energised in Water Water normal: Energised in Steam Separate normally open and normally closed relay contacts: Maximum voltage: 250VAC, 125DC Maximum current: 8A Maximum switching power (AC): 1500VA Maximum switching power (DC): 240W <30V, 65W <60V, 25W <125V
Fault relay output (one for each channel)	Energised during normal operation (fail safe) <i>Specification as status relay output above</i>
<b>Mechanical</b>	
Enclosure	Stainless steel, grade 304, wall mounting (refer to dimensional drawing)
	IP65 / NEMA 4X
	190mm x 190mm x 90mm (7.5 in. x 7.5 in. x 3.5 in.)
Weight	2.8 kg (6.2 lb)
<b>Environment</b>	
Operating temperature	-20 to + 70 °C (-4 to 158 °F)
Operating pressure	Inserts and electrodes up to 300 bar
Relative Humidity	Up to 100%
<b>Approvals</b>	
FM	Approved for steam-system water detection
LVD	EN 61010-1
Pressure Equipment Directive	Safety accessory
Electromagnetic Compatibility	EN 61326-1
ATEX	II 3 G Ex ec [ic] IIC (-20°C ≤ Ta ≤ +70°C)

## Approvals

### EUROPEAN DIRECTIVES

#### **Electromagnetic Compatibility Directive (EMC) 2014/30/EU**

Compliant to EMC directive

#### **Low Voltage Directive (LVD) 2014/35/EU**

Compliant to LVD directive

#### **Pressure Equipment Directive (PED) 2014/68/EU:**

This product is categorised as a Safety Accessory

Certificate no. IES / CAT000530347-B1-4



#### **ATEX Directive 2014/34/EU**

NON SPARKING

EN 60079-0, EN IEC 60079-7, EN 60079-11

II 3 G Ex ec [ic] IIC (-20°C ≤ Ta ≤ +70°C)

Certificate no. DML 22ATEX4103X

#### **FM**

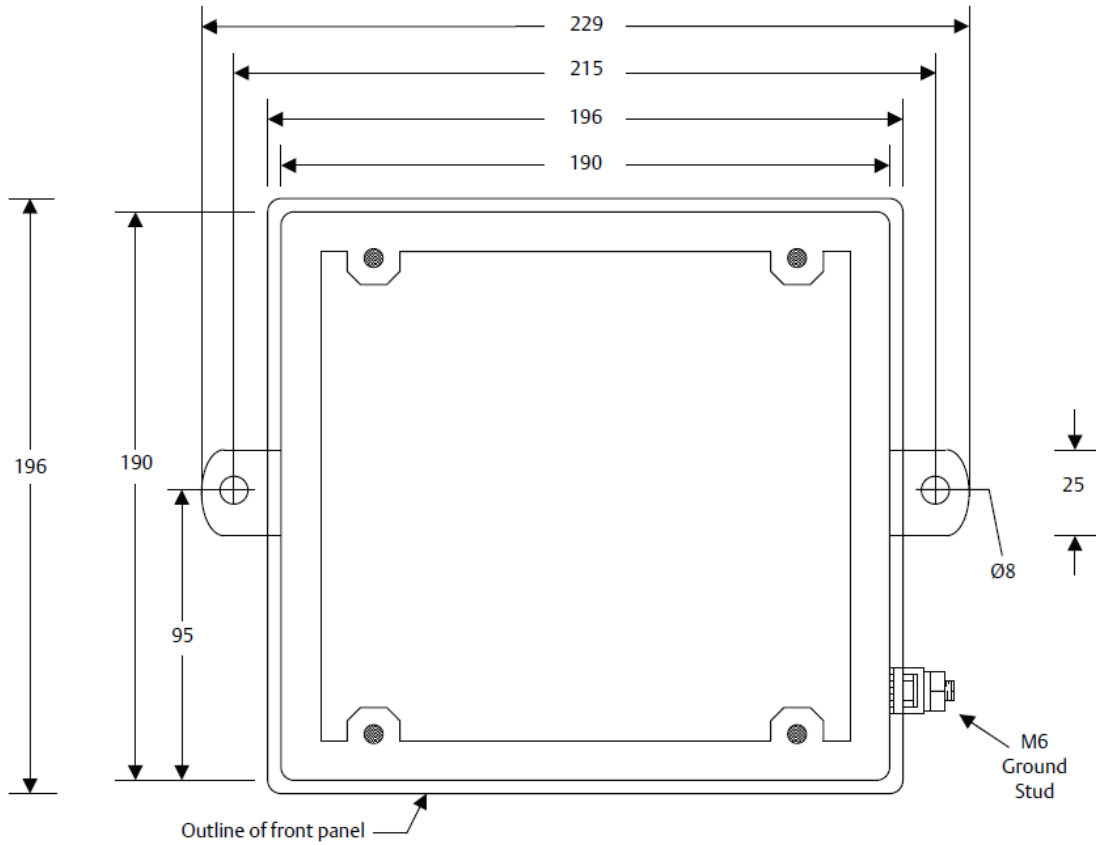
FM 7710

Approved for boiler water-level control

# Dimension Drawing

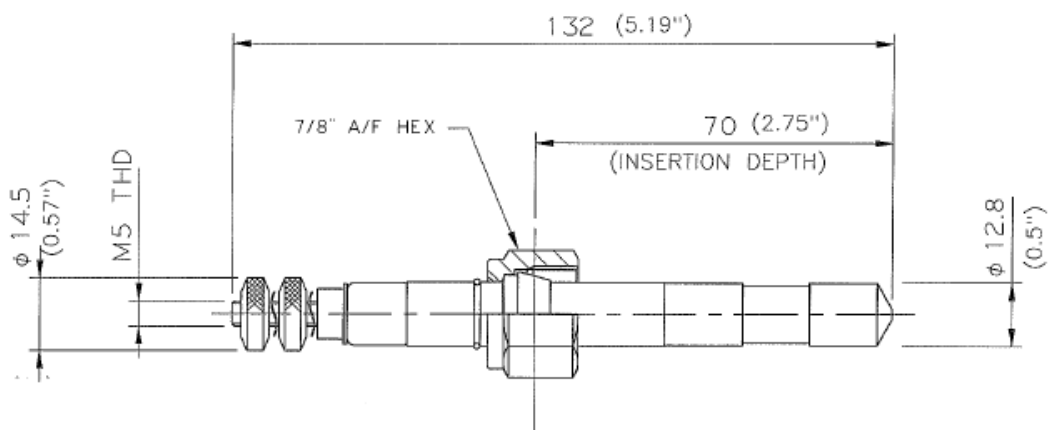
## Hydratect enclosure

Dimensions are in mm.



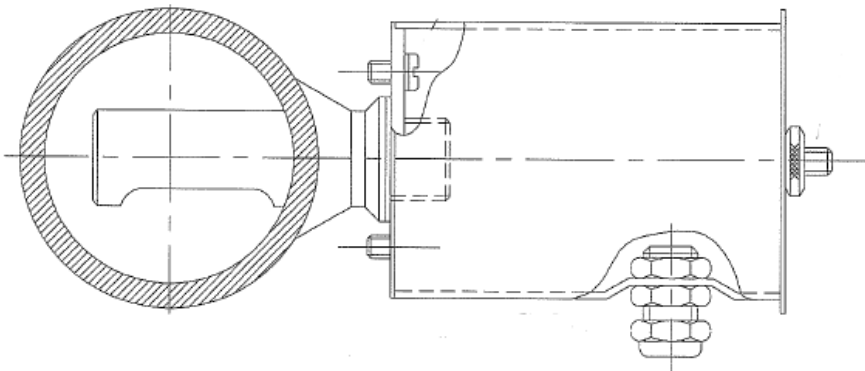
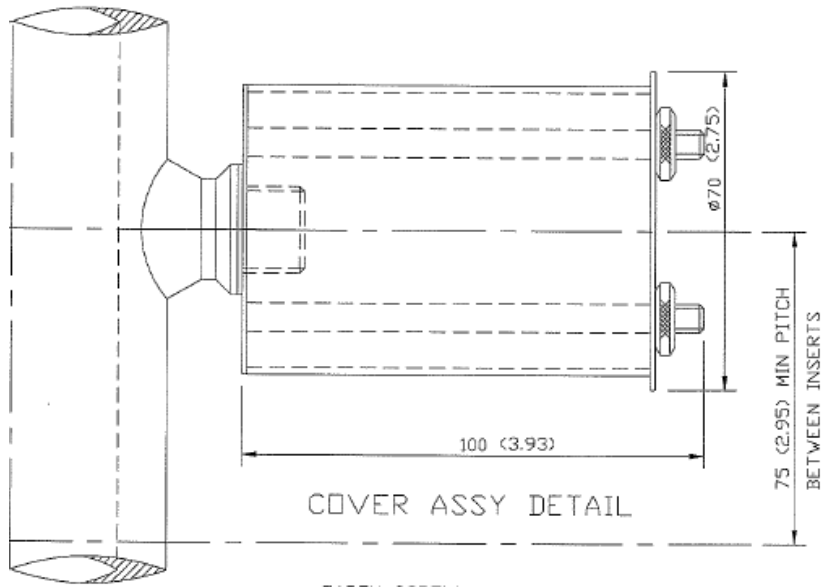
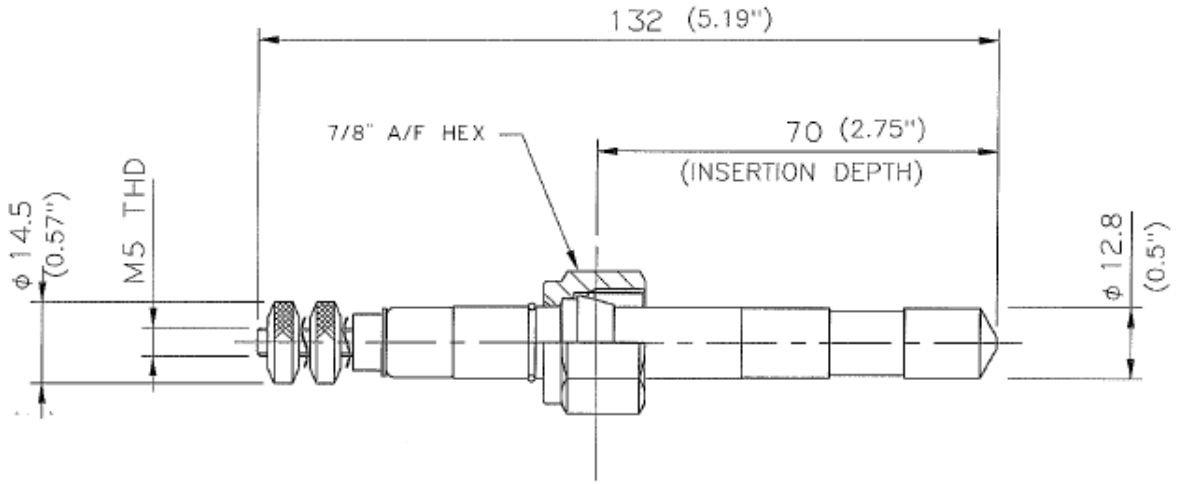
Overall depth = 100 mm (case and panel) + 3 mm (bracket) + 4.5 mm (bolt heads and washers)

## Electrode 246785\*



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**Installation Drawing**

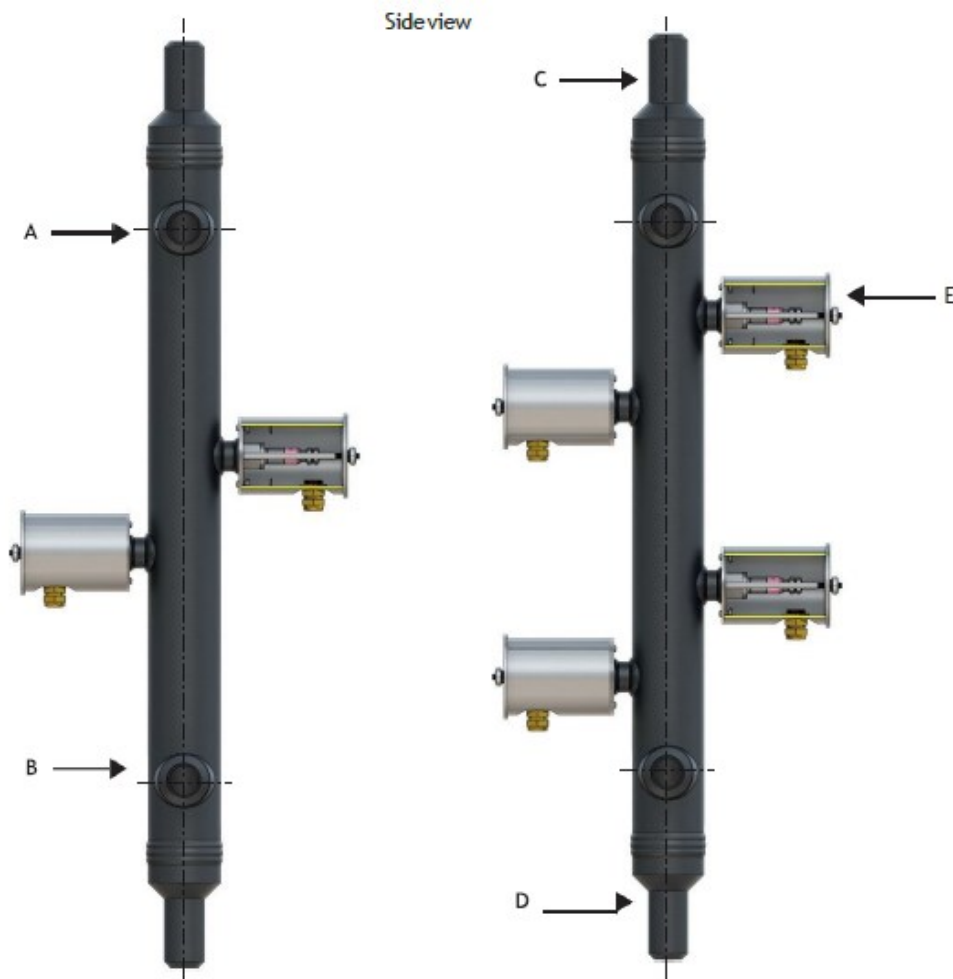


## Manifolds

An alternative method of installation is to use a manifold with inserts welded in place to mount the electrodes. These are manufactured to customer requirements. Any number of electrode ports can be used, but typical quantities are 1, 2 or 4.

Designs can be in line, or with side connections. Process connections can be weld prepared or flanged.

Examples with weld prepared side connections are shown below.



- A. Steam connection.
- B. Water connection.
- C. Vent connection or capped.
- D. Drain connection.
- F. Individual-electrode cover (cutaway to show electrode).

**Please consult your Sales Office for a design sheet to complete to your requirements.**

*In the interest of development and improvement Delta Mobrey Ltd, reserves the right to amend, without notice, details contained in this publication. No legal liability will be accepted by Delta Mobrey Ltd for any errors, omissions or amendments.*

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ISO9001  
FM00720

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