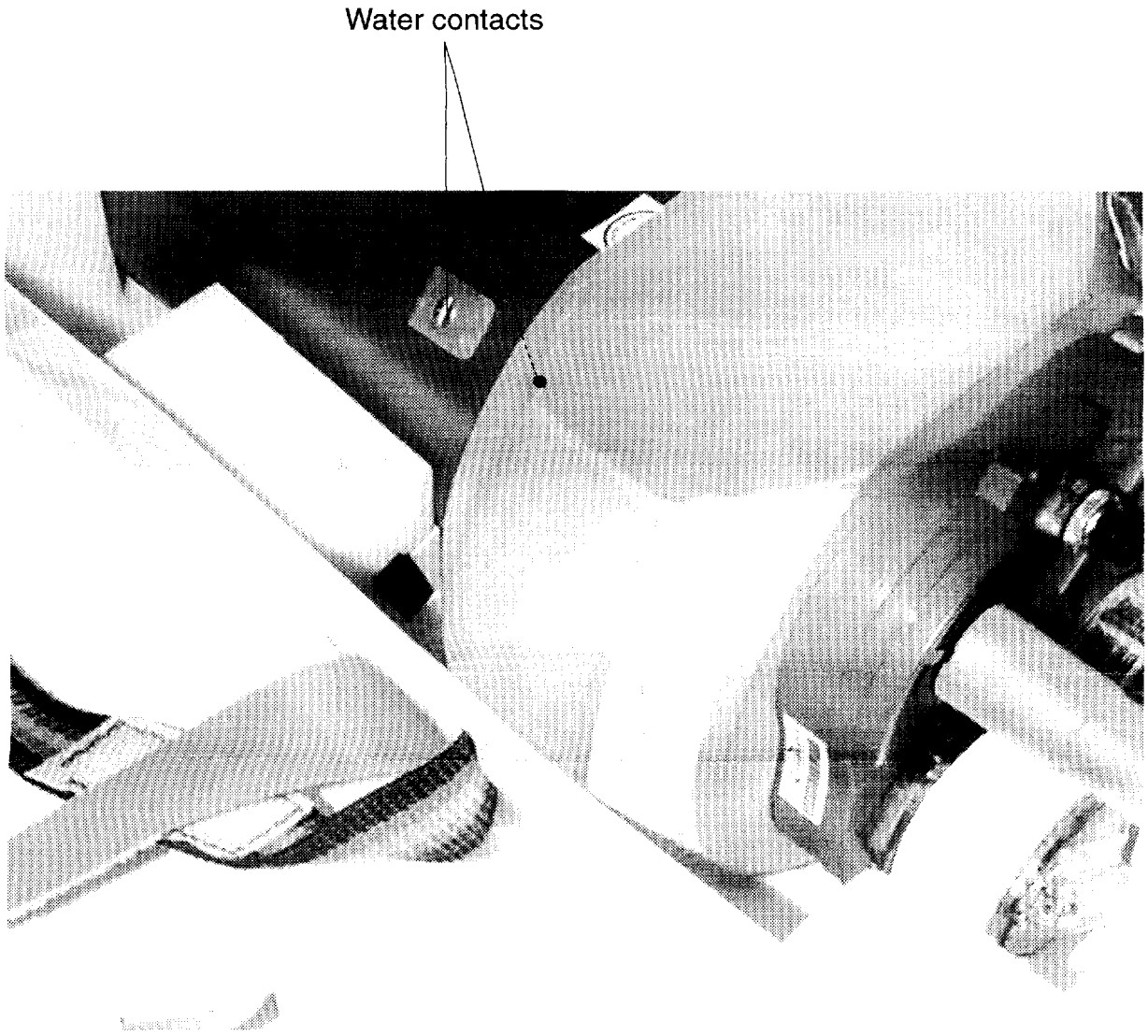
SERPE-IESM

PACK OF 4 CELLS LM3455

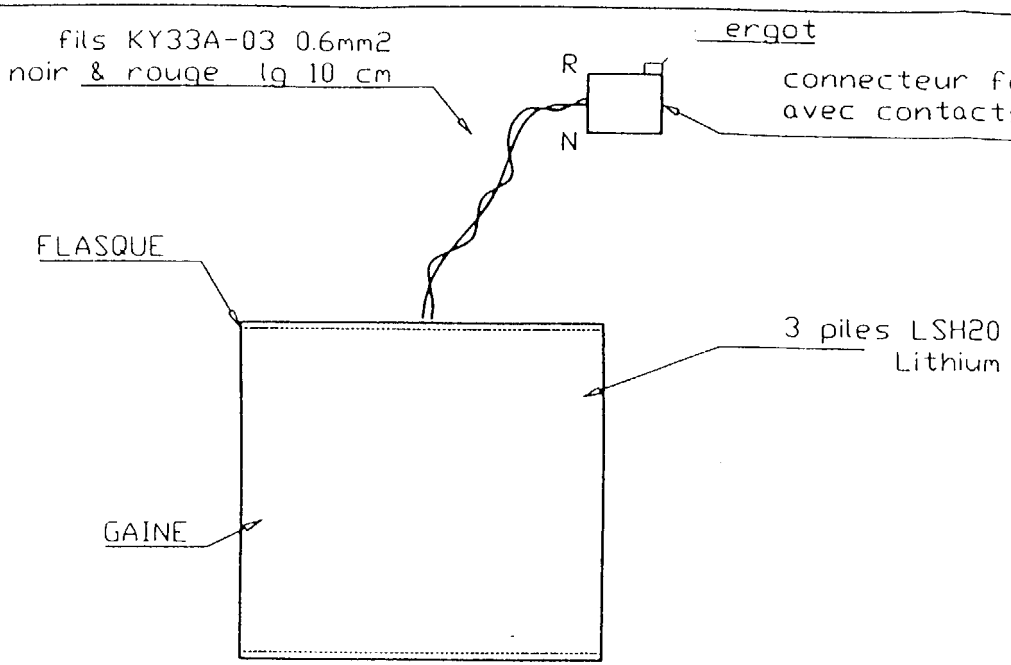
S 05 19 102 B

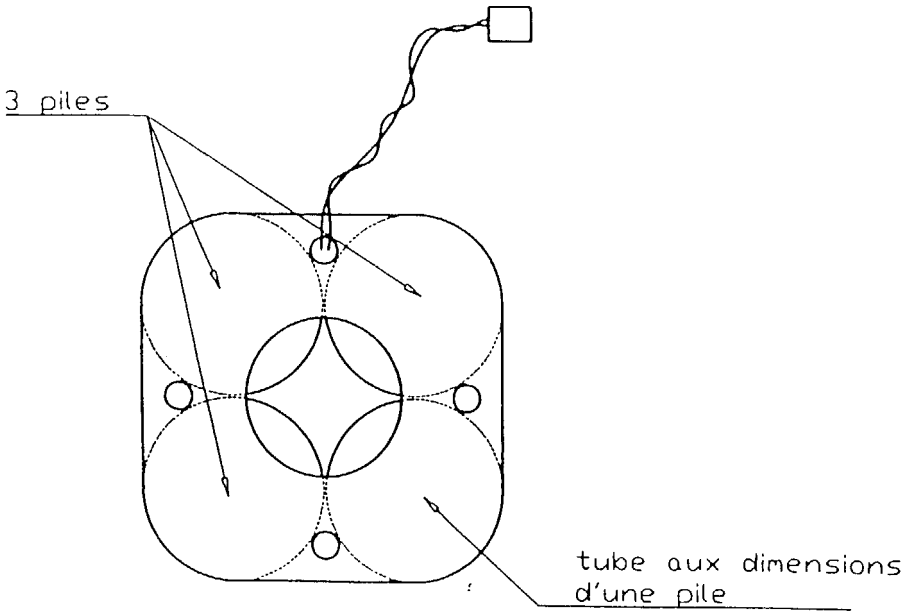
Manufacture : BLUE STAR 5 (Canada)
Technology : LiMnO2
Nominal voltage per cell 2,8 volts or 11,2 volts for the pack
Capacity at + 20° C for a new pack : 10 Ah
Shelf life : 10 years
Internal protection against short circuit by integrated polyfuse
Mounting in serie



magnet to prevent water activation inside container

KANNAD 406 SW





ECHELLE					
DATE 10.06.97	RESP PROJET P B				
DESSINE PAR JL A	CODE PRODUIT BBA01400				
VERIFIE PAR RG		A	Premiere diffusion	JL A	RG 10.06.97
		Ind	MODIFICATIONS	Dess. par	Verif. par Date

Societe d'Etudes et de Realisation de Protection Electronique
Informatique Electronique Securite Maritime

Zone Industrielle des Cinq Chemins 56520 GUIDEL FRANCE
Telephone 02.97.02.49.49/02.97.02.49.80
Telecopieur : 02.97.65.00.20 Telex : 950 535 F

SERPE-IESM

KANNAD

BALISE SURVIE

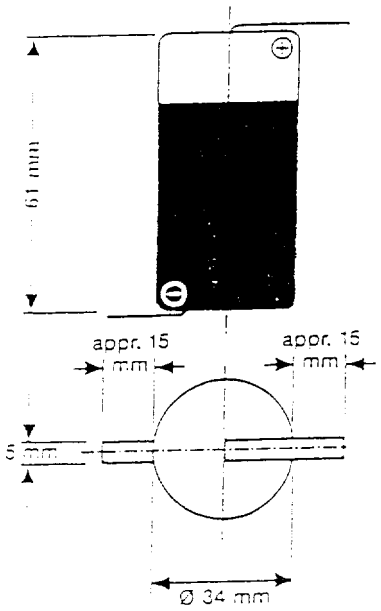
Ens. batteries

N S05 19 1 02 A

Lithium-MnO_2 Type M 20 – 3 Volt

Technical Data:
Technische Daten:

Nominal voltage	: 3.0 V
Rated capacity	: 11 Ah at 200 mA
Max. discharge current	: 2.5 A*
Weight	: 115 g
Operating temperature	: -40 °C to +60 °C**
Storage temperature	: -55 °C to +71 °C***
Terminations	: Solder tabs (other variations upon request)
Design	: Hermetically sealed stainless steel case with safety vent
Approved according to	: VG 96915 part 2 and part 154



Nennspannung	*: 3,0 V*
Nennkapazität	*: 11 Ah bei 200 mA*
Max. Laststrom	*: 2,5 A**
Gewicht	*: 115 g*
Betriebstemperatur-bereich	*: -40 °C bis +60 °C***
Lagertemperaturbereich	*: -55 °C bis +71 °C****
Anschlußarten	*: Lötfahnen (andere Anschlußarten auf Anfrage)*
Ausführung	*: Hermetisch verschlossenes Edelstahlgehäuse mit Sicherheitsventil im Zellendeckel*
Qualifiziert nach	*: VG 96915 Teil 2 und Teil 154*

* Higher rates available under certain circumstances.
Höhere Werte sind unter bestimmten Bedingungen möglich

** Higher operating temperatures can be achieved under certain circumstances.
Höhere Betriebstemperaturen sind unter bestimmten Bedingungen möglich

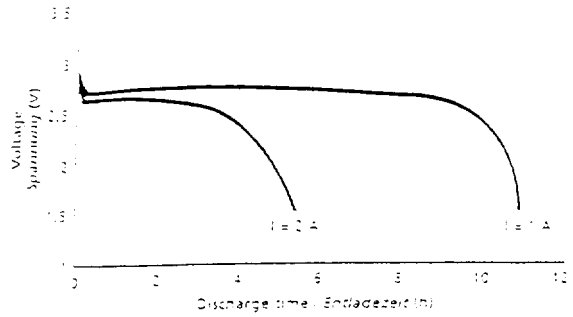
*** Long time storage at high temperatures may affect the performance.
Lange Lagerung bei hohen Temperaturen kann die Eigenschaften beeinflussen

Please pay attention to our handling instructions in case you intend to connect

Lithium-MnO_2 Type M 20 – 3 Volt

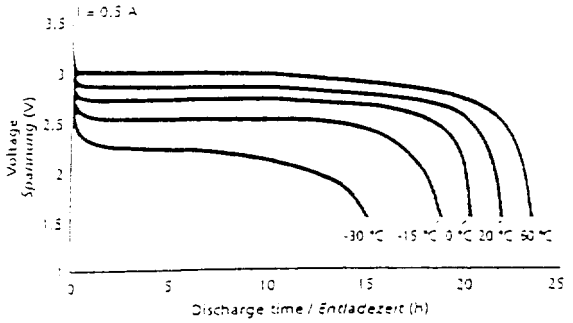
FRIWO

LITHIUM-BATTERY



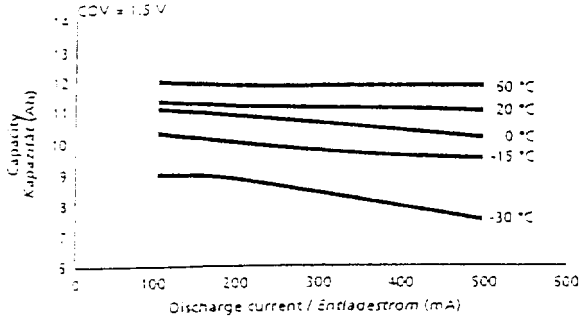
Typical discharge curves with constant current at 20 °C

Typische Entladekurven mit Konstantstrom bei 20 °C



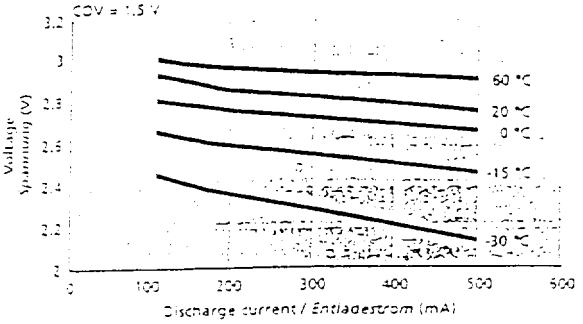
Typical discharge curves with constant current

Typische Entladekurven mit Konstantstrom



Capacity vs. discharge current vs. temperature

Kapazität in Abhängigkeit von Entladestrom und Temperatur



Operating voltage vs. discharge current vs. temperature

Betriebsspannung in Abhängigkeit von Entladestrom und Temperatur

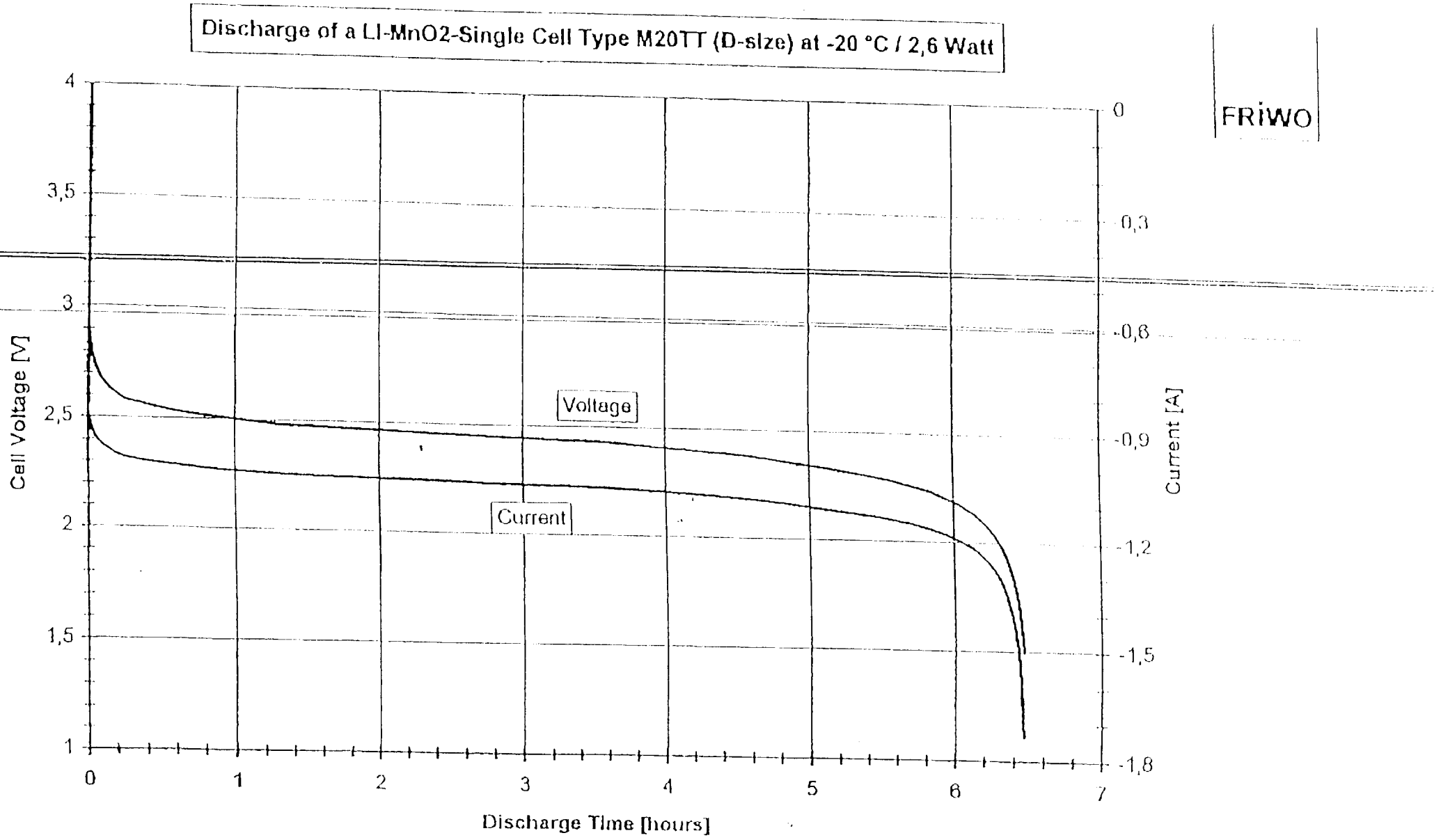
GB For more details please contact
FRIWO SILBERKRAFT:
Phone: +49/203/30 02/193
Fax: +49/203/30 02/241

D *Für weitere Informationen wenden Sie sich bitte an FRIWO SILBERKRAFT:*
Telefon: 02 03/30 02/193
Fax: 02 03/30 02/241

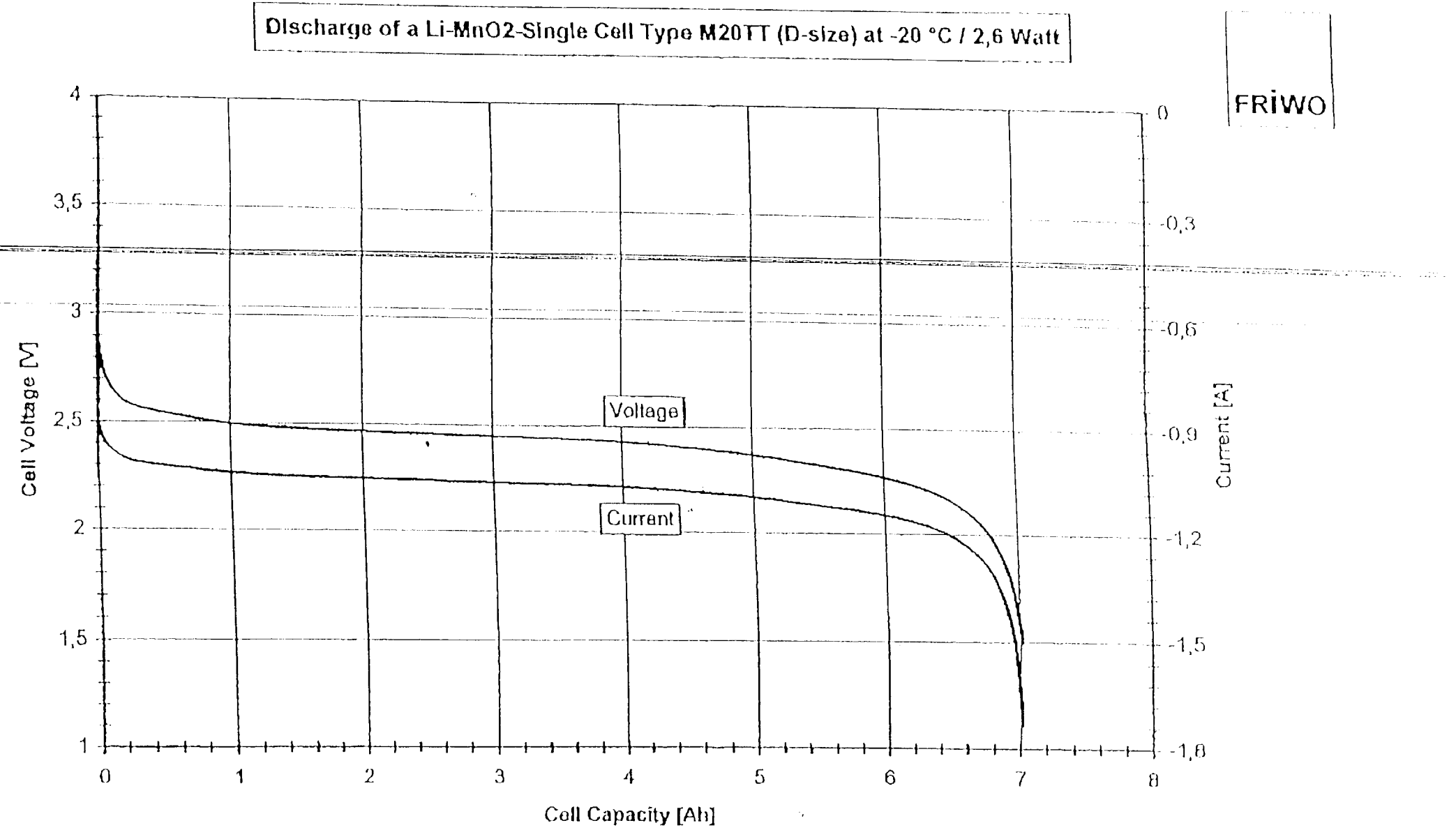
CERTIFIED DIN EN ISO 9001 QUALITY SYSTEM REG NO 8521

CERTIFIED QUALITY E.Net

FRIWO SILBERKRAFT Gesellschaft für Batterietechnik mbH


Discharge of a LI-MnO2-Single Cell Type M20TT (D-size) at -20 °C / 2,6 Watt
FRIWO
Cell Voltage [V]
Current [A]
Voltage
Current
Discharge Time [hours]
4
3,5
3
2,5
2
1,5
1
0
-0,3
-0,6
-0,9
-1,2
-1,5
-1,8
0
1
2
3
4
5
6
7

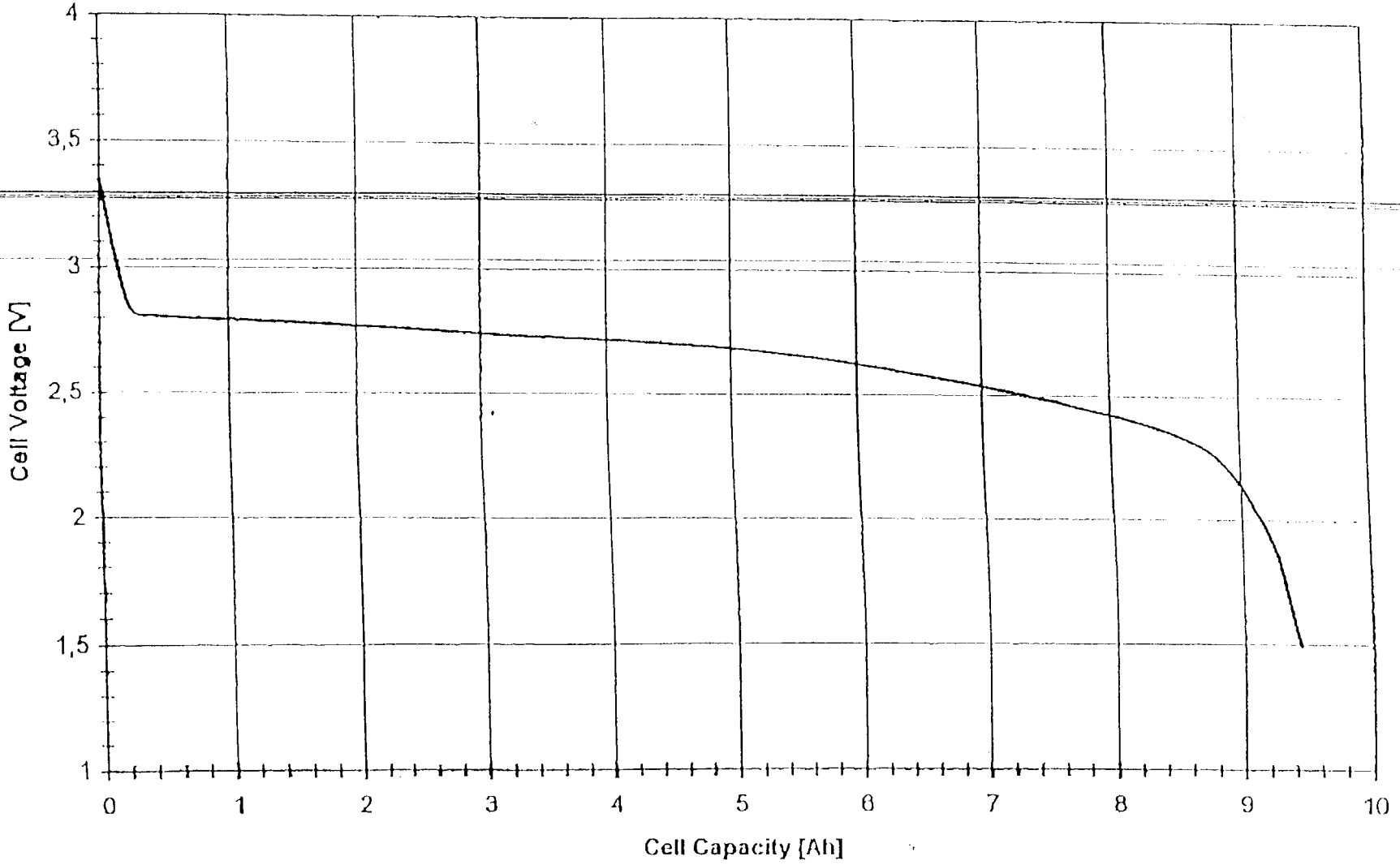
serpe1.xls



sorpe1.xls
98/02/25

Discharge of a Li-MnO2-Single Cell Type M20TT (D-size) at +60 °C, I = 2,83 A

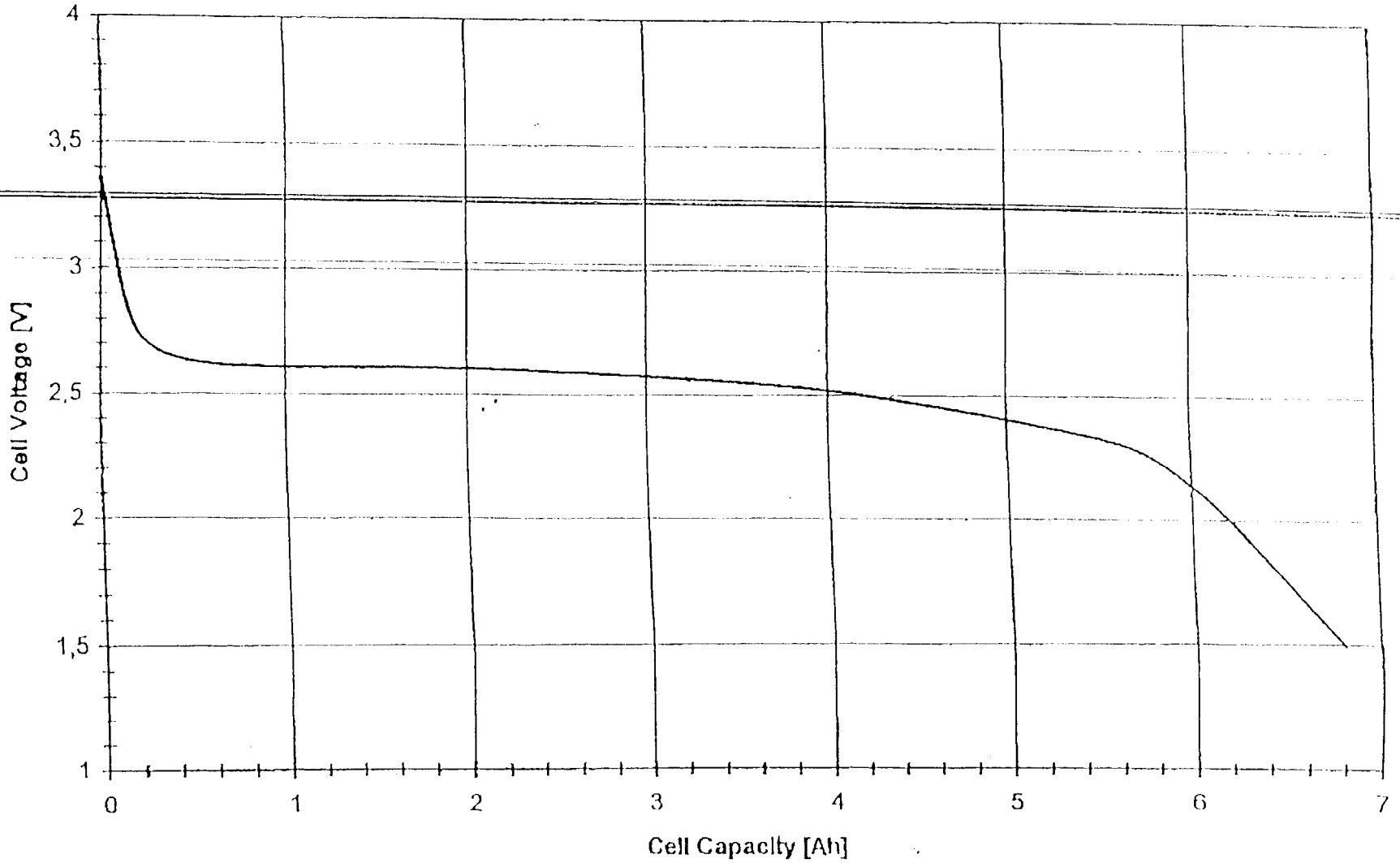
FRIWO



serpe3.xls
98/02/24

Discharge of a Li-MnO2-Single Cell Type M20TT (D-size) at -1 °C, I = 2 A

FRIWO

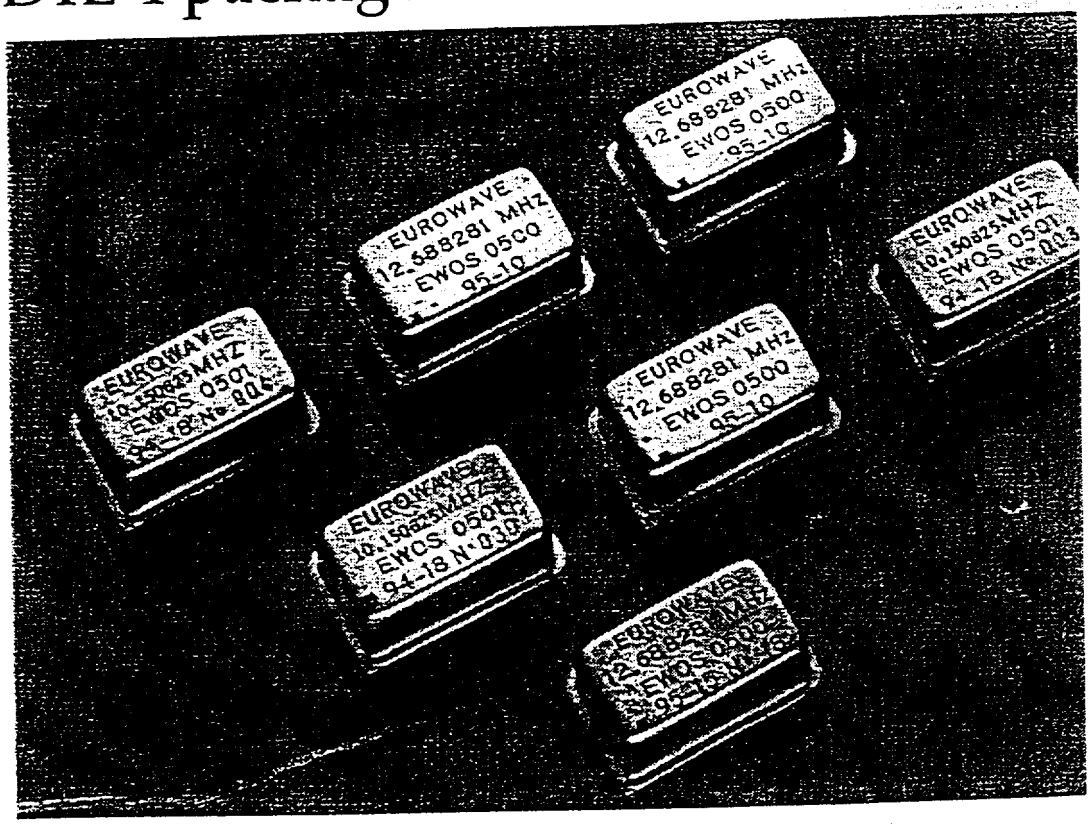


serpe2.xls
98/02/24

SOREP

December 1996 Edition

SOREP OCXOs in DIL 4 package



SOREP, Z.I. de Bellevue, B.P. 5, 35221 CHATEAUBOURG CEDEX (FRANCE),
Tel. : +33 (0)2.99.00.94.70, Fax : +33 (0)2.99.00.94.58

SOREP

EW OS 0500

12.688281 MHz OCXO

Oven Controlled Crystal Oscillator

CHARACTERISTICS

ELECTRICAL SPECIFICATIONS @ 25°C, Vcc=5V, unless otherwise specified

OUTPUT FREQUENCY		MHz	12.688281
FREQUENCY TOLERANCE		ppm	± 2 (25°C)
TEMPERATURE RANGE	Operating	°C	-40, +55
	Storage	°C	-55, +75
SUPPLY VOLTAGE		V	5 ± 5 %
SUPPLY CURRENT (+ 5V pin 4)	Warm-up	mA	250 max.
	Warm-up time	sec.	60
	Steady state +25°C	mA	20 typ.
	Steady state -40°C	mA	50 typ.
	Steady state +55°C	mA	10 typ.
FREQUENCY STABILITY	Temperature	ppm	± 0.2 typ.
	Supply voltage	ppm	± 0.1 typ.
	Short time		$1 . 10^{-10}$ *
AGING	Day		$\pm 2 . 10^{-9}$ **
	Year	ppm	± 0.5
PHASE NOISE		dBc/Hz	-110 (100 Hz offset)
OUTPUT LEVEL (Load 10KΩ/10pF)		Vpp	2
SIZE			See figure

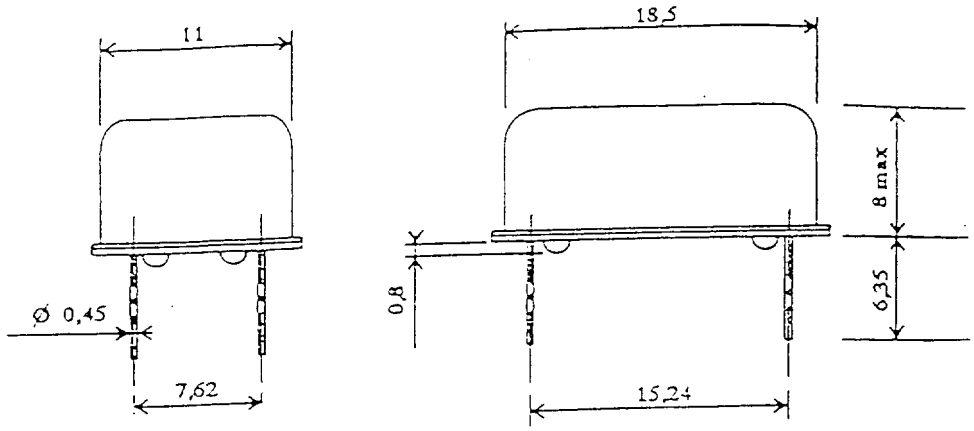
* : Allan variance / 100 ms

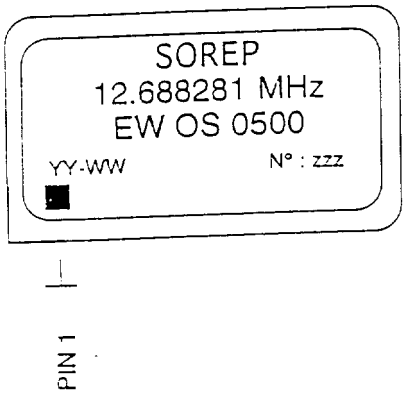
** : Over full temperature range

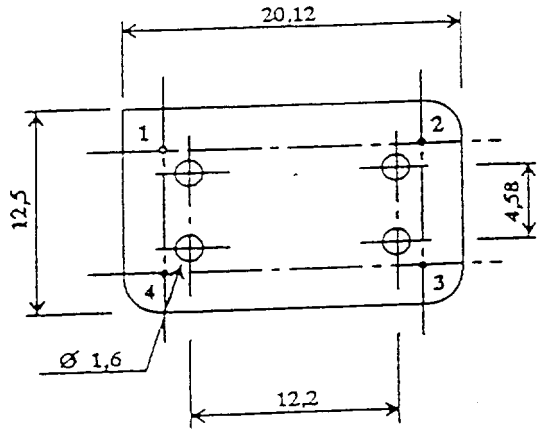
Version 2.0

PACKAGE OUTLINE

Pin n°	Function
1	CONTROL VOLTAGE
2	GROUND
3	RF OUT
4	POWER SUPPLY







Bottom view

Dimensions in mm.

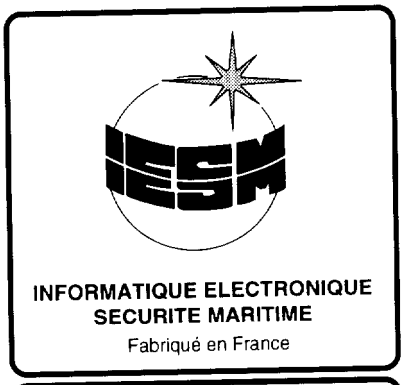
RELIABILITY TEST

ITEM	TEST	REFERENCE
- Appearance / Marking	Conform to outline and presentation.	-
- Sealing	Qk test (thin leaks) 60 h, 12 h connexion, method 1. Qc test (large leaks), method 2.	IEC 68.2.17
- Shocks	500 G, 1 ms, 5 shocks for each axe (1 axe, in 2 directions)	IEC 68-2-27
- Vibration	10 to 2000 Hz, 0.75 mm until 10G, 90 min. per axe. V = 1 oct/min, 10 cycles per axe.	IEC 68-2-6
- Brasability	According to the standard.	IEC 68-2-20
- Resistance to solvents	Solvents	IEC 68-2-45
- Temperature cycling	25 cycles between -55°C and +85°C, kept for 30 min. at each temperature.	IEC 68-2-14
- Humidity resistance	55°C, 95%, 56 days Measurements at 4, 10, 21 and 56 days.	IEC 68-2-3
- Life test	60°C, 1000 hours, under voltage. Measurements at 168, 500 and 1000 hours at Tambiant and extremes.	-
- Warm storage ageing	+85°C, 1000 hours storage. Measurements at 168, 500 and 1000 hours at Tambiant.	-
- Inspection under components	No projection of reflow paste > 150 µm.	

SOREP reserves the right to make changes to the products descri-

SOREP S.A. SOCIETE ANONYME AU CAPITAL DE 11 696 200 F REGIE PAR LES

Siège social et usine/Headquarters and factory :
Z.I. de Bellevue, B.P.5, 35221 CHATEAUBOURG CX.



INFORMATIQUE ELECTRONIQUE
SECURITE MARITIME
Fabriqué en France

KANNAD 406 WH

Automatic water activation

CATEGORY I

Float free COSPAS-SARSAT EPIRB
406,025MHz/121,5 MHz
Float free type

OPERATING PRINCIPLE

At a depth of between 1,5 and 4 mts, the release system cuts the bolt to open the container and release the Epirb.
The beacon starts operating when submerged in water and out the float free container.

NOTICE TO PUBLIC

In case of discovery, alert immediately the nearest coast guard station.

1401A

A. GUEGAN		J.L. AUVRAY		R. PETCH	
Nom	Visa	Nom	Visa	Nom	Visa
Dessiné par :		Vérifié par :		Approuvé par :	

INSTRUCTIONS

MANUAL ACTIVATION :

1 - Remove Epirb from its container.
2 - Unfold antenna.
3 - Unscrew transparent cap.
4 - Switch to **ON**.
5 - Red light and strobe are illuminated.
6 - Screw transparent cap back on
or
1 - Secure Epirb to the liferaft with tether line and throw in water.

TO STOP EPIRB :

- Remove from water and switch back to **READY** position.

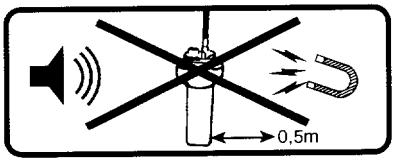
TEST INSTRUCTIONS

- Press test button.
- The red light flashes.

Regular flashing : OK

Irregular flashing:

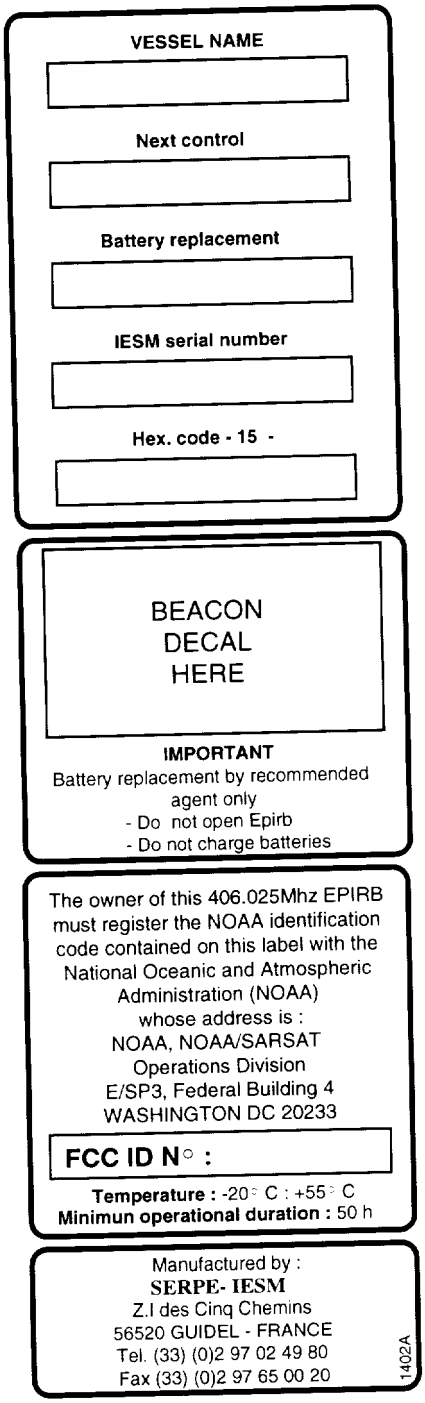
- Defective, repeat 3 times before contacting agent.
  The self test stops automatically and does not exceed 40 seconds
- Put Epirb back correctly inside container.



WARNING
It is unlawful to transmit a distress signal unless an emergency exists.

1403A

A. GUEGAN		J.L. AUVRAY		R. PETCH	
Nom	Visa	Nom	Visa	Nom	Visa
Dessiné par :		Vérifié par :		Approuvé par :	



A. GUEGAN		J.L. AUVRAY		R. PETCH	
Nom	Visa	Nom	Visa	Nom	Visa
Dessiné par :		Vérifié par :		Approuvé par :	

OPERATING PRINCIPLE

This bracket is fitted with a hydrostatic release system.
At a depth of between 1,5 and 4 mts,the release system cuts the bolt to open the container.
The beacon is automatically released and starts operating when submerged in water and out of the float free container.

EPIRB INSTALLATION INSIDE BRACKET

- Place Epirb in bracket "This side up".
- Fold antenna over switch and flash under the Epirb and place in groove at the bottom of the container.
- Close container by fitting hinges into place.
- Slide red lock through axle to lock container.

WARNING

DO NOT TAMPER WITH THE ROUND ADHESIVE LABEL SEALING EPIRB SWITCH IN READY POSITION.

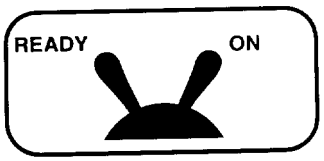
1407A

A. GUEGAN		J.L. AUVRAY		R. PETCH	
Nom	Visa	Nom	Visa	Nom	Visa
Dessiné par :		Vérifié par :		Approuvé par :	

This side up

AUTOMATIC ACTIVATION

SWITCH SEALED
IN **READY** POSITION FOR
AUTOMATIC WATER ACTIVATION.



FOR MANUAL ACTIVATION ONLY

- Switch to ON.

1404A

A. GUEGAN		J.L. AUVRAY		R. PETCH	
Nom	Visa	Nom	Visa	Nom	Visa
Dessiné par :		Vérifié par :		Approuvé par :	

D'après plan n° : 010 11 404A

Float free COSPAS-SARSAT EPIRB
with hydrostatic release system

KANNAD 406 WH

CATEGORY I

Automatic water activation
406.025 MHz / 121.5 MHz
Float free type

Manufactured by :
SERPE- IESM
Z.I des Cinq Chemins
56520 GUIDEL - FRANCE
Tel. +33 (0)2 97 02 49 80 - Telex 950 535
Fax +33 (0)2 97 65 00 20

Warning

It is unlawful to transmit a distress signal unless an emergency exists.

VESSEL NAME

FCC ID N°

OPERATING INSTRUCTIONS

AUTOMATIC ACTIVATION

- At a depth of between 1,5 and 4 mts, the Epirb is automatically released and activated when submerged in water.

MANUAL ACTIVATION :

1 - Remove Epirb from its container.
2 - Unfold antenna.
3 - Unscrew transparent cap.
4 - Switch to **ON**.
5 - Red light and strobe are illuminated.
6 - Screw transparent cap back on
or
1 - Secure Epirb to the liferaft with tether line and throw in water.

TO STOP EPIRB :

- Remove from water and switch back to **READY** position.

1405A

A. GUEGAN		J.L AUVRAY		R. PETCH	
Nom	Visa	Nom	Visa	Nom	Visa
Dessiné par :		Vérifié par :		Approuvé par :	

SERPE-IESM

APPROVAL CERTIFICATES

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