

COMMUNICATION



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EXPLOSION PROOF PRODUCTS AND SOLUTIONS FOR HAZARDOUS AREAS.

Equipment supply, Engineering and Manufacturing.

Inpratex provides a wide range of custom-made products and solutions for different industries operating in hazardous and potentially explosive environments.



Inpratex SL is based in Eibar (Gipuzkoa, Spain). We are specialists in supplying equipment, in engineering and in the manufacture of products for industries working in Hazardous Areas.

Our engineering team provides solutions combining the limitations related to the use of the equipment with the potentially dangerous environment in which it must be used.

Inpratex supplies ATEX/IECEx equipment and custom-made solutions for manufacturing and process industries.



7

COMMUNICATION





7 - COMMUNICATION

ATEX-certified Analog fixed telephones, suitable for extreme environmental conditions in explosive atmospheres caused by gases and vapours, and by dust in suspension.

Professional ATEX-certified walkie-talkies, designed and manufactured to prevent ignition of the explosive atmosphere around them. Their certification allows them to work inside potentially explosive areas.

Certified Howl-call phones for communication inside tunnels and in mines, or in those confined spaces where it is extremely complicated to receive or send communication signals. Communication systems that don't need an external power supply to be able to communicate in such difficult areas as inside of mines, tunnels, collectors, offshore platforms and in general all those places where a safe communication is needed in zones with risk of explosion.

All our communication devices are ideal for use in refineries and pipelines, chemical and pharmaceutical industries, ports, airports, etc...

ANALOG PHONES

VOIP PHONES

WALKIE TALKIES

HOWL-CALL TELEPHONES

EXRESISTTEL TELEPHONE (ANALOGUE)

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 1, 2 (gas) & 21, 22 (dust)



Communication devices for uses in firedamp-endangered industrial areas must be particularly adjusted to their extreme operating conditions. This ex telephone has been specially designed for applications in the petrochemical industry, as well as offshore installations, mills and port facilities. It is resistant to high temperature differences, humidity, sea water, dust and extensive mechanical strain.

The ExResistTel is certified for areas susceptible to explosive dusts and gases. It is equipped with a 21-key stainless steel keypad that has been especially designed for use with gloves.



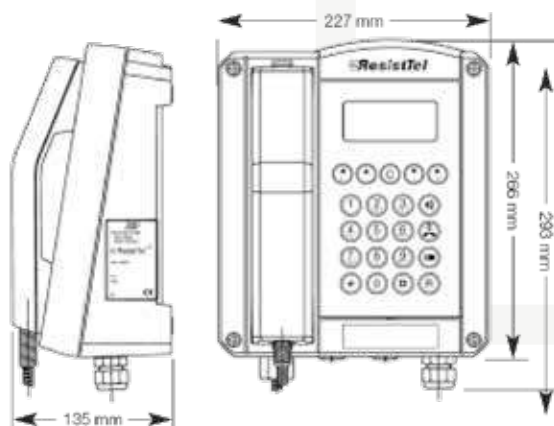
EU-Type Examination Certificate

ITEM REFERENCES

Designation:	Model:	Item No.:
ExResistTel	With keypad and display	4A0101
ExResistTel	With keypad and display, protection class I	4A0102
ExResistTel ZB	Without keypad and display	4A0103

TECHNICAL SPECIFICATIONS

Marking:	<p>II 2G Ex e mb [ib] IIC T5 Gb</p> <p>II 2D Ex tb [ib] IIIC T80°C Db</p> <p>-25°C ≤ Ta ≤ 60°C</p> <p>II 2G Ex e mb [ib] IIC T6 Gb</p> <p>II 2D Ex tb [ib] IIIC T100°C Db</p> <p>-25°C ≤ Ta ≤ 40°C</p>
Certificate:	EU-Type Examination Certificate
Supply voltage:	24 V...66 VDC
Supply current:	15 mA...100 mA DC
Housing:	Glass fibre reinforced polyester
Ingress protection:	IP66 / IK09
Weight:	Approx. 5,5 kg
Display:	Two-line alphanumeric display with pictograms. Visual field approx. 78 mm x 26 mm
Keypad:	Metal keypad with ice protection. 21 keys with ABC lettering for name entries
Cable entries:	1xM20x1,5 plastic cable gland / 2xM20x1,5 plastic plugs



EXRESISTTEL IP4 VOIP TELEPHONE

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 1, 2 (gas) & 21, 22 (dust)



The ExResistTel IP4 Explosion-proof, weatherproof industrial VoIP telephone is suitable for all indoor and outdoor installations. The new ExResistTel IP4 is the ideal device for every weather and a number of different operation sites, including exposure to seawater, high humidity or extensive mechanical strain.

The housing is made of impact and shock-resistant glass-fibre reinforced polyester, resistant to acids, alkalis or lubricants. Its robust design represents a perfect packaging for the latest requirements for IP telephones in hazardous environments with proven reliability for critical mission communications and high safety applications.

This telephone is designed to provide ultimate user comfort with a userfriendly menu structure and easy installation.

The ExResistTel IP4 meets industrial standards and has decades of marketing leading expertise. It features a luminous display that is able to function in ultra low temperatures mode of expression, a connectable headset is available as an accessory and a hands-free operation.



EU-Type Examination Certificate

ITEM REFERENCES

Designation:	Operating temperature:	Item No.:
ExResistTel IP4 - Black with armoured cord	-40°C to +60°C	4A0105
ExResistTel IP4 - Red with armoured cord	-40°C to +60°C	4A0106
ExResistTel IP4 - Black with spiral cord	-30°C to +60°C	4A0107

TECHNICAL SPECIFICATIONS

Marking:	II 2G Ex eb ib mb [ib Gb] IIC T4 Gb II 2D Ex ib tb [ib Db] IIIC T130°C Db
Certificate:	EU-Type Examination Certificate
Operating temperature:	-40°C to +60°C for devices with steel armoured cord -30°C to +60°C for devices with polyurethan spiral cord
Power supply:	Power over Ethernet according to IEEE 802.3af/at (Mode B) or 802.3bt 44V min, 57V max
Voltage external power:	22,8 VDC - 52,8 VDC
Power consumption:	4 W (POE class 0)
Connection:	Port (10/100 Mbit/s)
Ringing volume:	≥ 95 dB(A) in 1 m distance
Housing:	Glass fibre-reinforced polyester
Ingress protection:	IP66 according to IEC60529
Impact resistance:	IK 09 according to EN IEC 62262:2002
Weight:	Approx. 5 kg
Dimensions:	293 x 227 x 135 mm
Display:	182 x 64 pixels (OLED)
Operating position:	Vertical
Relay switching capacity:	250 VAC 5 A 100 VA 30 VDC 5 A 100 Watt 230 DVC 0.5 A 100 Watt 50 VDC 1 A 50 Watt
Handset:	Mouthpiece: Electret microphone Earpiece: Dynamic capsule with magnetic field generator for inductive coupling of hearing aids Stabilization bracket: Standard equipment

EXRESISTTEL TELEPHONE (IP4)

Zones 1, 2, 21, 22

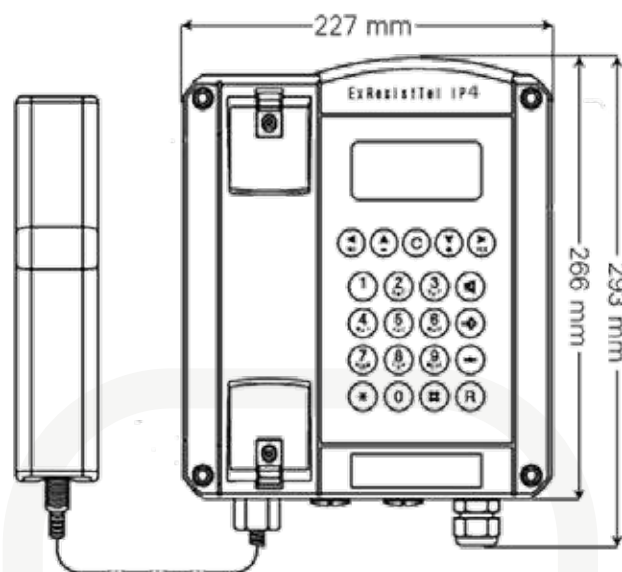
Full catalogue available on our website: www.inpratex.com

CHARACTERISTICS

Protocols:	VoIP Protocols: SIP, H.323 (UDP, TCP, TLS), RTP, SRTP (SDS, DTLS), RTCP, ICE
DTMF:	In-Band, Out-Of-Band, Event
Additional VoIP features:	H.245 fast connect enblock dialing overlapped sending
Security:	Encoded password authentication according to H.235 802.1X
Quality of service:	Prioritization of IP packages over TOS and DiffServ, VLAN priority according to IEEE 802.1p/802.1q
Voice codecs:	G.711 A-law/ μ -law, G.729A, G.722, OPUS (NB/WB)
Administration:	Access using https, Password-protected with secure authentication
Diagnostic tools:	Log and trace files (pcap), status displays of interfaces and connections Ping connection test, sending of SNMP traps
Updates:	Configuration recording/reading Boot code and firmware update via Webinterface Automatic update via update server
WDSL acces:	PPPoE protocol
VPN:	PPP over PPPoE/PPTP
DHCP:	Client with private option codes, server mode
Call tone generation:	Automatic call tone generation according to European and US standard
Multiple registration:	Up to 6 registrations
Telephone book:	Internal, centralized (optional), integration of external data bases via LDAP
Time:	From NTP

ACCESSORIES

Designation:	Item No.:
Ex headset	4A010A
Ex II secondary bell (see next page)	4A010B
Telephone hood model 404 galvanized steel, yellow	118 901 01
Telephone hood model 404 V4A stainless steel	118 901 11
Telephone hood model 404 synthetic material, orange	118 901 12
Telephone hood model 404 synthetic material, yellow	118 901 13
Telephone hood model 404 galvanized steel, red	118 901 14
Telephone hood model 404 synthetic material, red	118 901 15
Telephone hood model 404 GRP, yellow	118 901 22
Telephone hood model 404 GRP, orange	118 901 23
Console for model Yellow	118 901 03
TWIN-EEExII	See data sheet available on our website



ACCESSORIES

Ex headset	TWIN-EEExII	Protection hood
		

EXRESISTTEL TELEPHONE (IP4)

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com



Explosion-proof Secondary Telephone Bell

This high-volume, explosion-proof secondary telephone bell is designed for indoor and outdoor applications in potentially explosive industrial areas, e.g in the petrochemical industry. **Certified for zones 1,2.**

The high-quality materials have priority been tested in the laboratory and allow for uses in extreme application areas of the Ex II industry.

The user may choose between single tone, 2-tone, 3-tone or warble-tone using the available DIP switches. Moreover, the tone sequence frequency can be set in 4 steps between 5 and 20 Hz.



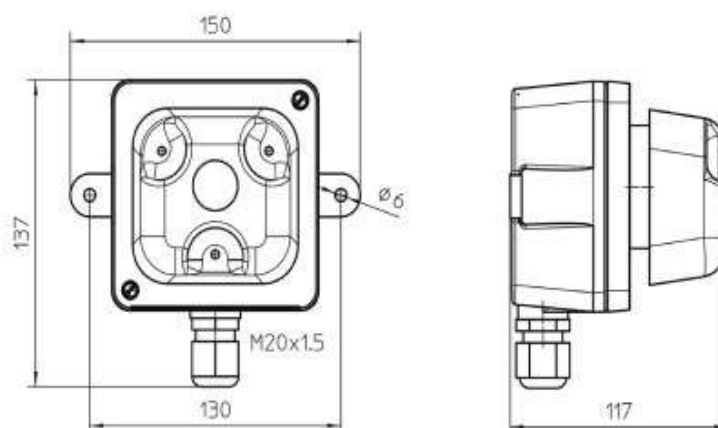
EU-Type Examination Certificate

ITEM REFERENCES

Designation:	Nominal voltage:	Item No.:
Explosion-proof Secondary Telephone Bell	Supplied via telephone	4A010B

TECHNICAL SPECIFICATIONS

Marking:	II 2G Ex em [ib] IIC T6
Certificate:	EU-Type Examination Certificate
Operating temperature:	-20°C to +40°C
Housing:	Die-cast aluminium
Colour:	Black
Hood:	UV-resistant macrolon (polycarbonat)
Ingress protection:	IP66 according to EN 60529
Operating position:	Wall or ceiling mounting
Weight:	0.5 kg
Secondary telephone bell:	The electronic high-volume secondary bell is operational even in case of a power failure. It is supplied by the telephone's ringing voltage.
Terminal designation:	W, L _b
AC ringing voltage:	32 VAC ... 75 VAC
Overlaid supply voltage:	0 VDC ... 63 VDC
Input impedance:	1At 25 Hz Z ≥ 8 kΩ At 50 Hz Z ≥ 4 kΩ
Acoustic signalling device:	Loudspeaker
Acoustic signal:	Single tone-, 2-tone, 3-tone, warble tone, selectable via DIP switch
Tone sequence frequency:	4 settings between 5 Hz and 20 Hz selectable via DIP switch
Volume:	Approx. 90 dB(A) in 1 m distance



TLS 229 A2C9GL TELEPHONE (ANALOGUE)

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 1, 2 (gas) & 21, 22 (dust)



Analogue telephone specially designed for use in explosive atmospheres. The TLS 229 A2C9GL is designed for hazardous environments and meets industrial and offshore requirements.

Its specially treated glass reinforced polyester (GRP) housing is designed to withstand most chemical and environmental hazards found both onshore and offshore.





EU-Type Examination Certificate

ITEM REFERENCES

Designation:	Version:	Item No.:
TLS 229 A2C9GL	Hand free / Handset / Keypad and Display	4A0401

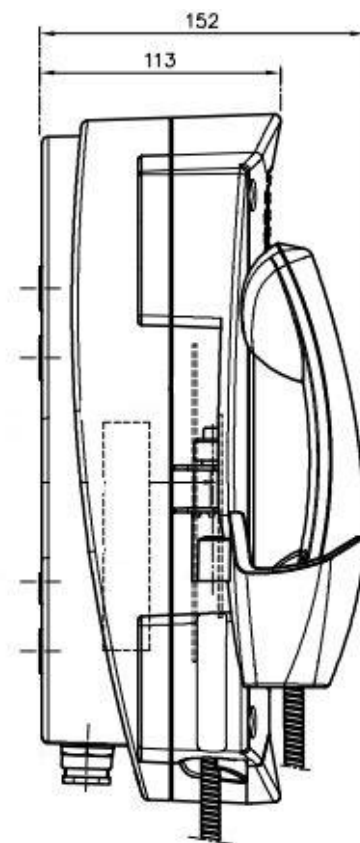
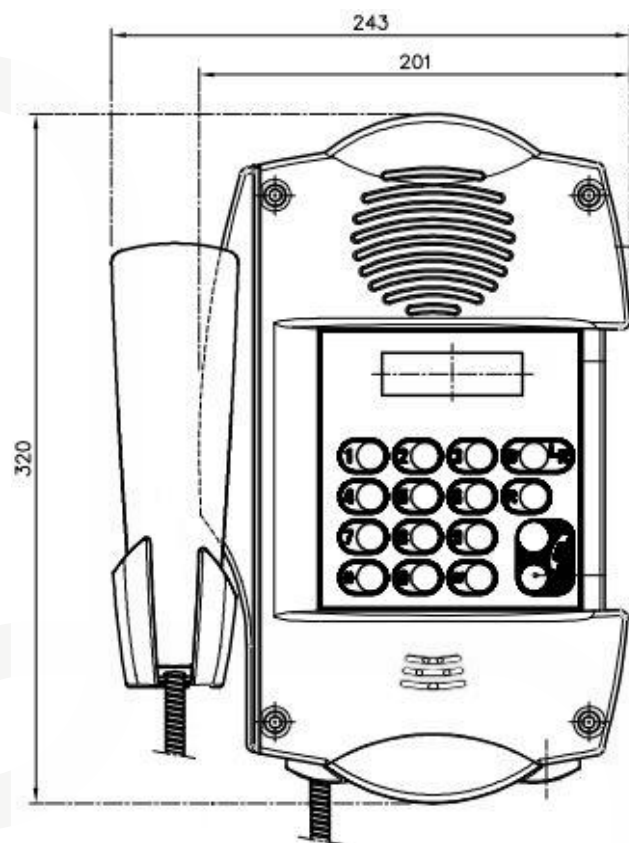
TECHNICAL SPECIFICATIONS

Marking:	 II 2G Ex e ib mb IIC T5 Gb  II 2D Ex ib tb IIIC T100°C Db IP64
Certificate:	EU-Type Examination Certificate
Operating temperature:	-20°C to +60°C
Ingress protection:	IP66
Direct current supply:	12 to 48 VDC
Consumption:	< 45mA ±3
Ringing voltage:	35 – 90 VAC
Dialling:	DTMF / decimal
Flashing/earth:	Adjustable
Electronic bell:	> 85dB at 1m.
Hook:	Magnetic
Conversation mode:	Hands free/ handset
Handset:	Side position (wall or front)
Other features:	CCITT Q23
Body material:	Polycarbonate compound (RAL2003)
Handset material:	PPolycarbonate compound (Black)
Handset cord:	Stainless steel (inox) 100Kg resistance
Microphone:	Electret type
Loudspeaker:	Weatherproof vandal resistant / 5W
Mounting:	On wall 2 or 4 points
Connection:	Inside screw connections
Cable type:	Multiple or single wire with a max section 1.5mm ²
Dimensions:	201 X 320 X 113 mm
Weight:	2,3 kg
Cable entries:	2 Ex e cable glands for cable 5 to 9 mm

TLS 229 A2C9GL TELEPHONE (ANALOGUE)

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com



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COMMUNICATION

EX TELEPHONE FERNTel 3 (ANALOGUE)

Zones 2, 22

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 2 (gas) & 22 (dust)



Analogue desk/wall telephone for applications in potentially explosive areas (zones 2 and 22). This telephone comprises a housing made of impact-resistant thermoplastic and is certified according to ATEX. In the field of the chemical and petrochemical industry potentially explosive atmospheres occur during production procedures caused by e.g. gases, vapours or mist.

The impact-resistant thermoplastic housing as well as the use of stainless steel screws add further special advantages to the FernTel 3.

Moreover, the telephone may effortlessly be converted from a wall-mounted device to a desk telephone and vice versa.



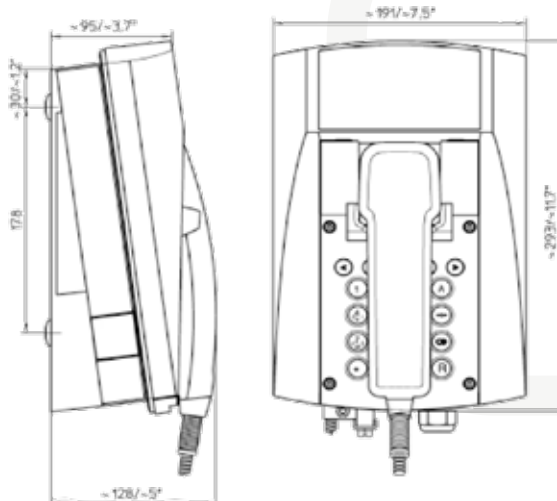
EU-Type Examination Certificate

ITEM REFERENCES

Designation:	Model:	Item No.:
FernTel 3	Without display, with spiral cord	4A0201
FernTel 3	With display, with spiral cord	4A0202
FernTel 3	Without display, with armoured cord	4A0203
FernTel 3	With display, with armoured cord	4A0204

TECHNICAL SPECIFICATIONS

Marking:	II 3G Ex nA ic IIC T5 Gc II 3D Ex tc ic IIIC T80°C Dc
Certificate:	EU-Type Examination Certificate
Ringing frequency:	Settable: 16 Hz to 68 Hz
Supply voltage:	24 V...66 V DC
Housing:	Impact-resistant thermoplastic
Weight:	Approx. 2,3 kg
Operating temperature:	-20°C to +55°C
Ingress protection:	IP65
Cable entries:	1xM20x1,5 plastic cable gland / 1xM20x1,5 plastic plug



EX TELEPHONE FERNTel 3 IP Z2

Zones 2, 22

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 2 (gas) & 22 (dust)

The FernTel 3 Telephone is designed for applications in potentially explosive areas of zone 2 and 22. The telephone housing is made of impact-resistant thermoplastic and is certified according to ATEX.



In the field of the chemical and petrochemical industry potentially explosive atmospheres occur during production procedures caused by e.g. gases, vapours or mist. Its striking signal colors ensure that the FernTel 3 IP Z2 cannot be missed whenever a telephone is urgently needed.

The use of an impact-resistant thermoplastic housing and stainless steel screws, gives even more advantages to the FernTel 3 IP Z2.

This telephone may be easily converted from a wall mounted device to a desk telephone and vice versa.

The FernTel 3 IP allows for effective working with well-designed ergonomics and the illuminated keypad and display make operation simple.

The Ethernet connectivity with the internal 2-port switch allows the user to connect a laptop in an outdoor area.





EU-Type Examination Certificate

ITEM REFERENCES

Designation:	Item No.:
FernTel 3 IP Z2 - Desk/Wall Telephone with spiral cord - YELLOW	4A0301
FernTel 3 IP Z2 - Desk/Wall Telephone with spiral cord - RED	4A0302
FernTel 3 IP Z2 - Desk/Wall Telephone with spiral cord - GREY	4A0303
FernTel 3 IP Z2 - Desk/Wall Telephone with spiral cord - BLACK	4A0304
FernTel 3 IP Z2 - Desk/Wall Telephone with armoured cord - YELLOW	4A0305
FernTel 3 IP Z2 - Desk/Wall Telephone with armoured cord - RED	4A0306
FernTel 3 IP Z2 - Desk/Wall Telephone with armoured cord - GREY	4A0307
FernTel 3 IP Z2 - Desk/Wall Telephone with armoured cord - BLACK	4A0308

TECHNICAL SPECIFICATIONS

Marking:	 II 3G Ex nA ic IIC T5 Gc  II 3D Ex tc ic IIIC T80°C Dc
Certificate:	EU-Type Examination Certificate
Operating temperature:	-20 °C to +60 °C
Ingress protection:	IP65 according to IEC60529
Power supply:	Power over Ethernet according to IEEE 802.3af
Connection:	RJ45 Port 10/100-BASE-T Ethernet LAN
Ring volume:	95 dB(A) at 1m approx.
Housing:	Polycarbonate
Dimensions:	293 x 191 x 128 mm
Weight:	2,4 kg approx.
Operating position:	Desk or vertical wall mounting

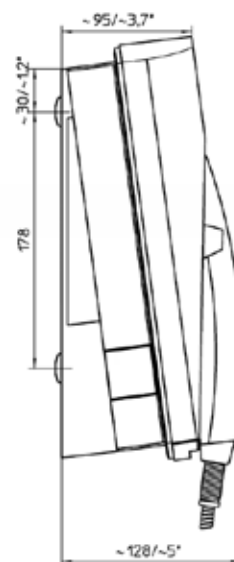
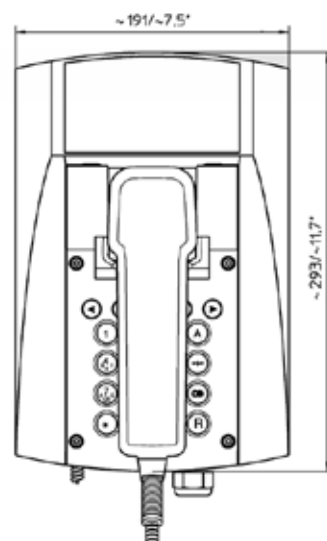
EX TELEPHONE FERNTEL 3 IP Z2

Zones 2, 22

Full catalogue available on our website: www.inpratex.com

TECHNICAL SPECIFICATIONS

Keypad:	Plastic with stainless steel plate
Display:	128 x 64 pixel
Protocols:	H.323, SIP, TSIP, SIPS and H.450
General:	H.323 version 4 including H. 225, H.235, H.245 and RAS Gatekeeper routed signalling, H.450 Session Initiation Protocol (SIP) RTP, SRTP real time protocol – for voice data transfer
RTCP:	Real time control protocol – first level of “Quality of Service”
RAS protocol:	Support for external Gatekeeper
DTMF:	H.245 “Alphanumeric” or “Signal Type”
Additional VoIP features:	H.245 fast connect Enblock dialing Overlapped sending
Security:	Encoded password authorization according to H.235
Quality of Service:	Prioritization of IP packages over TOS and DiffServ VLAN priority according to IEEE 802.1p/802.1q
Voice encoding:	G.711 A-law/μ-law (64 kbps), G.723.1 (5.3 kbps), G.729A (16 kbps)
Echo Compensation:	G.168
Access:	Via HTML Web Browser Passwor-protected with secure authentication
Troubleshooting:	Log and trace files, status displays of interfaces a connections, ping connection test for internet protocol, sending of SNMP traps
Updates:	Configuration recording/reading Boot code and firmware update via HTML upload Automatic update via update server
DSL access:	PPPoE protocol
VPN:	Tunneling with PPTP encoding via MPPE
NAT:	Network Address Translation – for translation of oficial IP addresses into non-official addresses and vice versa
DHCP:	Dynamic Host Configuration Protocol – IP Interfaces settings
ICMP:	Internet Control Message Protocol – for ping tests
Call Tone Generation:	Automatic call tone generation according to European and US standard
Call Transfer:	Call Transfer, in all usual variants: with/without consultation call,before/after answer etc.
Call Diversion:	Call diversion/redirection
Call Hold:	Call hold/retrieve
Call Waiting:	Call Waiting, with respective indication to calling subscriber
Message Waiting:	Message display on telephone
Name Display:	To determine the displayed name
Three-party Conference:	With 3 subscribers, also external subscribers
Caller ID:	For separate indication of call numbers or groups
Multiple Registration:	Up to 6 registrations
Telephone Book:	Automatic availability of all registrations in central telephone book, Integration of external data bases via LDAP
Time:	Exact time information via time server access



Stabilization bracke

EX HOWL-CALL TELEPHONE

Zones 0, 1, 2

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 0, 1, 2 (gas) & Mines



EU-Type Examination Certificate

Battery and network-independent telephone system for applications under rough conditions, even in potentially explosive or firedamp-endangered areas.

Without any external power supply or complex equipment, it can be installed in blast furnace areas, in tunnel building or mining areas, offshore, on an oil rig, in a deep-sea vessel, or in any place that is not (yet) connected to any energy source.

This dynamic telephony represents an ideal opportunity for connection.

This surprisingly easy but efficient method is already being used in many industrial areas to order material or report malfunctions and, not least, in many cases of work accidents it has already been useful to quickly call for help.

The howl call telephone is a battery-free and network-independent telephone with highly efficient dynamic transmitter and receiver capsules offering remote communication without power supply.

The call signal is generated by turning the rotary knob containing an audio frequency dynamo. All telephones have a sturdy, impact-resistant and weatherproof housing. For years they have proven to be a reliable choice for the mining and tunnel building sectors, at construction sites and for industrial applications. The range is about 10 km.

ITEM REFERENCES

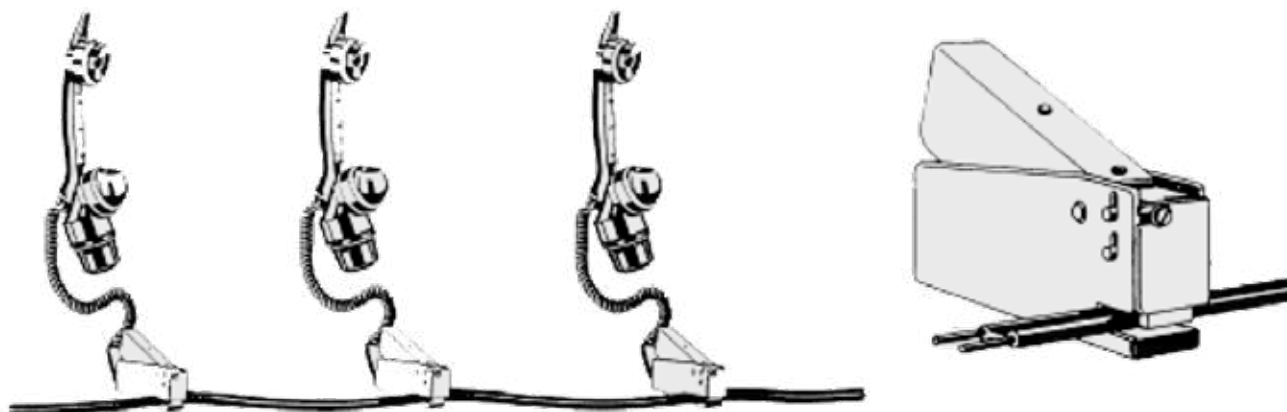
Designation:	Model:	Connected to:	Item No.:
5069 Ex hand telephone	Without prick pincer	-	4B0101
5069 Ex hand telephone	With prick pincer	Flat-band cable	4B0103
5220 Ex wall mounted telephone	Fixed cabling or hose line		4B0104

ACCESSORIES

Designation:	Item No.:
5077 Prick pincer, stainless steel sheet with 1 m cable (wall mounted telephone)	4B0204
Flat-band cable, 2-wire, tensile strength approx. 500 N (lengths on request)	4B0205

APPLICATION EXAMPLE

With movable telephone cable with "prick pincer" – the quick connection to any cable section

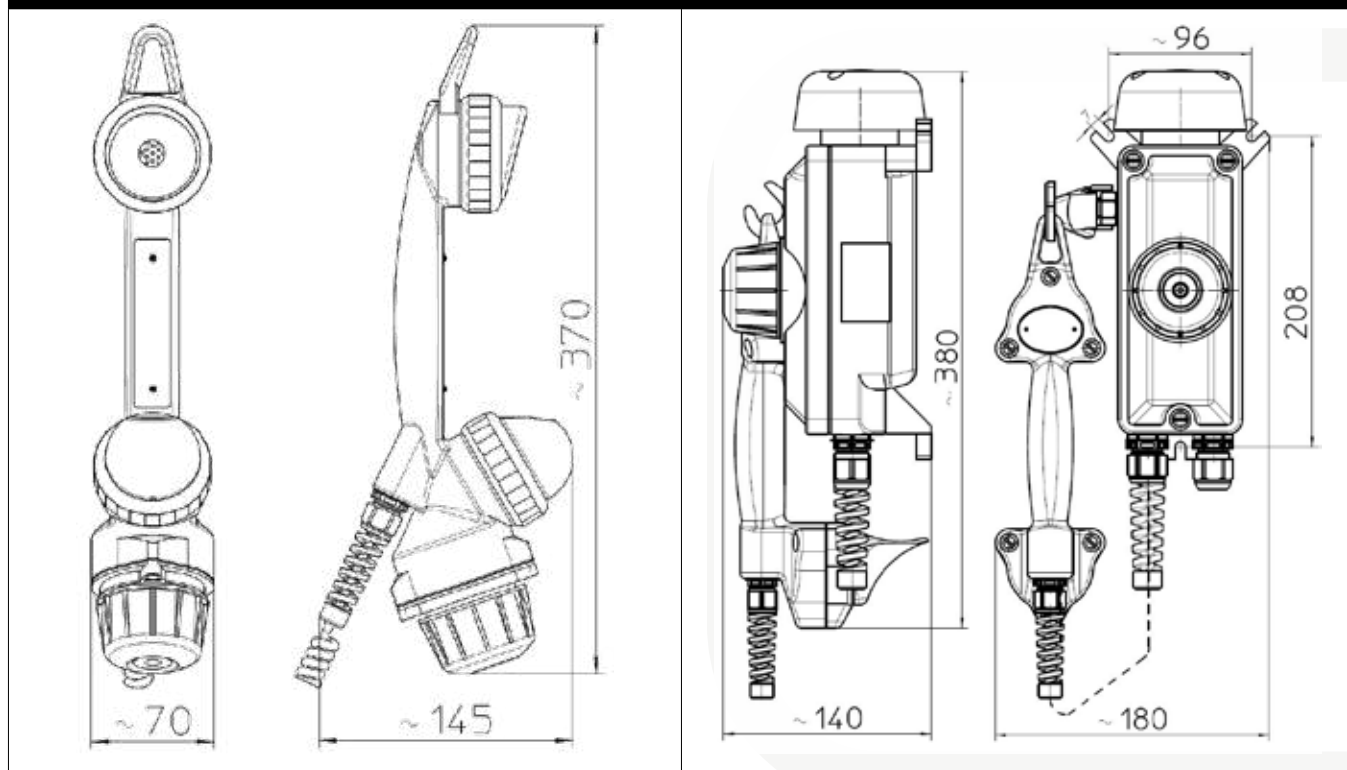


EX HOWL-CALL TELEPHONE




Zones 0, 1, 2

Full catalogue available on our website: www.inpratex.com



DIMENSIONS



ELEMENTS

Wall-mounted telephone 5220	Hand telephone 5069	Prick pincer 5077
		

TECHNICAL SPECIFICATIONS

Marking:	 I M1 Ex ia I Ma  II 1G Ex ia IIC T6 Ga	
	Ex hand telephone 5069	Ex wall mounted telephone 5220
Certificate:	EU-Type Examination Certificate	EU-Type Examination Certificate
Weight:	Approx. 1 kg	Approx. 2,5 kg
Maximum output voltage:	Max. 10 V	Max. 9,5 V
Maximum output current:	Max. 155 mA	Max. 95 mA
Ringing frequency:	Approx. 1540 Hz	Max. 3000 Hz
Operating position:	Any	Vertical, cable glands facing downward
Dimensions:	Approx. 70x120x370 mm	Approx. 380x180x140 mm (with handset)
Mode of operation:	Continuous	
Operating conditions:	Suitable for application in firedamp-endangered underground areas	
Housing:	Polyamide (Black)	
Operating temperature:	-20°C to +40°C	
Ingress protection:	IP54 according to IEC 60529	
Connection:	2-wire blue power cable	

EX HOWL-CALL TELEPHONE

Zones 0, 1, 2

Full catalogue available on our website: www.inpratex.com

Dynamic receiver capsules for powerless telephony.

Simply connect the intrinsically safe handset to the socket and you're ready to go. Or, even easier, just prick into our flat-band cable, and the line is established.

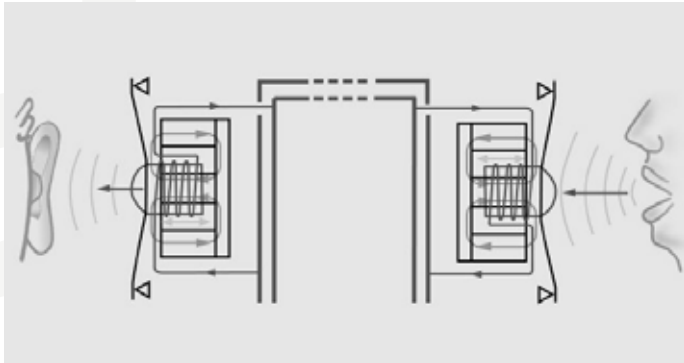
These handsets and telephone systems are explosion-proof and equipped with a high-volume howl capsule, so that they even meet the requirements for the rough and noisy conditions in underground applications.

Intrinsically safe telephony for more independence and safety.

To establish a dynamic telephone system, only two capsules are necessary. A supply with electric voltage is not required. The two capsules must be connected via a two-wire cable.

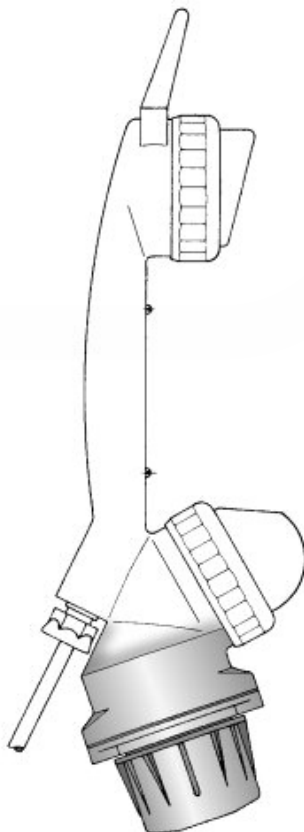
Used as a microphone, the dynamic capsule generates a relatively high voltage from a low sound pressure. It is high enough to also generate a sufficient sound pressure for the other capsule used as receiver.

The two capsules are interchangeable and can both be used as microphone or receiver.



These are the main advantages:

- Simple design
- Quick Installation for frequently changing application sites
- Lightweight mobile devices
- Independent from network and battery
- Constantly ready for operation
- Reduced work load on existing branch exchanges
- Cost-effective



A manually operated electromagnetic call generator generates a wobble current with a frequency of approximately 2000 Hz, which is directly transmitted to the receiver capsule via a two-wire cable.

The current has the effect that an acoustic wobble call is transmitted through the transmitter capsule's membrane.

ATEX RADIOS DTEX SERIES

Zones 1, 2

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 1, 2 (gas)



Professional range of ATEX IIA & IIC certified radios. The rugged DTEX Series delivers exceptionally loud audio coupled with outstanding audio clarity, plus the ergonomic controls are specifically designed for gloved hand use.

By combining the latest DMR digital technology and highest ATEX gas group ratings, the DTEX series delivers best in class range, safety and reliability. Exceeding MIL-STD-810 and a market leading IP68 rating (2-meters 4-hours) the fully submersible DTEX can be depended on to withstand the most extreme and hostile of environments.

- Commercial grade construction
- Digital and analogue modes
- Outstanding range and performance
- Crystal clear audio
- High contrast white on black OLED
- Simple end user programming app
- Extensive range of approved accessories



EU-Type Examination Certificate



ITEM REFERENCES



Model:	Channels:	Screen:	Frequency / Band:	RFPower:	Tier:	Gas group:
DT822	16	No	VHF / 136-174MHz	4W	II	IIA
DT825	256	OLED	VHF / 136-174MHz	4W	II	IIA
DT882	16	No	UHF / 400-470MHz	4W	II	IIA
DT885	256	OLED	UHF / 400-470MHz	4W	II	IIA
DT922	16	No	VHF / 136-174MHz	1W	II	IIC
DT925	256	OLED	VHF / 136-174MHz	1W	II	IIC
DT982	16	No	UHF / 400-470MHz	1W	II	IIC
DT985	256	OLED	UHF / 400-470MHz	1W	II	IIC
DT952	16	No	PMR/DMR446 / 446-446.2MHz	0,5W	I	IIC
DT953	256	OLED	PMR/DMR446 / 446-446.2MHz	0,5W	I	IIC

ATEX RADIOS DTEX SERIES

Zones 1, 2

Full catalogue available on our website: www.inpratex.com

GENERAL TECHNICAL SPECIFICATIONS

Marking:	 II 2G Ex ib IIA T4 Gb  II 2G Ex ib IIC T4 Gb (depending on the model)
Certificate:	EU-Type Examination Certificate
Operating Temperature:	-20°C to +55°C
Storage Temperature:	-40°C to +85°C
Ingress protection:	IP68 (2m 4h Submersible)
Channels:	16 (non-display) / 256 (display)
Number of Zones:	8 (display)
Analogue Channel Spacing:	12.5/20/25KHz
Digital Channel Spacings:	12.5KHz
Battery:	1800mAh Lithium-Ion
Weight:	435g
Dimensions:	138 x 60 x 38 mm
Frequency Stability:	± 1.5ppm
Operating Voltage:	7.4v
Programmable Buttons:	3 (non-display) / 5 (display)
Battery Endurance (5/5/90 Duty Cycle @ 1W)	Analogue 14.5 hours Digital 18.5 hours

TRANSMITTER TECHNICAL SPECIFICATIONS

Modulation Limiting:	±2.5kHz @ 12.5kHz ±4.0kHz @ 20kHz ±5.0kHz @ 25kHz
Conducted / Radiated Spurious Emissions:	Better than -36dBm
Adjacent Channel Power:	Better than 60dB
Audio Distortion (Typical):	3%



RECEIVER TECHNICAL SPECIFICATIONS

Sensitivity (Typical):	Analogue 121dBm (0.2uV) for 12dB SINAD Digital 121dBm (0.2uV) for 5% BER
Intermodulation Response Rejection (ETSI):	> 70dB
Adjacent Channel Selectivity (ETSI):	> 70dB(12.5KHz) 60dB(25KHz)
Spurious Response Rejection (ETSI):	> 70dB
Audio Output Power:	1 watt
Audio Distortion (Typical):	3%
Conducted Spurious Emission (ETSI):	> -57dBm

ACCESSORIES

					
CHPD/DT9	CHPHD/DT9	CHPHS/DT9	CLC/DT2	CLCDT5	CMP/DT9
					
CNB950EV2	CXR16/DT9	CXR5/DT9	EA12/DT9	PTT-C/DT9	PTT-E/DT9

ATEX TP9000EX THOR1 ANALOG T4 RADIO

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 1, 2 (gas) & 21, 22 (dust)

TP9000EX is a unique product which combines mechanical robustness and the latest state of the art radio technology into a Hand Held Radio with a userfriendly design. This ATEX certified radio is IP67 waterproof and can be used as the ultimate communication tool within chemical industries, fire brigades, emergency & rescue services, airports, off-shore industries, etc.

The UHF version is type approved for On Board Communication according to EN 300 720 and fulfils the IEC 60945 marine standards. A perfect tool to fulfilment of the SOLAS requirement.

Key features:

- IP67 Waterproof
- CTCSS, 5-TONE, CCIR, ZVEI, EEA & EIA
- Long operational time
- Power Output 2 Watt
- 16 Channels
- 3450 mAh battery

Antenna, Battery, Bolt Clip and Charger included



EU-Type Examination Certificate



ITEM REFERENCES




Model:	Channels:	Frequency / Band:	Bandwidth:	Article No.:
TP9000EX Thor1 VHF 64-88 MHz	16	VHF / 64-88 MHz	24 MHz	4C0501
TP9000EX Thor1 VHF 146-174 MHz	16	VHF / 146-174 MHz	28 MHz	4C0502
TP9000EX Thor1 UHF 406-470 MHz	16	UHF / 406-470Mhz	64 MHz	4C0503

ATEX TP9000EX THOR1 ANALOG T4 RADIO

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com

GENERAL TECHNICAL SPECIFICATIONS

Marking:	 I M2 EX ib I Mb  II 2G Ex ib IIC T4 Gb  II 2D Ex ib IIIC T110°C Db
Certificate:	EU-Type Examination Certificate
According to the directives:	RoHS 2011/65/EU, MED 2014/90/EU & RED 2014/53/EU
Applied standards:	EN 62368, EN/IEC 60945, EN 301.489, EN 300.086 & EN300.720 (analog part)
Operating Temperature:	-20°C to +55°C
Classifications:	IP67 Waterproof / Exceeds MIL 810 c,d,e,f
Channel spacing:	12,5 / 20 / 25 KHz
Frequency error:	± 2 ppm
Operation mode:	Simplex / Semi-Duplex
Antenna impedance:	50 ohm
Weight:	260g
Dimensions:	H = 137, B = 64, D = 35mm
Operational time (fully charged battery & 2 W TX-output):	5 % TX, 5 % RX & 90 % Standby 3450 mAh battery: 10/14 hours
Signalling:	CTCSS / DSC
Side connector:	16 pin for accessories

RECEIVER TECHNICAL SPECIFICATIONS

DMR sensitivity:	- 124 Dbm.
Sensitivity at 20 dB SINAD:	0,45 µV
(EMF) (25 KHz channel spacing) at 12 dB SINAD EMF:	0,3 µV
LF output power:	2 x 0,5 Watt
LF distortion:	< 10 %
LF frequency response:	300 - 3000 Hz
Signal / noise ratio:	45 dB
Co-Channel attenuation:	-3 dB
Neighbour channel selectivity:	> 70 dB
Attenuation of spurious:	> 70 dB
Intermodulation selectivity:	> 66 dB
Blocking:	> 90 dB
Transmission of spurious (antenna & cabinet):	2 nW equivalent to -57 dBm
Squelch tresshold level:	Programmable

TRANSMITTER TECHNICAL SPECIFICATIONS

Output Power:	Programmable 0.5 - 2 Watt
Transmission of spurious:	< 0,25 µW or - 36 dBm
Antenna & cabinet Max. Deviation:	± 5 KHz / 25 KHz channel
Modulation distortion:	< 5 % @ ± 3,0 KHz
Signal / noise relation:	45 dB
LF frequency response:	300 - 3000 Hz

ATEX TP9000EX THOR1 ANALOG T4 RADIO

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com

ACCESSORIES

			
SCULL MIC HEADSET	HEADSET IN-EAR	HEADSET CONVERTER PLUG	BATTERY LI-ION
			
THROAT MIC HEADSET	HEADSET WITH BOOM MIC	HEADSET "SURVEILANCE"	CLOSE-TALK
			
CHARGER	AC 100-240V	CARY CASE	SHOULDER HARNESS
			
PTT			

ATEX TP9000EX THOR2 DIGITAL/ANALOG T4 RADIO

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com

ATEX COMMUNICATIONS

ZONES 1, 2 (gas) & 21, 22 (dust)

TP9000EX is a unique product which combines mechanical robustness and the latest state of the art radio technology into a Hand Held Radio with a userfriendly design. This ATEX certified radio is IP67 waterproof and can be used as the ultimate communication tool within chemical industries, fire brigades, emergency & rescue services, airports, off-shore industries, etc.

The UHF version is type approved for On Board Communication according to EN 300 720 and fulfils the IEC 60945 marine standards. A perfect tool to fulfilment of the SOLAS requirement.

Key features:

- IP67 Waterproof
- 16+16+99 Channels
- Long operational time - 3450 mAh battery
- Power Output 2 Watt
- CTCSS, dcs
- OLED Display

DMR Tier 2 Compatible

Antenna, Battery, Bolt Clip and Charger included



EU-Type Examination Certificate



ITEM REFERENCES




Model:	Channels:	Frequency / Band:	Bandwidth:	Article No.:
TP9000EX Thor2 VHF 64-88 MHz	16+16+99	VHF / 64-88 MHz	24 MHz	4C0601
TP9000EX Thor2 VHF 146-174 MHz	16+16+99	VHF / 146-174 MHz	28 MHz	4C0602
TP9000EX Thor2 UHF 406-470 MHz	16+16+99	UHF / 406-470Mhz	64 MHz	4C0603

ATEX TP9000EX THOR2 DIGITAL/ANALOG T4 RADIO

Zones 1, 2, 21, 22

Full catalogue available on our website: www.inpratex.com

GENERAL TECHNICAL SPECIFICATIONS

Marking:	 I M2 EX ib I Mb  II 2G Ex ib IIC T4 Gb  II 2D Ex ib IIIC T110°C Db
Certificate:	EU-Type Examination Certificate
According to the directives:	RoHS 2011/65/EU, MED 2014/90/EU & RED 2014/53/EU
Applied standards:	EN 62368, EN/IEC 60945, EN 301.489, EN 300.086 & EN300.720 (analog part)
Operating Temperature:	-20°C to +55°C
Classifications:	IP67 Waterproof / Exceeds MIL 810 c,d,e,f
Channel spacing:	12,5 / 20 / 25 KHz
Frequency error:	± 2 ppm
Operation mode:	Simplex / Semi-Duplex
Antenna impedance:	50 ohm
Weight:	260g
Dimensions:	H = 137, B = 64, D = 35mm
Operational time (fully charged battery & 2 W TX-output):	5 % TX, 5 % RX & 90 % Standby 3450 mAh battery: 10/14 hours
Signalling:	CTCSS / DSC
Side connector:	16 pin for accessories

RECEIVER TECHNICAL SPECIFICATIONS

DMR sensitivity:	- 124 Dbm.
Sensitivity at 20 dB SINAD:	0,45 µV
(EMF) (25 KHz channel spacing) at 12 dB SINAD EMF:	0,3 µV
LF output power:	2 x 0,5 Watt
LF distortion:	< 10 %
LF frequency response:	300 - 3000 Hz
Signal / noise ratio:	45 dB
Co-Channel attenuation:	-3 dB
Neighbour channel selectivity:	> 70 dB
Attenuation of spurious:	> 70 dB
Intermodulation selectivity:	> 66 dB
Blocking:	> 90 dB
Transmission of spurious (antenna & cabinet):	2 nW equivalent to -57 dBm
Squelch tresshold level:	Programmable

TRANSMITTER TECHNICAL SPECIFICATIONS

Output Power:	Programmable 0.5 - 2 Watt
Transmission of spurious:	< 0,25 µW or - 36 dBm
Antenna & cabinet Max. Deviation:	± 5 KHz / 25 KHz channel
Modulation distortion:	< 5 % @ ± 3,0 KHz
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LF frequency response:	300 - 3000 Hz

ATEX TP9000EX THOR2 DIGITAL/ANALOG T4 RADIO

Zones 1, 2, 21, 22

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ACCESSORIES

			
SCULL MIC HEADSET	HEADSET IN-EAR	HEADSET CONVERTER PLUG	BATTERY LI-ION
			
THROAT MIC HEADSET	HEADSET WITH BOOM MIC	HEADSET "SURVEILLANCE"	CLOSE-TALK
			
CHARGER	AC 100-240V	CARRY CASE	SHOULDER HARNESS
			
PTT			

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