

# GP 900 CENELEC



WHEN SAFETY ISN'T  
AN OPTION

GP 900



### ***The most rugged and reliable radio around***

The GP900 Cenelec is built to the highest possible standards of reliability, and with a clear view of the requirements of our customers, maintains one of the most rugged performances in the marketplace.

Oil Rigs, Gas Works, Explosive Environment? You need safety approved two-way radios to help you communicate with your staff. Choose Motorola - the world's leading manufacturer of mobile communications equipment. Motorola is dedicated to excellence in its products and level of customer support.

## More about Cenelec

Cenelec is an acronym for the European Committee for Electrotechnical Standardisation. This committee is composed of representatives for each member State. Collectively they agree and adopt common Standards.

The Motorola Radius GP900 has been designed to comply with the most stringent requirements for Intrinsically Safe equipment, which aims to ensure that the electrical or thermal energy available in a

circuit is insufficient to ignite a potentially explosive mixture of gas and air under normal and specified fault conditions.

Different gases require differing amounts of energy for ignition and are grouped accordingly. Radiated energy must be kept to a low level to minimise any risk of a spark; consequently, the RF output of the GP900 has been reduced to 1Watt.

The **GP900** has the following certification code: EEx ib IIC T4, which is interpreted in the table below:

<b>E</b>	<b>Ex</b>	<b>ib</b>	<b>IIC</b>	<b>T4</b>	T4 = temperature classification to 135°C
					IIC = gas group hydrogen
					ib = protection concept (Intrinsic Safety)
					Ex = explosion protected
					E = certified to Cenelec Standard

**EEx ib IIC T4**

This shows the classification of a selection of gases and vapours into explosion groups and temperature classes.

	T1	T2	T3	T4	T5	T6
I	Methane					
IIA	Acetone	Ethyl alcohol	Benzene	Acetaldehyde		
	Ethane	l-amyl acetate	Diesel fuel	Ethyl ether		
	Ethyl acetate	n-butane	Aircraft fuel			
	Ammonia	n-butyl alcohol	Heating oil			
	Benzene (pure)		n-hexane			
	Acetic acid					
	Carbon monoxide					
	Methanol					
	Propane					
	Toluene					
IIB	Town gas (Coal gas)	Ethylene				
IIC	Hydrogen	Acetylene			Carbon disulphide	Ethyl nitrate

A higher T class automatically covers gases in lower T class groups.

In addition: IIB also covers IIA

IIC also covers IIB and IIA

### ***GP900 Cenelec Approval***

Motorola's European Factory in Dublin, Eire and the Engineering Design Group in Basingstoke have been approved by EECS, an Internationally Accredited Body, to ensure that Intrinsically Safe radios are manufactured in compliance with the Standard and Certification requirements.

### ***GP900 Cenelec: Approved Accessories***

The Cenelec standard also regulates the use of accessories in hazardous environments. These accessories are subject to approval, and must be approved with the radio. Your Authorised Motorola Dealer will be pleased to give you details of these specially designed accessories.

### ***Batteries***

Batteries are also subject to the stringent Cenelec regulations. Your Authorised Motorola Dealer will ensure that you have the right battery for your Cenelec two way radio.

Use of non-approved batteries and accessories will invalidate the Cenelec certification and could remove the safety factors designed to prevent an explosion.

### ***Service and Repair***

It is the customers responsibility to ensure that whoever repairs or services the radio is authorised to do so.

For a list of Cenelec approved Motorola Service Centres in your area please see back page.



# When safety isn't an option

## **Cenelec Approved to exacting European Safety Standards**

The GP900 Cenelec two way radio is approved to exacting European Safety Standards, which place unparalleled emphasis on the provision of increased safety and control to all users.

## **The GP900 Cenelec radio offers many user-friendly features and benefits:**

- **Multicall Address Selection**  
Can contact your staff either individually or in pre-defined groups
- **Privacy Call Mode**  
Enables you to keep control over your communication channels
- **Vox**  
Leaves your hands free for essential work
- **Programmable Channel Spacing**  
Helps guard against future changes in specification

One of the most important features the GP900 offers is Emergency Call Mode

## **Emergency Call Mode**

With a simple press of a button an emergency call can be activated. This transmits an emergency message and warning tone to other users.

The radio can also be programmed to perform a cycle of Transmit and Receive functions automatically. If the user is unable to operate the radio during an emergency the sound from the local area will be transmitted back to base automatically and messages from base will be heard during receive. The duration of the emergency button press is also programmable to minimise the risk of accidentally starting the emergency cycle.



# GP900 Specifications

## General

Frequency Range:	MHz	136-174 403-470
Channel Spacing:	kHz	12.5, 20, 25 (programmable per Ch.)
No. of Channels:		16
Modulation:		PM, FM, Type 8K5F3, 14F3, 16F3
Antenna Impedance:	Ohms	50
Mode of Operation:		Single or Two Frequency Simplex
Power Supply:		Rechargeable Battery NiCd
Operating Temperature:	°C	-25 to +55
Storage Temperature:	°C	-40 to +85
Environmental:		IP54
Frequency Stability	ppm	20/25 kHz ±5 12.5 kHz ±2

## Transmitter

Power Output (no degradation):	VHF UHF	0.5-1 Watt (programmable) 0.5-1 Watt (programmable)
Maximum Deviation:	12.5 kHz 20 kHz 25 kHz	±2.5 kHz ±4.0 kHz ±5.0 kHz
Audio Distortion (@ 1 kHz, 60% deviation):		≤ 5%
Spurious and Harmonics:	dBm	-36 (≤1 GHz) ; -30 (> 1 GHz)
Switching Bandwidth (no degradation):	VHF UHF	136-174 MHz (38 MHz) 403-470 MHz (67 MHz)

## Receiver

		12.5 kHz		25 kHz	
		VHF	UHF	VHF	UHF
Sensitivity*	12dB SINAD° µV	0.35	0.35	0.35	0.35
	20dB SINAD° µV	0.50	0.50	0.50	0.50
Rated Audio Output Power <5% distortion @ 1kHz	mW	400		400	
Spurious/Image Rejection:	dB	-70		-70	
Selectivity:	dB	-60		-70	
Intermodulation:	dB	-65		-65	
Switching Bandwidth (no degradation):	VHF UHF	136 - 174 MHz (38 MHz) 403 - 470 MHz (67 MHz)			

\* Typical values

° Psophometrically weighted

## Battery Life\*

Battery Capacity:	900 mAh
Duty Cycle (5-5-90) 1W	9.5hrs
Dimensions	160mm x 59mm x 39mm
Weight	546g

These specifications are subject to change without notice and are for guidance purposes only.

Type approved to ETS300-086, ETS300-113, ETS300-219 & ETS300-279.

Conforms to EC Directive 89/336/EEC.



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FM 13504

**Contact your local Authorised Motorola Dealer to find out more about how communicating with the GP900 will benefit your organisation**

Your Authorised Motorola Dealer is:

