WORLD LEADERS

Thrane & Thrane is the world's leading manufacturer of mobile satellite and maritime radio communication. We develop and market innovative and reliable communication equipment for use at sea, on land and in the air.

Innovation without limits

Our focus on new technology and constant innovation has assured us a position as preferred development partner for Inmarsat, the leading satellite service provider. We have developed the ground infrastructure for Inmarsat's new powerful I4 satellite services, and have been fundamental in the development of the new BGAN high-speed mobile communication terminals. The same engineering passion and capability is exercised in developing all maritime communication equipment.

50 years of maritime tradition

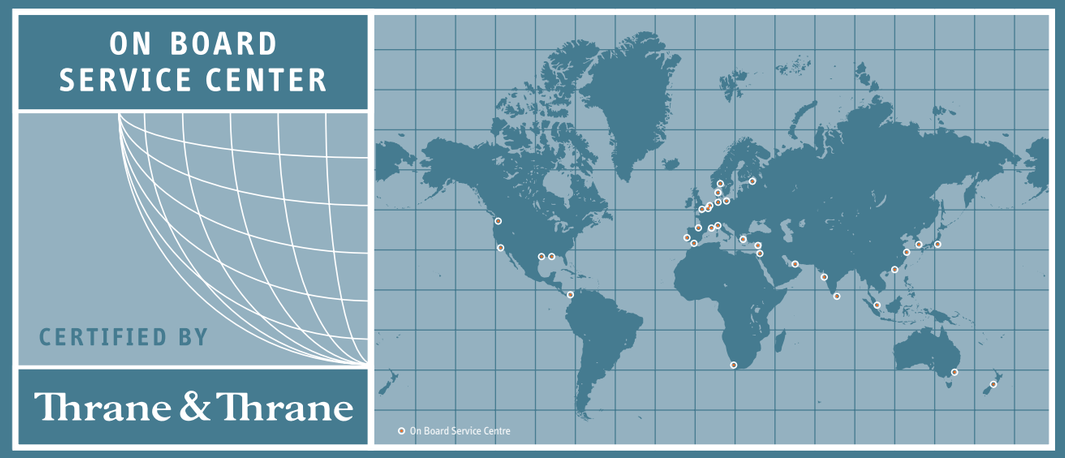
In 2004 Thrane & Thrane acquired the SAILOR brand, adding more than 50 years of experience in maritime communication to our range. Thrane & Thrane now offers a complete selection of reliable, innovative and user-friendly maritime solutions that improve safety and daily life at sea.
Our SAILOR products range from VHF and MF/HF to complete GMDSS solutions over Inmarsat-C, mini-C, mini-M, Fleet, Iridium and SSAS solutions.

World class service worldwide

When buying Thrane & Thrane you buy not only state-of-the-art technology but peace of mind. We are renowned for our World Class Service program. Distributors and service centres in harbours all over the world are supported by Thrane & Thrane so they in turn are able to support you in accordance with our World Class Standards.

On Board Service Centers – certified by Thrane & Thrane

A network of On Board Service Centers – supplementary to the distributor and dealer networks – offer on board service and repair. Every measure is taken to provide efficient first-time-fix support. All On Board Service Centers have a close relationship with Thrane & Thrane. Original spare parts are kept in stock and service engineers receive intensive factory training. Heartening to know, when both business and life depend on communication.



TRACKING SOLUTIONS THAT MINIMIZE COSTS AND MAXIMIZE SAFETY

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Thrane & Thrane

Thrane & Thrane

THE LEADING TRACKING AND SAFETY SOLUTION FOR FISHERMEN

Today, it is mandatory for fishing vessels in more than 40 countries around the world to carry satellite tracking equipment. In most of these countries Thrane & Thrane is the leading supplier. Since the mid-90's Thrane & Thrane has delivered more than 18.000 Inmarsat-C and mini-C terminals for monitoring solutions all over the world. From Angola to Uruguay, among the world's largest fishing fleets, on small shrimp boats and large deep sea trawlers you'll meet Thrane & Thrane solutions.

Comply with authority requirements at lowest possible cost

Tracking and monitoring of fishing vessels are done for many reasons. Quotas, safety and international regulations are among the chief. In most circumstances the requirements are formulated by the authorities.

The SAILOR mini-C solutions are designed to minimize the airtime traffic you need to pay for. As one of the few solutions on the market the built-in Vessel Monitoring System allows event based position reporting. This means that the solution only transmits when it is truly necessary. At the same time the SAILOR mini-C provides the owner with a range of other useful applications for the technology – such as e-mail, free Enhanced Group Call reception and Inmarsat-C maritime distress. Because even though it is mandatory, you should still get the most of it.

Small, discreet and easy to install

The SAILOR mini-C products from Thrane & Thrane are the world's first mini-C tracking solutions. They consist of one small integrated unit housing a 12-channel GPS receiver, Inmarsat-C antenna and transceiver. Fully sealed and water proof, the mini-C is designed and approved for maritime installations. Yet, it weighs only 1.1 kg and measures 16 cm in diameter. This means it is very easy to fit, cabling costs are low, and weak links in the installation are minimized. The result is a reliable and cost efficient tracking and safety solution.

Inmarsat-C – Global tracking, safety and messaging

Inmarsat introduced maritime satellite communication services in 1979. Today it is the leading provider not only for professional maritime purposes, but for business people, TV broadcasters, aid workers, airlines and many others.

In 1989 Inmarsat introduced the Inmarsat-C service offering global two-way packet data service, ideal for tracking, monitoring and safety messaging purposes. The service was originally specified by the International Maritime Organization in order to improve safety at sea. Inmarsat-C is today the mandatory installation for all ocean going vessels above 300GT.

In 2001 Inmarsat introduced the Inmarsat mini-C service, allowing manufacturers to develop more compact and less power consuming tracking equipment. Today mini-C is used primarily for Ship Security Alert Systems and vessel monitoring around the World.

ALL THAT IS REQUIRED AND A LOT MORE

THE BASICS

The SAILOR mini-C solutions offer three types of basic functions: Data Reporting, Polling and Two-way Messaging.

Data Reporting

With built-in GPS receiver the SAILOR mini-C always keeps track. The position information is transmitted to the on shore recipients in short data reports via the Inmarsat-C network. The intervals between reports may be determined by a fixed schedule, by certain events, or by remote polling from i.e. the monitoring authority.

A standard data report contains information about latitude, longitude, speed, course, time, date as well as the SAILOR mini-C identity number. However, the data report package can be tailored to suit even the most specific needs: With Vessel Monitoring System (VMS) – or automatic event based reporting – the SAILOR mini-C will append additional data of what generated the report.

Polling

Polling allows configuration and control of the SAILOR mini-C from the shore. The monitoring authority can request an instant position report or change the data reporting intervals by a single command. You can also change and maintain the SAILOR mini-C's VMS configuration from afar. And you can do it all either one ship at a time or an entire fleet at once.

Two-Way Messaging

Inmarsat-C makes it possible to send and receive different types of text messages. Install the free easyMail program on a pc connected to the SAILOR mini-C, and you are all set to receive Enhanced Group Calls or send catch reports at all times. You can also exchange e-mails, SMS, fax, telex and special messages to other Inmarsat-C or mini-C terminals.

STATE OF THE ART: VESSEL MONITORING SYSTEM

The SAILOR mini-C is one of the few tracking solutions that come with built-in Vessel Monitoring System (VMS). VMS provides a number of advanced tracking functions that give the user greater control and eliminates unnecessary reporting. It only transmits, when something that needs to be reported happens, so called event-based data reporting. This saves airtime and ensures that relevant information is always reported. The VMS gives several different options which can be configured either at installation or via remote polling.

GeoFencing

With GeoFencing you can divide relevant sea areas into a range of geographical zones. This means you can define special areas of interest where specific reporting intervals come into effect. The SAILOR mini-C can also report when the vessel moves in or out of pre-defined zones. It is thus possible to specify automatic position reporting at sea only, and not in the home port. With VMS you don't pay for unnecessary airtime.

Auxiliary Control

The SAILOR mini-C can control auxiliary units via its digital input/output pins. It can thus be used to detect switch changes or power failures, or it can initiate a data report when trawls or other machinery is activated.

Power Control

Should the SAILOR mini-C suffer a power loss, it will after power return and retuning immediately transmit two reports: Time and position before power down followed by current position and time stamp.

Signal Loss Control

If, for some reason, the Inmarsat satellite signal is blocked or lost, the SAILOR mini-C will store the time and GPS positions in the internal memory. When the signal is re-established the data are immediately reported.

FURTHER FUNCTIONS

GPS Position Log

The SAILOR mini-C automatically logs more than 10.000 positions along with information about speed, course and different events. The data are logged at predefined intervals independently of normal reporting. This amounts to a full log of the vessel's whereabouts for several months which can always be retrieved from the system, either directly or via remote polling. Crucial for documentation purposes, for instance.

Free Enhanced Group Calling (EGC)

The SAILOR mini-C (TT-3026S & TT-3026D) can receive Enhanced Group Calls (EGC), improving safety and daily life at sea. This free-of-charge maritime safety information is broadcasted 24/7 to all sea areas via the Inmarsat-C network, either as SafetyNet or FleetNet information. SafetyNet messages include severe weather warnings, drifting goods notifications and distress information about nearby ships typically transmitted from the nearest Marine Rescue Coordination Centre (MRCC). FleetNet could be general information from flag authorities on shore. The EGC reception, configuration and print-out are done easily via the free easyMail PC program from Thrane & Thrane.

Maritime Distress Calling – increased safety on board

The SAILOR TT-3026D mini-C features the advanced and reliable Inmarsat-C maritime distress function – based on the well-known and unique Inmarsat-C distress service that is defined by IMO and an integral part of GMDSS. No matter where you go and how wild the sea, pressing the distress button activates a high priority distress message relayed automatically to the nearest MRCC. The MRCC will respond with rescue coordination activities including EGC SafetyNet messages to all nearby vessels. And you only get it with Inmarsat-C.

easyMail

easyMail is Thrane & Thrane's free messaging PC-program. All you need to take advantage of the convenient messaging functions in the SAILOR mini-C solutions is to download easyMail from www.thrane.com and hook up a PC to the SAILOR mini-C. With easyMail, composing and reading e-mail, SMS, EGC, and other messages is exactly that – easy!

ALL THE FACTS

THREE DIFFERENT MODELS

With SAILOR mini-C from Thrane & Thrane you can choose between three different versions.

- TT-3026M: The most simple configuration providing full tracking functionalities, VMS and messaging.
- TT-3026S: Include EGC SafetyNet and FleetNet reception capabilities.
- TT-3026D: Beyond EGC reception features Inmarsat-C maritime distress calling providing full tracking and safety system on board.

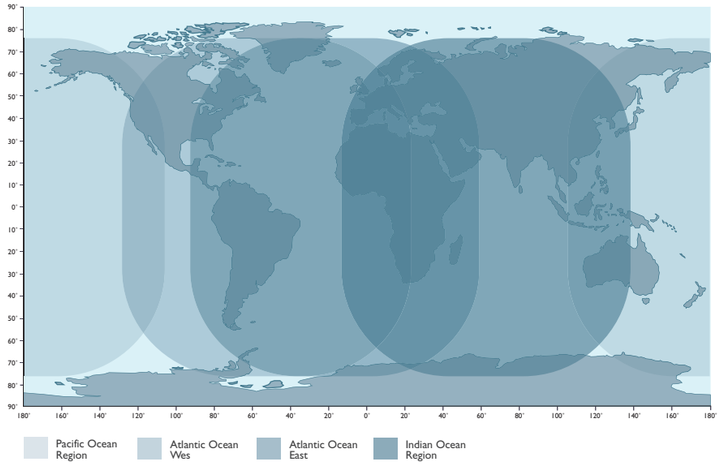
Mini-C Variants	TT-3026M	TT-3026S	TT-3026D
Tracking & Polling	•	•	•
Messaging	•	•	•
Vessel Monitoring System & Log	•	•	•
Enhanced Group Calling (EGC)	–	•	•
Inmarsat-C Maritime Distress	–	–	•
Required Accessories	(easyMail – for messaging)	easyMail	easyMail TT-3042E Distress Box

Accessories program include: Antenna mountings, antenna cables, interconnection box, power supply etc.

IMPORTANT FEATURES

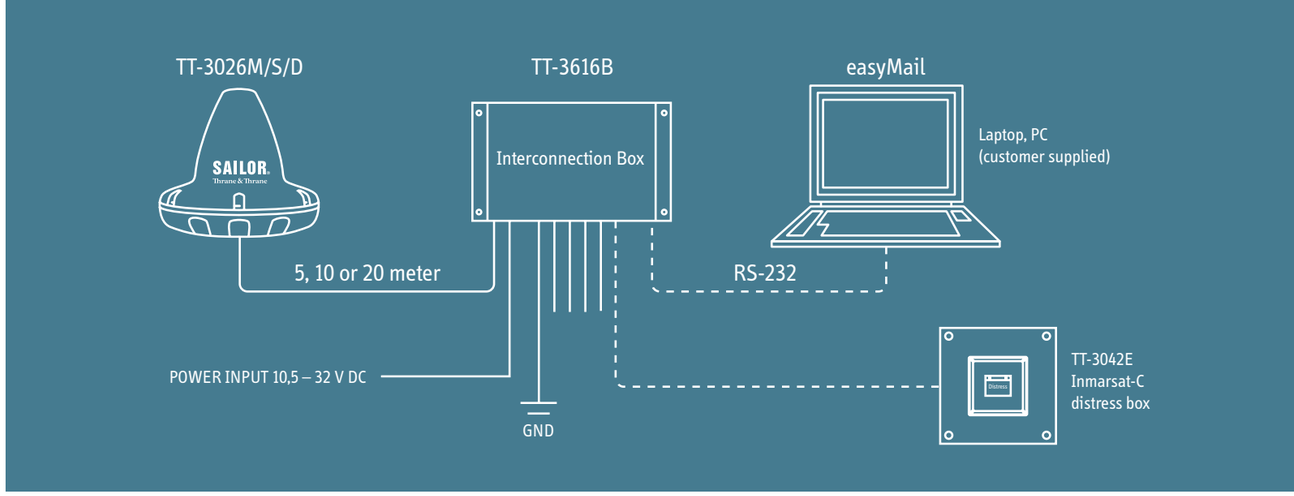
- Inmarsat-C Global Coverage
- Global tracking, polling and two-way messaging
- Remote polling for mini-C terminal status and configuration at any time
- Vessel Monitoring System allows event based position reporting
- e-mail, SMS, Fax, Telex and other messages via easyMail
- Maritime safety information through Enhanced Group Calling (TT-3026S & D)
- Inmarsat-C Maritime Distress (TT-3026D)
- Fully sealed and water proof. Designed and approved for maritime installations.
- Simple installation

INMARSAT-C GLOBAL COVERAGE



Inmarsat is currently launching the the 4th generation of their satellite network. The new I-4 satellites will boost the capacity and power of the Inmarsat services immensely.

The SAILOR mini-C transceivers are ready for use with the I-4 satellites ensuring reliable communication for the future.



Technical Specifications

GENERAL

General specifications	Meets all Inmarsat specifications for the Inmarsat mini-C network for marine terminals.
Inmarsat type approvals	TT-3026M: 4TT088 TT-3026S: 4TT089 TT-3026D: 4TT092

mini-C TRANSCIEVER

Antenna specifications	Inmarsat-C/GPS omni-directional antenna. RHC polarised. G/T: -23.7 dB/K at 5° elevation. EIRP: 7 dBW at 5° elevation. Elevation angle: -15° to 90°.
Operating frequencies	Rx: 1525.0 – 1559.0 MHz.* Tx: 1626.5 – 1660.5 MHz.* GPS: 1575.42 MHz. * Inmarsat frequencies: Rx: 1525.0 – 1545.0 MHz, Tx: 1626.5 – 1646.5 MHz
GPS module	12- Channels. 1 sec update rate. 15 m RMS accuracy.
Solar radiation	Maximum flux density: 1200 W/m^2.
Precipitation	Up to 100 mm/hour, droplet size 0.5 to 4.5mm at wind speed up to 200km/h (124 mph).
Ice	Up to 25 mm.
IP rating	Lloyds approved for IP66. Tested for IP68 by Thrane & Thrane
Temperature range	Operating: -35°C to 55°C. Storage: -40°C to 80°C.
Fuse	Self recovering Poly fuse.

POWER SPECIFICATIONS

Power source, floating DC (at max. 20 meter cable)	Nominal: 12V – 24V Operating: 10.5V – 32V
Power consumption	Rx: 1.8W (stand by) Tx: 23W (at 12V DC supply)
Power consumption using sleep mode. Examples shows mini-C configured for sleepmode combined with different data reporting intervals.	15 minutes / 288 mW 30 minutes / 148 mW 1 hour / 78 mW 2 hour / 43 mW 5 hour / 25 mW 10 hour / 16 mW 24 hour / 11 mW

mini-C TRANSCEIVER INTERFACE

RS232 serial port	EIA/TIA-232-E interface. CCIT Rec.V.24/28, 4800-115200 Baud
Input / Output interface (at max. 20 meter cable)	Up to 5 user configurable I/O pins (depending on model). Sinks 25 mA each.

COMMUNICATION SPECIFICATIONS

General	Automatic ocean shift for global coverage. 24 hour scanning for strongest signal; scanning on signal loss.

MESSAGING

Data rate	Rx, Tx: 600 bit/sec.
Message size	Tx: Max. 10 Kbytes. Rx: >32 Kbytes (storage).
Message storage capacity	175 kB SRAM
Transmission and reception to/from the following destinations:	Telex PSTN (telephone and fax* modems) PSDN (X.25 network) Special Access Code (e-mail, SMS) DNID Messaging *Only Tx

DATA REPORTING

Protocol support	Enhanced Data Reporting for full acknowledged binary transfer ensuring secure and reliable end-to-end reporting.
Polling and Datareporting interval	Down to 1 per 5 minutes.
Number of Data Network ID's	Up to 64
Global data reporting	Autogrouping of Data Network ID's (supports Inmarsat CN142)

ENHANCED GROUP CALLING (EGC) (TT-3026S & TT3026D only)

Type	EGC message reception with automatic area selection

DISTRESS (TT3026D only)

Type	Inmarsat-C maritime distress

DIMENSIONS AND WEIGHT

TT-3026M/S/D mini-C transceiver:	Width: 163 mm (6.4") Height: 146 mm (5.7") 1.1 kg (2.4 lbs)
TT-3616B Interconnection Box	Width: 117 mm (4.6") Height: 64 mm (2.5") Depth: 22 mm (0.9") Weight: 0.24 kg (0.5 lbs)
TT-3042E Inmarsat-C Remote Distress Box	Width: 90 mm (3,4") Height: 90 mm (3.4") Weight. 0.3 kg (0.66 lbs)