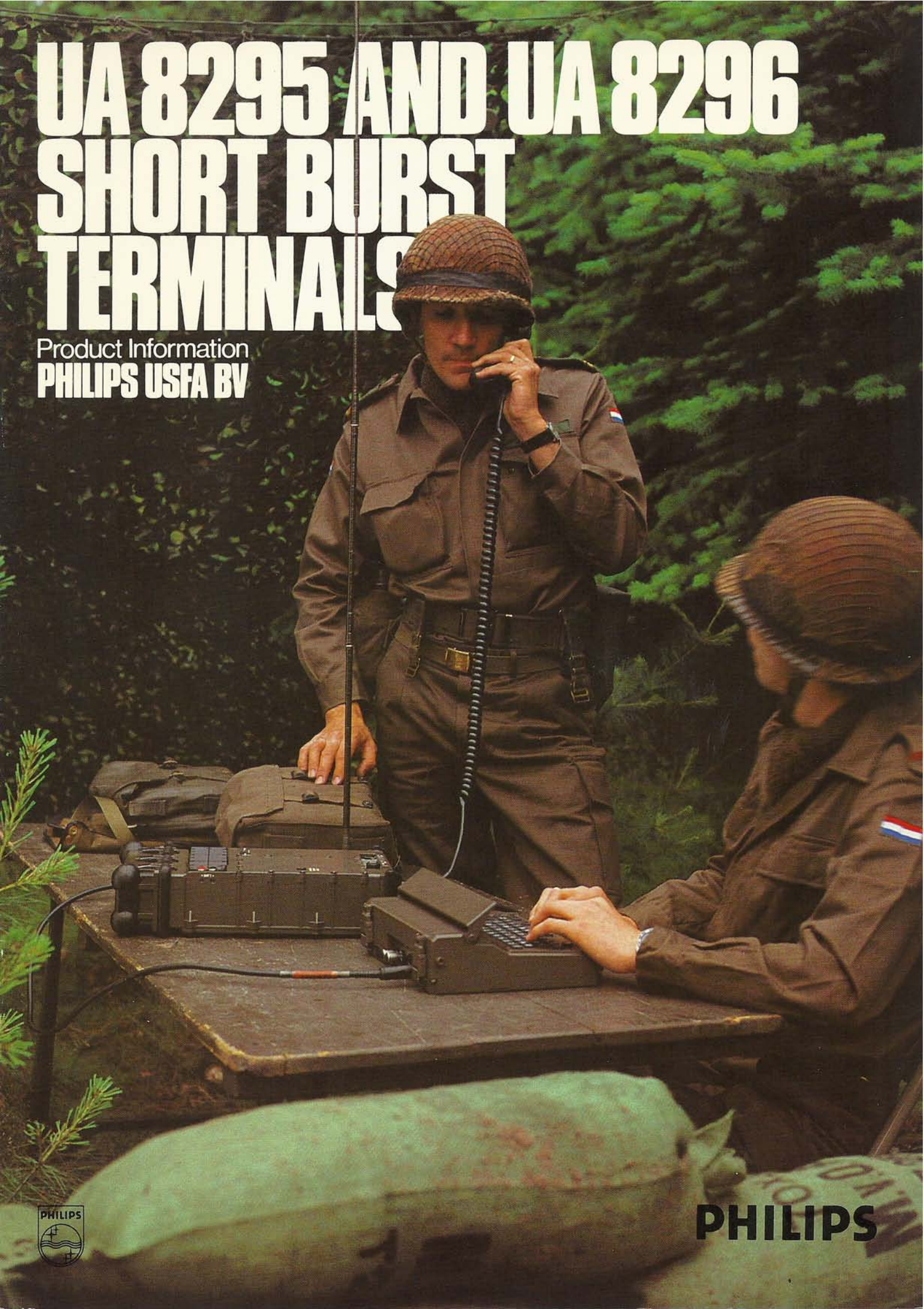
UA 8295 AND UA 8296 SHORT BURST TERMINALS

Product Information

PHILIPS USFA BV



PHILIPS

Secure communication

As communication technology develops, so the possibility of hostile interference and monitoring calls for elegant security measures that can be exploited practically at field level, under combat conditions.

Equally, flexibility in application places demands on the systems designer.

UA 8295/00 Short burst terminal

The UA 8295/00 is a microprocessor-based, self-contained and fully portable (weight 3 kg) digital message terminal for transmitting and receiving data over radio and land lines. Possible configurations are flexible and direct interfacing to printer and computer is provided.

Communications today need the capability of being interfaced directly with computers, high speed printers and other ancillary equipment.

Usfa's digital message transmission terminals provide state-of-the-art equipment to fulfil needs in tactical communication.

Fast, short burst transmission, off-air error correction features and fixed message option minimise on-air time, effectively reducing hostile attempts to direction-find or jam the transmissions.

Usfa offers an integrated system of terminals and associated accessories that will interface with a wide variety of transmission, computing and ancillary equipment.

Keyboard and display

The keyboard, in standard qwerty-form, is a 55 key silicone rubber assembly, with tactile feel as characters are keyed. A 32 character LED display, with brightness control, enables the input to be reviewed, or the memory to be read, with ease. A built-on visor enables the display to be shaded under very bright light conditions.

Memories

The internal memory capacity can hold 2000 characters or 8 messages in the input memory, and the output memories can hold 2000 and 250 characters respectively.

Exceptionally flexible interfacing

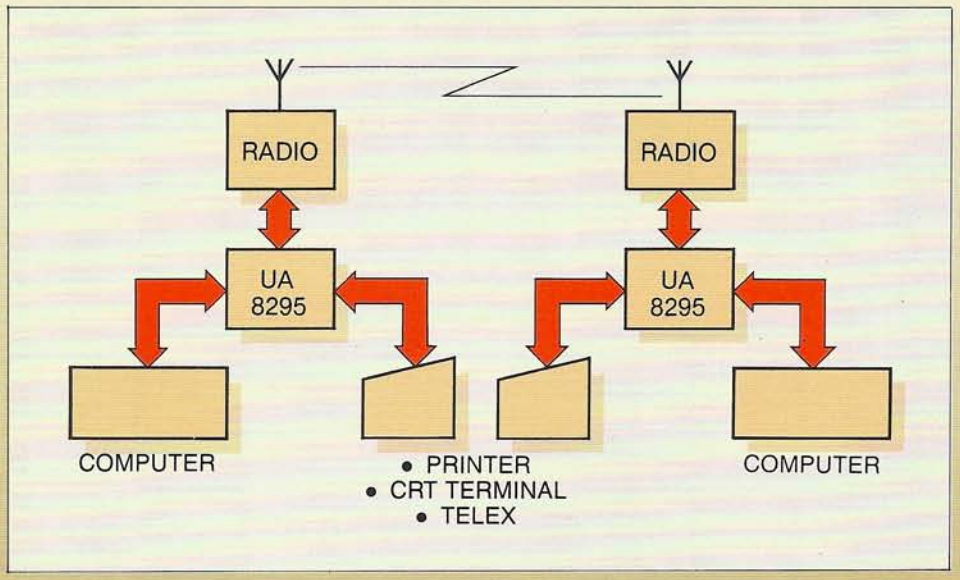
The message terminal, in addition to interfacing directly with any ordinary combat radios at voice grade speeds of 150 to 600 Bd offers wide flexibility. In the audio interface a powerful modem comes into play and this makes it possible for the terminal to transmit by HF, UHF or VHF radio, without any adjustment by the operator.

The terminal can also be used to communicate with a battle computer. The third interface (RS422) communicates at speeds between 110 and 1200 Bd enabling data to be entered into a computer. For example a forward artillery observer could directly enter range, and bearing data for the computer to accept into a fire control calculation. Moreover using this mode the therminal can be used to program a computer in the field.

For printing, an RS 232C interface connects with a printer and communicates at speeds between 50 and 1200 Bd, selectable by the operator.

Reliability

The Usfa team has strived to achieve the best possible reliability and examples passed for delivery have been subjected to pre-aging over several weeks. Failure in service is consequently a rare occurence.



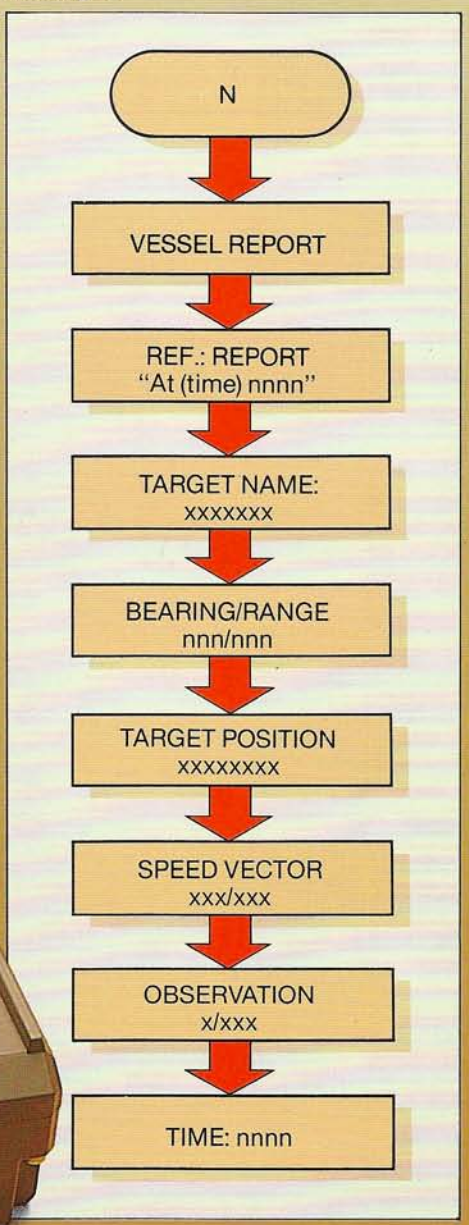
Service
Modular design and construction simplifies fault finding and repair.

Software
The state-of-the-art software is modular in form, and versatile, allowing easy custom-tailoring of the terminal to the user's particular requirements.

Two microprocessors are incorporated. The main one contains the message handling programs, the operator/terminal communication programs, and the device drivers. The modem processor is programmed not only for transmission, but also for the hunting and reception of messages.

Environmental conditions
The unit is extremely rugged and will withstand severe vibration, shock, heat and cold, and total immersion in water.

Power supply
The unit will run off DC vehicle supplies in the range 10-30 V, or, when independent of such supplies, 4 D-size cells.



ECCM
The terminal contains a data modem for fast transmission and an automatic error-correction facility which minimises the need to repeat messages. This short on-air transmission protects the transmitter connected to the terminal from hostile interception, direction finding or jamming.

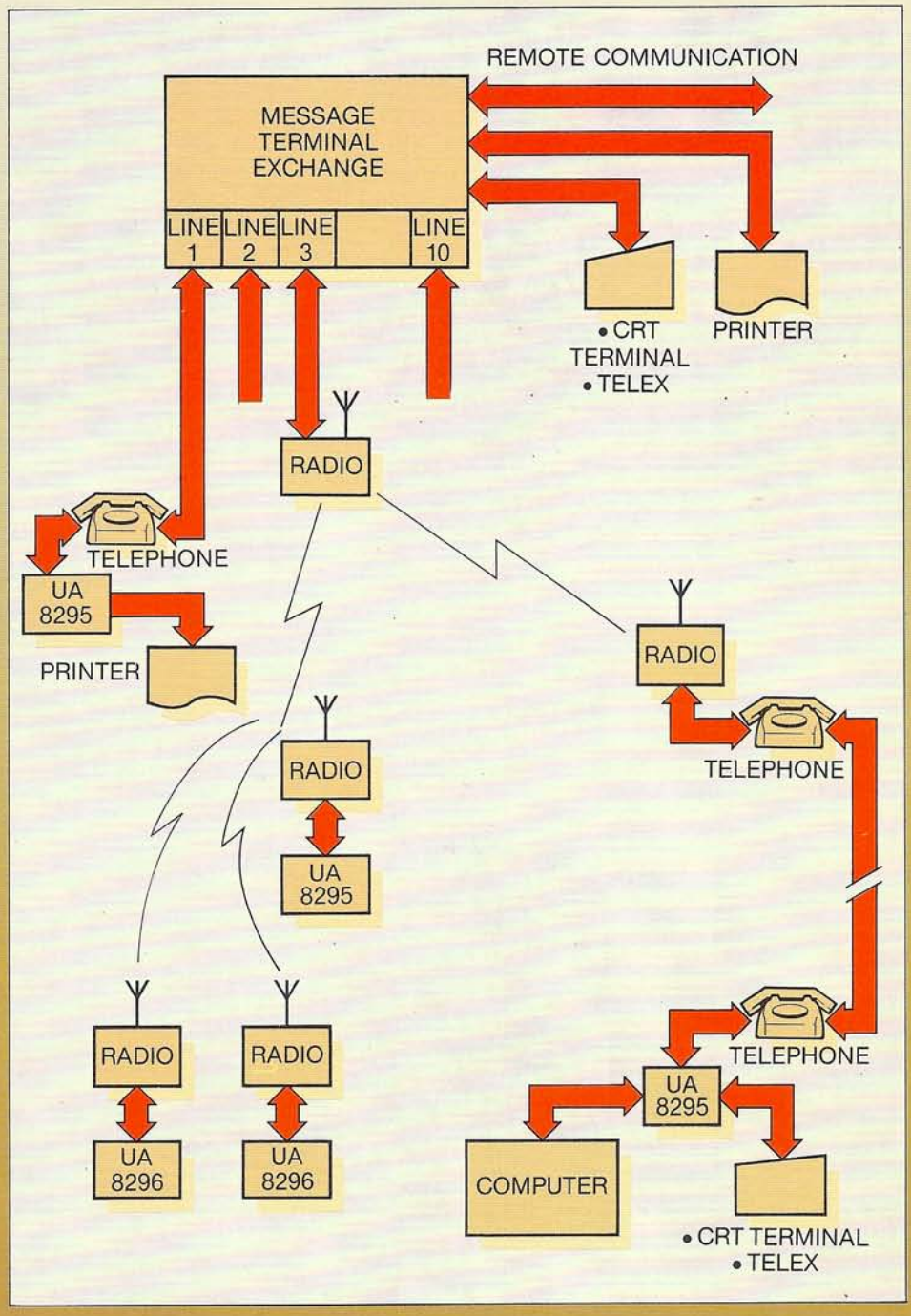
Enciphering
The enciphering algorithm is embodied in software, and can be tailored to the user's requirements. The secret software key required by the algorithm is entered via the keyboard. The input of the correct secret software key is acknowledged by a numerical display, but the key itself is never displayed. This key can be quickly changed by an authorised party. Capture of a terminal cannot jeopardise the security of a current software key in use by other terminals, nor can it break the security of the system at a future date.

Messages entered en clair are automatically en-crypted into 5-letter groups for transmission, and in turn incoming matter is de-crypted automatically before display.

Formatting
Since so much intelligence matter can be of a repetitive nature, the software permits fixed formats to be programmed. Thus a particular format may be accessed by keying its identification, and as each segment of the format is displayd the variables (identification of hostile forces, observations, bearings, distances) can be entered. The terminal performs a check on the message format automatically. There is also the possibility to append a free format postscript to the fixed format message.

Automatic acknowledgement
There exists the possibility of an automatic message-received acknowledgement which can be disabled at will. The sending terminal waits three seconds for the acknowledgement.

Man/machine interface
The readout is a 32 character LED with variable brightness.



Clock function
In addition to the practical usefulness of the integral real-time clock, the unit is programmed to automatically compare the time of transmission information on incoming messages with the terminal's clock. Differences are highlighted automatically to act as powerful security check. Discrepancies between transmission time and reception time reveal hostile interception and re-transmission.

UA 8296 hand-held patrol terminal

The UA 8295/00 message terminal, although light and portable, is really intended for command post and in-vehicle use.

For combat patrols, a smaller, more portable hand-held version, the UA 8296/00, incorporates similarly sophisticated encryption and memory features to the larger unit, but weighs a mere 1 kg and has a condensed keyboard.

Keyboard and display

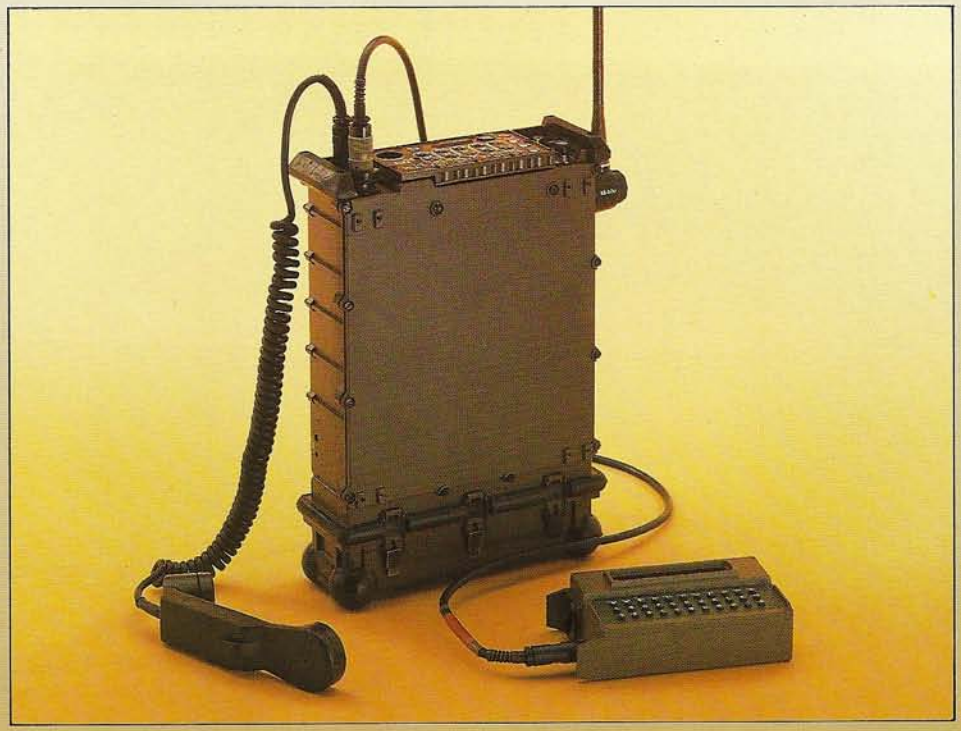
Although small at 200x110x40 mm, the keyboard has 33 keys in standard qwerty layout. An LED display shows up to 16 characters.

Memories

The internal memory capacity can hold 2000 characters or 8 messages in the input memory, and the output memories can hold 2000 and 250 characters respectively.

Interface

The terminal will interface with any standard combat radio, regardless of make or type, typically with voice grade 150 and 600 Bd transmission rate systems. It does not offer the additional printer and computer interfaces, however.



Power supply

The patrol terminal contains 6 AA size cells, and can also be run off external DC supplies in the range 10-30 V. To conserve the batteries the display is automatically switched off 30 seconds after the last key stroke. Pressing any key turns it on again.

Environmental conditions

The unit is extremely rugged and will withstand severe vibration, shock, heat and cold, and total immersion in water.

Software

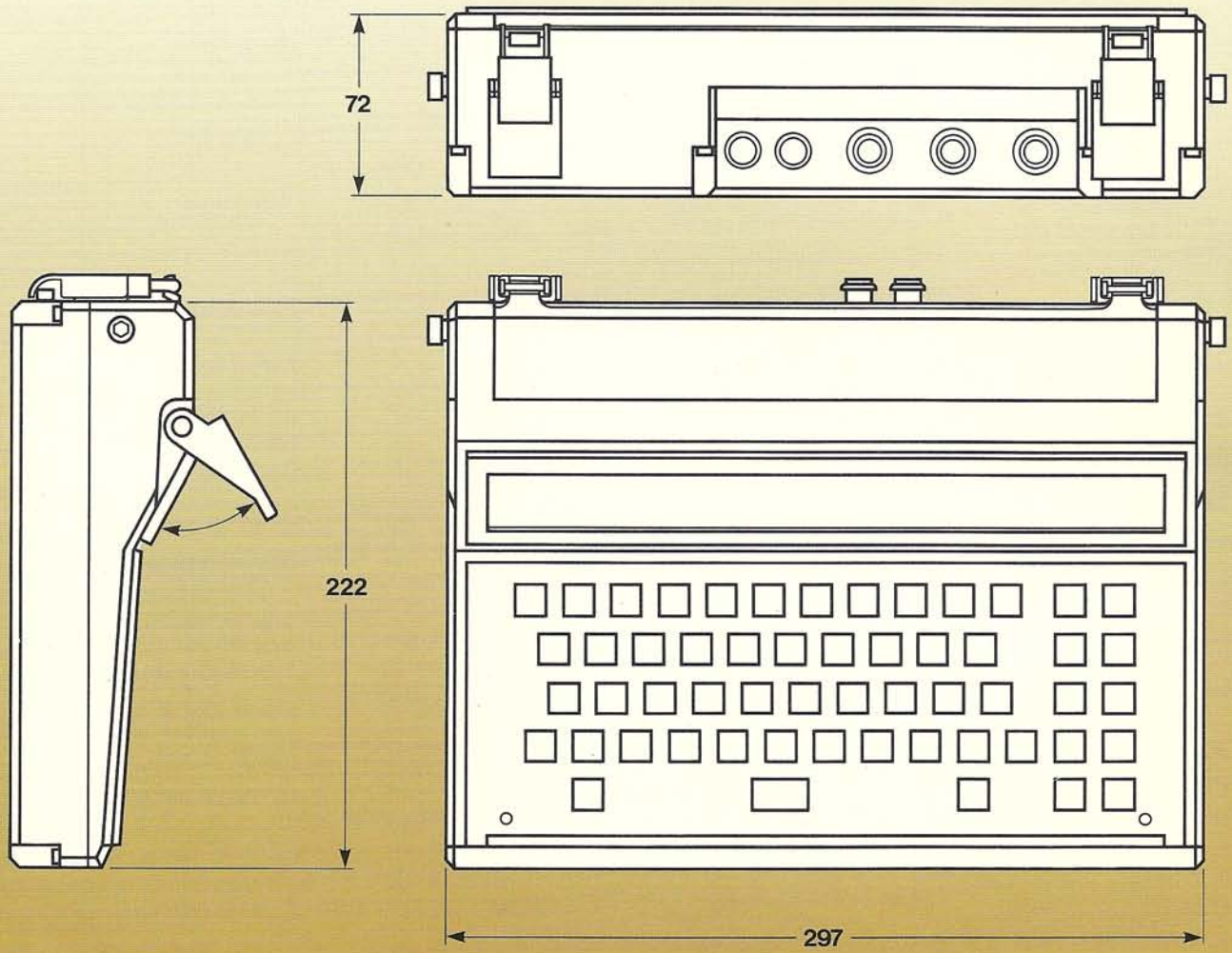
Although the patrol terminal is condensed in size the software capability is identical with the UA 8295/00.

Automatic ackowledgement

There exists the possibility of an automatic message-received acknowledgement which can be disabled at will. The sending terminal waits three seconds for the acknowledgement.

Man/machine interface

The readout is a 16 character LED. Nine function keys are provided in addition to the standard keyboard, and each of these can be programmed for a second function accessed by the keyboard shift key.



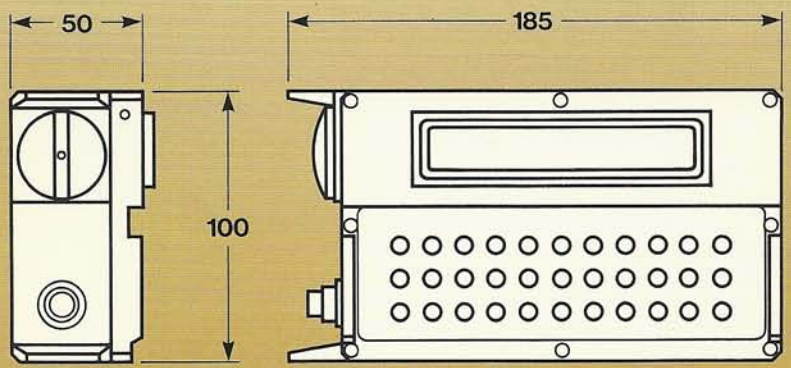
UA 8295/00 SHORT BURST TERMINAL TECHNICAL DATA

Display	32 character LED display	
Keyboard	55-key silicone rubber keyboard	
Memory capacity	Output memories	2000 characters 250 characters
	Input memory	8 messages or 2000 characters
Interfaces	Communications equipment	Voice grade 150 and 600 Bd
	Printer	RS-422, 110-1200 Bd
	Computer	RS-232, 50-1200 Bd
Power supply	Battery	4 D-size cells
	Battery life	24 h in normal use
	External power	10-30 V DC
Dimensions and weight	Size	300x220x70 mm
	Weight	3 kg

With a few additional parts the terminal can be attached to a flat surface.

UA 8295/00 SHORT BURST TERMINAL ENVIRONMENTAL SPECIFICATIONS

Operating temperature	IEC 68-2-1 IEC 68-2-2	Test Aa, – 40°C, 16 h Test Ba, + 55°C, 16 h
Storage temperature	IEC 68-2-1 IEC 68-2-2	Test Aa, – 55°C, 72 h Test Ba, + 75°C, 16 h (without batteries)
Rapid change of temperature	IEC 68-2-14	Test Na, 30 min, 5 cycles ± 20°C/ – 40°C (Two-chamber method)
Vibration	IEC 68-2-6	10 Hz...60 Hz constant amplitude of 0,35 mm, 60 Hz...500 Hz constant acceleration of 49 m/s², 90 min
Shock	IEC 68-2-27	490 m/s², half-sine, 11 ms, 3 shocks in 3 perpendicular directions
Bump	IEC 68-2-29	245 m/s², half-sine, 6 ms, 1000 bumps in 3 perpendicular directions
Humidity	IEC 68-2-30	Test Db, 95%/ + 55°C 12 h, 95%/ + 25°C 12 h, 2 cycles
Free fall	IEC 68-2-32	750 mm, dropping on to each side, edge and corner
Protection against ingress of liquid	IEC 144	Test IP67
Electromagnetic emission and susceptibility	MIL-STD-461B	Class A3



UA 8296/00 PATROL TERMINAL TECHNICAL DATA

Display	16 character LED display	
Keyboard	33-key silicone rubber keyboard	
Memory capacity	Transmit memory	2000 characters
	Receive memory	8 messages or 2000 characters
Interfaces	Communications equipment	Voice grade 150 and 600 Bd
Power supply	Battery	6 AA-size cells
	Battery life	20 h in normal use
	External power	10-30 V DC
Dimensions and weight	Size	200x110x40 mm
	Weight	1 kg

UA 8296/00 PATROL TERMINAL ENVIRONMENTAL SPECIFICATIONS

Operating temperature	IEC 68-2-1 IEC 68-2-2	Test Aa, −40°C, 16 h Test Ba, +55°C, 16 h
Storage temperature	IEC 68-2-1 IEC 68-2-2	Test Aa, −55°C, 72 h Test Ba, +75°C, 16 h (without batteries)
Rapid change of temperature	IEC 68-2-14	Test Na, 30 min, 5 cycles ±20°C/−40°C (Two-chamber method)
Vibration	IEC 68-2-6	10 Hz...60 Hz constant amplitude of 0,35 mm, 60 Hz...500 Hz constant acceleration of 49 m/s², 90 min
Shock	IEC 68-2-27	490 m/s², half-sine, 11 ms, 3 shocks in 3 perpendicular directions
Bump	IEC 68-2-29	245 m/s², half-sine, 6 ms, 1000 bumps in 3 perpendicular directions
Humidity	IEC 68-2-30	Test Db, 95%/+55°C 12 h, 95%/+25°C 12 h, 2 cycles
Free fall	IEC 68-2-32	750 mm, dropping on to each side, edge and corner
Protection against ingress of liquid	IEC 144	Class IP67
Electromagnetic emission and susceptibility	MIL-STD-461B	Class A3

Company profile

Philips Usfa B.V. has more than 30 years' experience in the development and manufacture of electronic and electro-optical military equipment. The company has direct access to the high-level expertise and advanced technology of the entire Philips Concern, including the facilities of the Philips Research Laboratories.

Comprehensive facilities, together with experience and craftmanship, provide an ideal environment for modern, project-oriented development, manufacture, repair and maintenance operations. Current projects include contributions to large military programmes as fully qualified subcontractor.

Philips Usfa B.V. meets NATO AQAP-1 quality control system requirements for industry, as laid down in STANAG-4108, which is generally recognized as one of today's most stringent industrial quality-assurance programmes for military equipment.

For further information please contact:
Philips Usfa B.V. Meerenakkerweg 1, Postbus 218, 5600 MD Eindhoven, The Netherlands. Tel. (0)40 722600 Telex: 51732 USFAENL

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