



SERPE-IESM

PACK OF 4 CELLS LM3455

S 05 19 102 B

Manufacture : BLUE STAR 5 (Canada)

Technology : LiMnO_2

Nominal voltage per cell 2,8 volts or 11,2 volts for the pack

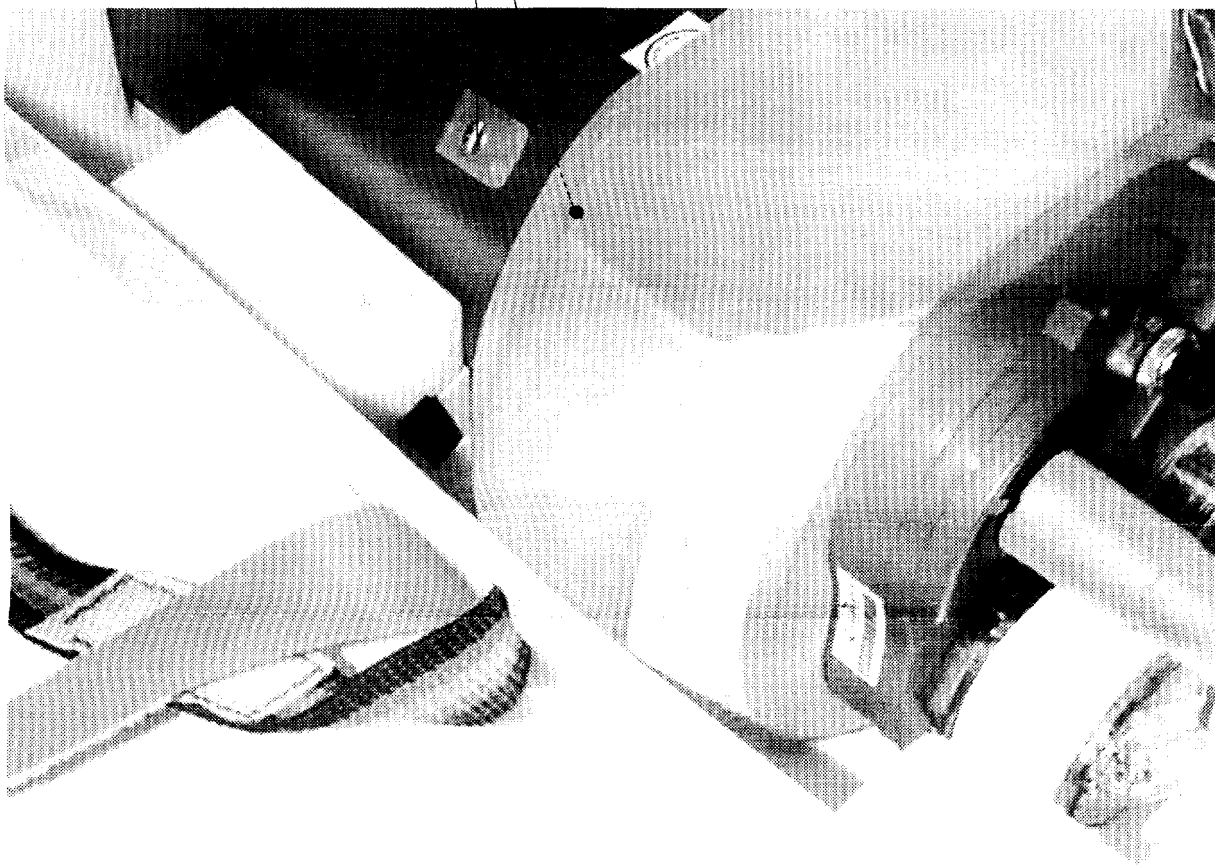
Capacity at + 20° C for a new pack : 10 Ah

Shelf life : 10 years

Internal protection against short circuit by integrated polyfuse

Mounting in serie

Water contacts

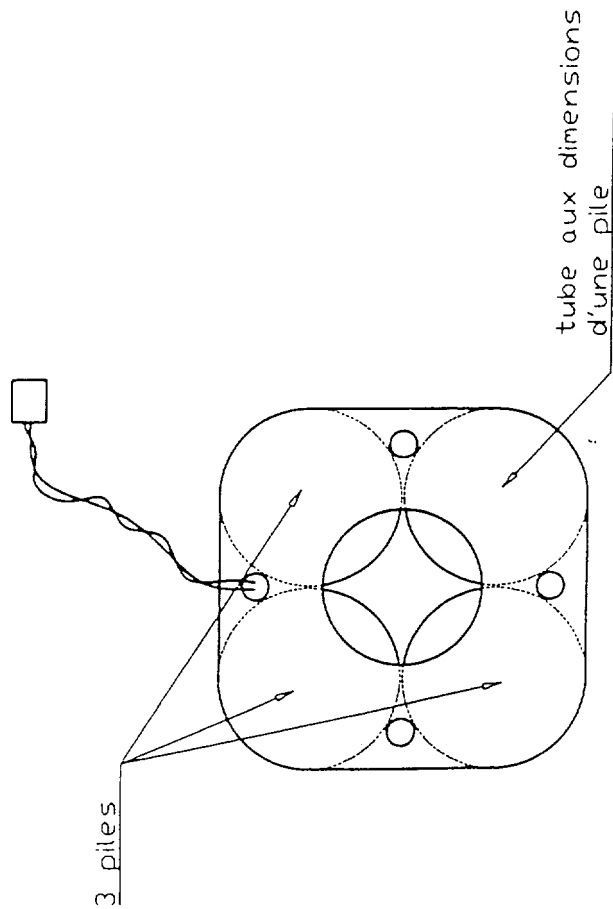


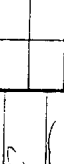
magnet to prevent water activation inside container

KANNAD 406 SW

ergot

connecteur fem. 172233-1 2pts AMP
avec contacts fem.170366-1



		SERPE-IESM	
KANNAD		BALISE SURVIE	
Ens. batteries		Ens. batteries	
N		S05 19 1 02 A	

Société d'études et de Réalisation de Protection Electronique Informatique Electronique Securite Maritime				Zone Industrielle des Cinq Chemins 56520 GUINEL FRANCE Téléphone: 02 97 82 43 49 / 02 97 82 43 80 Télécopieur : 02 97 65 00 20 Télec : 950 5375 F			
DATE 10.06.97		REÇU PROJET P.B.		Ind MODIFICATIONS		Zone Industrielle des Cinq Chemins 56520 GUINEL FRANCE Téléphone: 02 97 82 43 49 / 02 97 82 43 80 Télécopieur : 02 97 65 00 20 Télec : 950 5375 F	
DESSINE PAR JL A		CODE PRODUIT BBA01400		Dess. par JL A		Date 10.06.97	
VERIFIE PAR RG		Ind MODIFICATIONS		Verif. par RG		Date 10.06.97	

Lithium-MnO₂ Type M 20 – 3 Volt

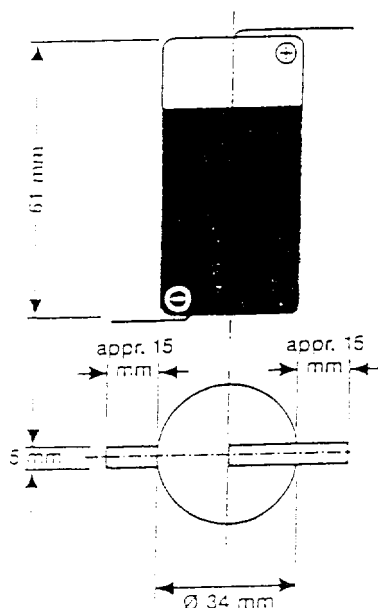
FRIWO

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
Betriebstemperaturbereich	: -40 °C bis +60 °C**
Lagertemperaturbereich	: -55 °C bis +71 °C***
Anschlußarten	: Lötflächen (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

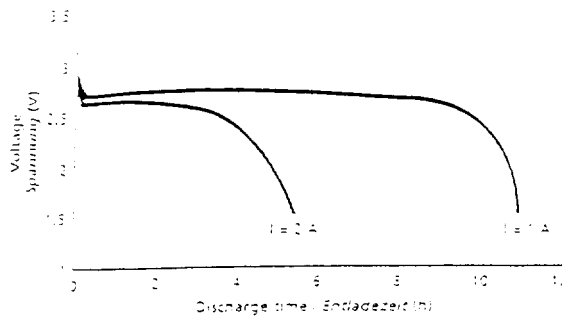
** Higher operating temperatures can be achieved under certain circumstances.
Höhere Betriebstemperaturen sind unter bestimmten Bedingungen möglich

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

LITHIUM-BATTERIES

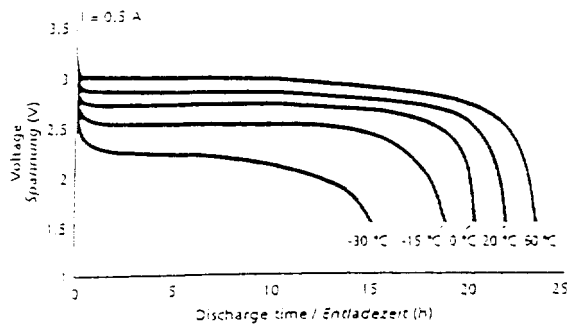
Lithium-MnO₂ Type M 20 – 3 Volt

FRIWO



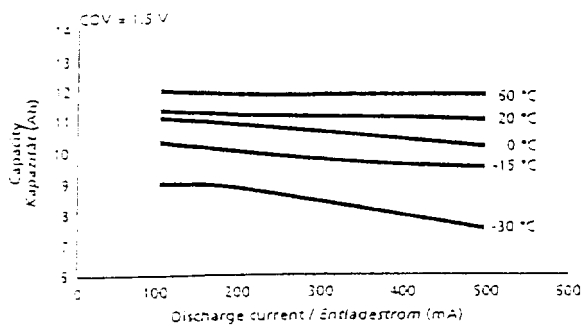
Typical discharge curves
with constant current
at 20 °C

Typische Entladekurven
mit Konstantstrom
bei 20 °C



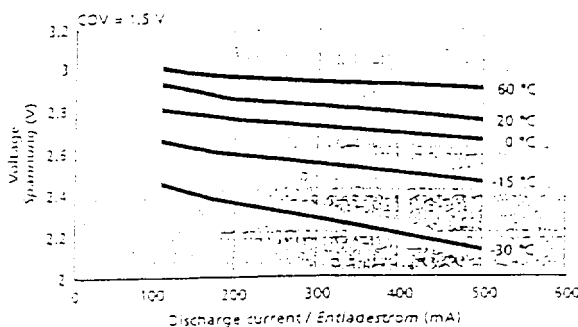
Typical discharge curves
with constant current

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 Entlade-
strom und Temperatur

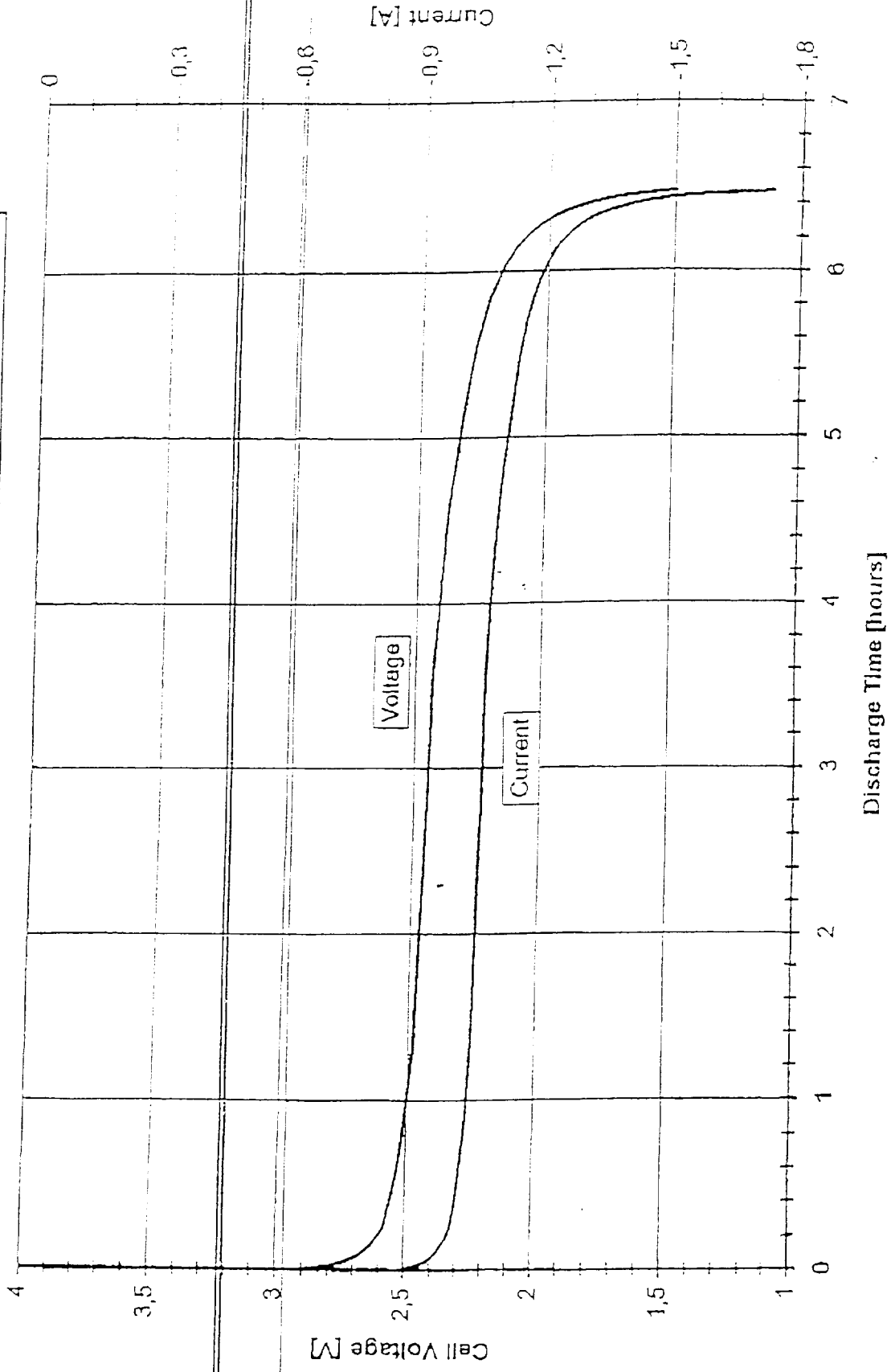
FRIWO For more details
please contact
FRIWO SILBERKRAFT:
Phone: +49/203/30 02/193
Fax: +49/203/30 02/241

FRIWO Für weitere Informa-
tionen wenden Sie sich bitte
an FRIWO SILBERKRAFT:
Telefon: 02 03/30 02/193
Fax: 02 03/30 02/241



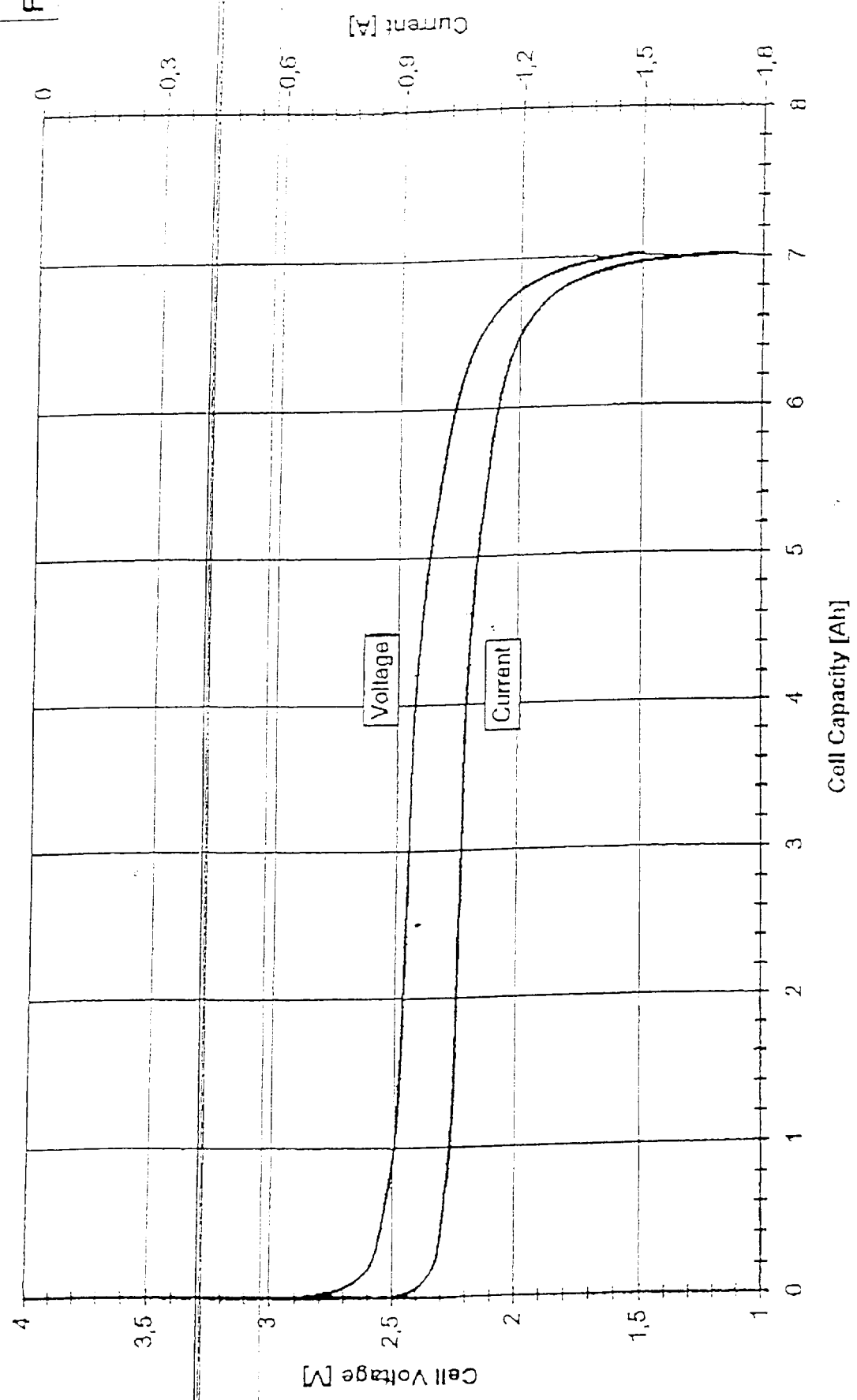
FRIWO SILBERKRAFT M 20

Discharge of a LI-MnO₂-Single Cell Type M20TT (D-size) at -20 °C / 2,6 Watt



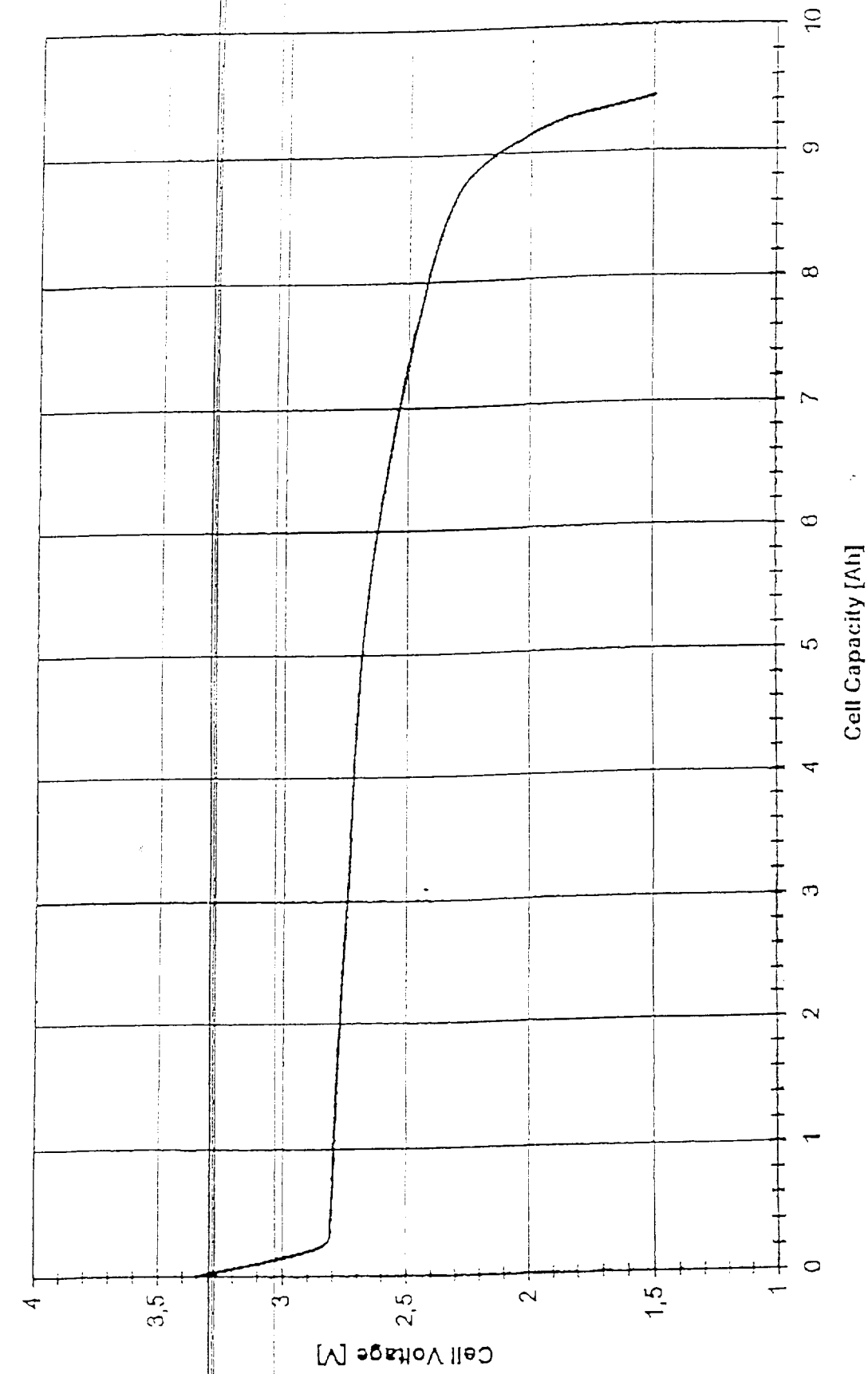
FRIWO

Discharge of a Li-MnO₂-Single Cell Type M201T (D-size) at -20 °C / 2,6 Watt



FRIWO

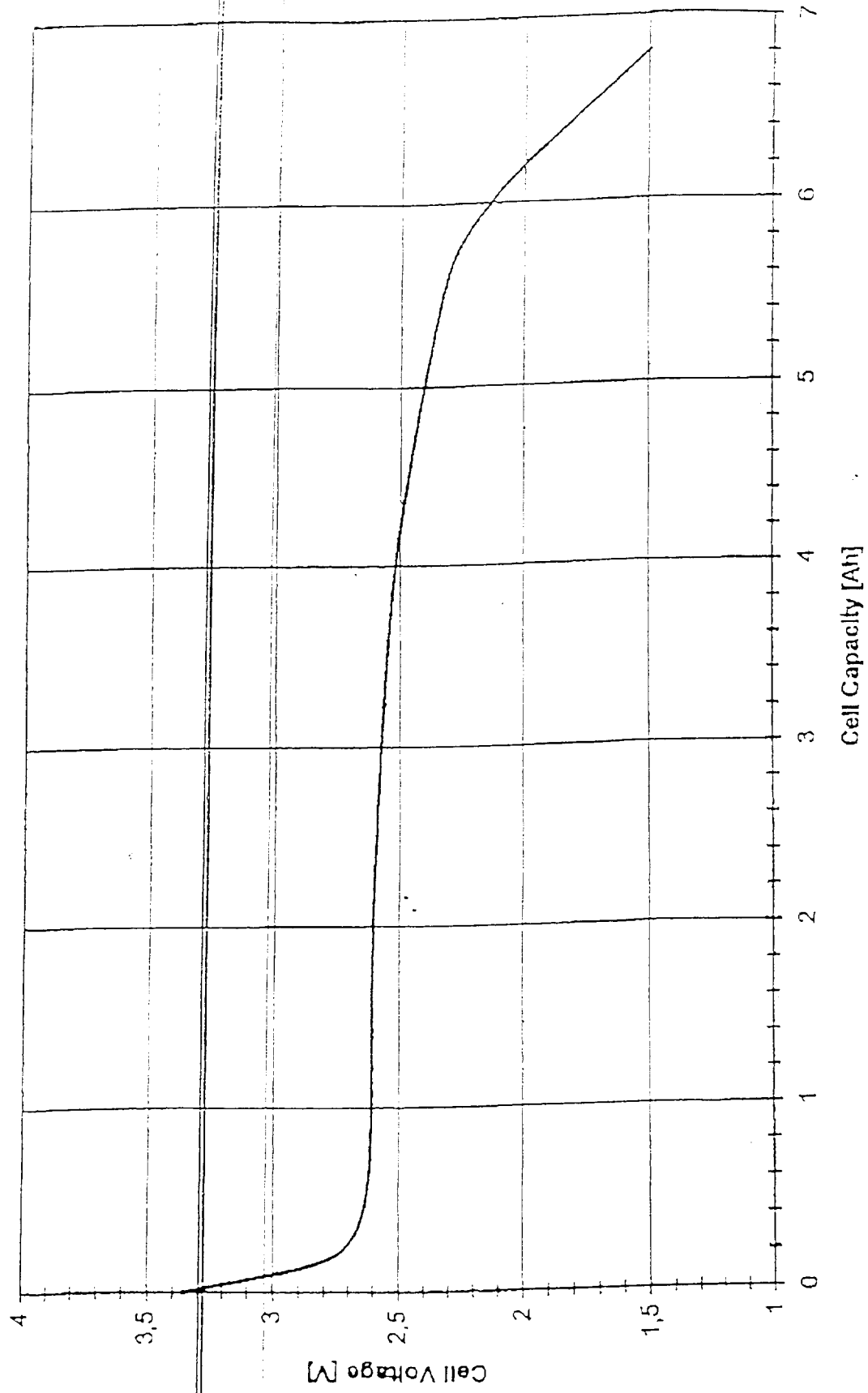
Discharge of a Li-MnO₂-Single Cell Type M20TT (D-size) at +60 °C, I = 2,83 A

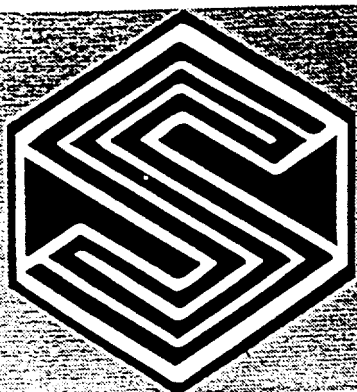


FRIWO

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

FRÍWO





SOREP

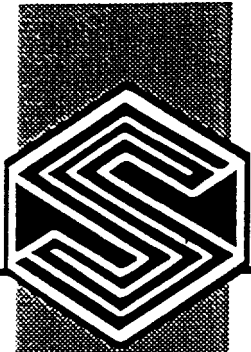
December 1996 Edition

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

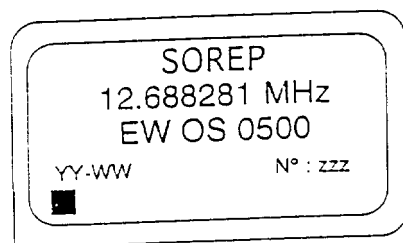
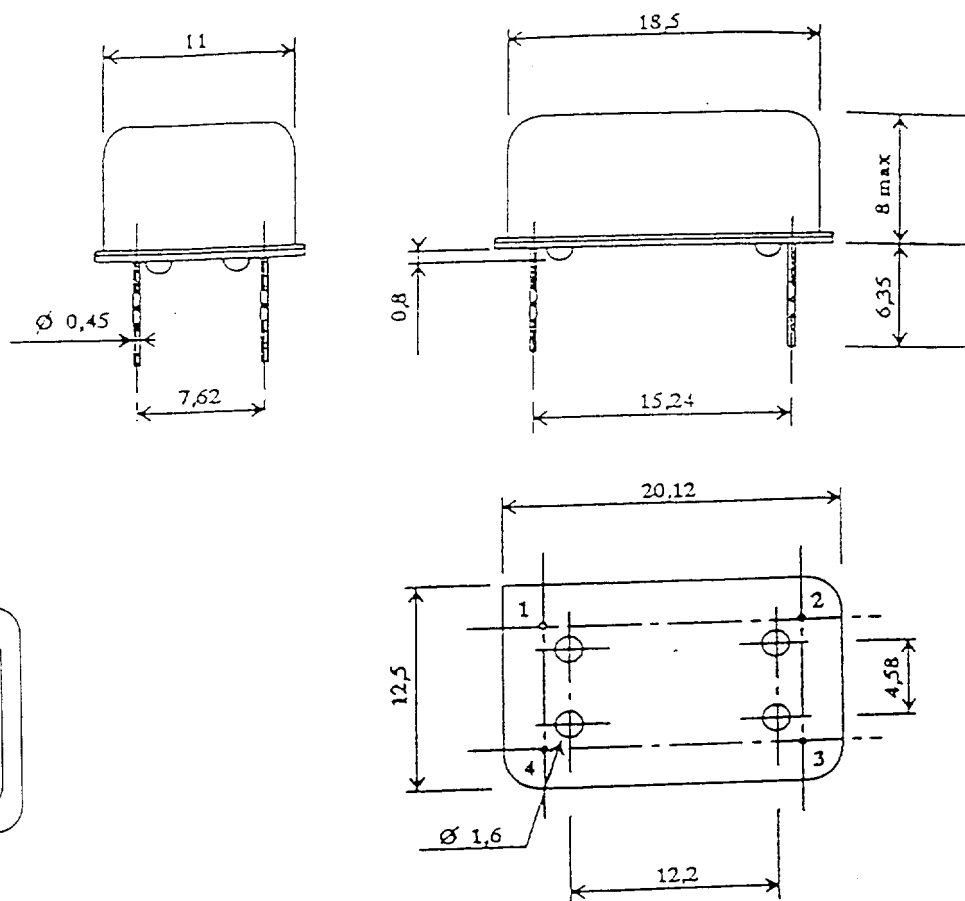
OUTPUT FREQUENCY		MHz	12.688281
FREQUENCY TOLERANCE		ppm	± 2 (25°C)
TEMPERATURE RANGE	Operating	°C	-40, +55
	Storage	°C	-55, +75
SUPPLY VOLTAGE		V	$5 \pm 5\%$
SUPPLY CURRENT (+ 5V pin 4)	Warm-up	mA	250 max.
	Warm-up time	sec.	60
	Steady state +25°C	mA	20 typ.
	Steady state -40°C	mA	50 typ.
	Steady state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

* : Allan variance / 100 ms

** : Over full temperature range

PACKAGE OUTLINE

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



PIN 1

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 μ m.	-

Version 2.0



**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.

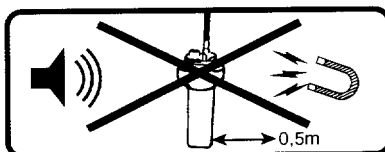
TEST INSTRUCTIONS

- 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 :	

VESSEL NAME

Next control

Battery replacement

IESM serial number

Hex. code - 15 -

**BEACON
DECAL
HERE**

IMPORTANT
Battery replacement by recommended
agent only
- Do not open Epirb
- Do not charge batteries

The owner of this 406.025Mhz EPIRB
must register the NOAA identification
code contained on this label with the
National Oceanic and Atmospheric
Administration (NOAA)
whose address is :
NOAA, NOAA/SARSAT
Operations Division
E/SP3, Federal Building 4
WASHINGTON DC 20233

FCC ID N° :

Temperature : -20° C : +55° C
Minimum operational duration : 50 h

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

1402A

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 :	

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 :	

APPROVAL CERTIFICATES