

## **Polycon MP20 Series charger**

**CHG1236M/S**

## **Installation and Operation**

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## Revision history

Revision	Date	Description	List of effective pages
Issue A	2011-06-30	First release of Installation and Operation manual.	New document
Issue B	2011-07-06	Updated part number for power supply	i Revision information ii Revision history iii Table of contents 1-3 1.5 Updated with new part number 1-4 1.6.2 and 1.7.1 Updated with new part number
Issue C	2011-07-08	Removed AX-CHG-0010 from identification of article	1-3 1.5 removed AX-CHG-0010
Issue D	2014-06-20	Updated drawing with missing dimensions	1-2 Updated drawing



## Table of contents

SECTION 1: GENERAL INFORMATION.....	1-1
1.1 Introduction.....	1-1
1.2 Mechanical description.....	1-1
1.3 Connectors and Control Functions.....	1-2
1.4 Electrical and functional description.....	1-3
1.5 Identification of article.....	1-3
1.6 Technical data.....	1-3
1.6.1 Charger cradle (CHG 1236 M/S).....	1-3
1.6.2 Power supply (90-264V).....	1-4
1.6.3 Power supply (9120/16).....	1-4
1.7 Type approvals and records.....	1-4
1.7.1 Type approvals.....	1-4
1.7.2 Type Records.....	1-4
1.8 Accessories.....	1-4
SECTION 2: INSTALLATION.....	2-1
2.1 General.....	2-1
2.2 Inspection before installation.....	2-1
2.3 Recommended maintenance.....	2-1
2.4 Dimensions Polycon MP20 series charger.....	2-1
2.5 Location of connectors and pin assignment.....	2-2
2.5.1 Power supply pin assignment.....	2-2
SECTION 3: OPERATION.....	3-1
3.1 MP20 series charging.....	3-1



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## Section 1: General information

### 1.1 Introduction

The Polycon system is a wireless extension of an aircraft's ICS. The system consist of one base station and one or more handheld radios. The base station is connected to the aircraft's ICS, and the handheld radios are connected to a headset. The headset can be incorporated in the helmet of the users. The base station works as a repeater station; both between the wireless crew, as well as between wireless crew connected through Polycon and crew connected to the wired ICS onboard the aircraft.

This manual describes the installation and operation of the Charger for Polycon MP20 series handheld radios.

### 1.2 Mechanical description

The MP20 Series charger consists of a charger cradle, and a power supply.

The outline of the charger cradle is found in Figure 1-1.

The chassis is made out of painted saltwater resistant milled aluminium, and consist of three main parts, a main body and a back plate (for wall mount), and a bottom plate.

There are two 9 pin D-SUB connectors, one at each side, and a status indicator LED located at the front.

The charger consists of one circuit board.



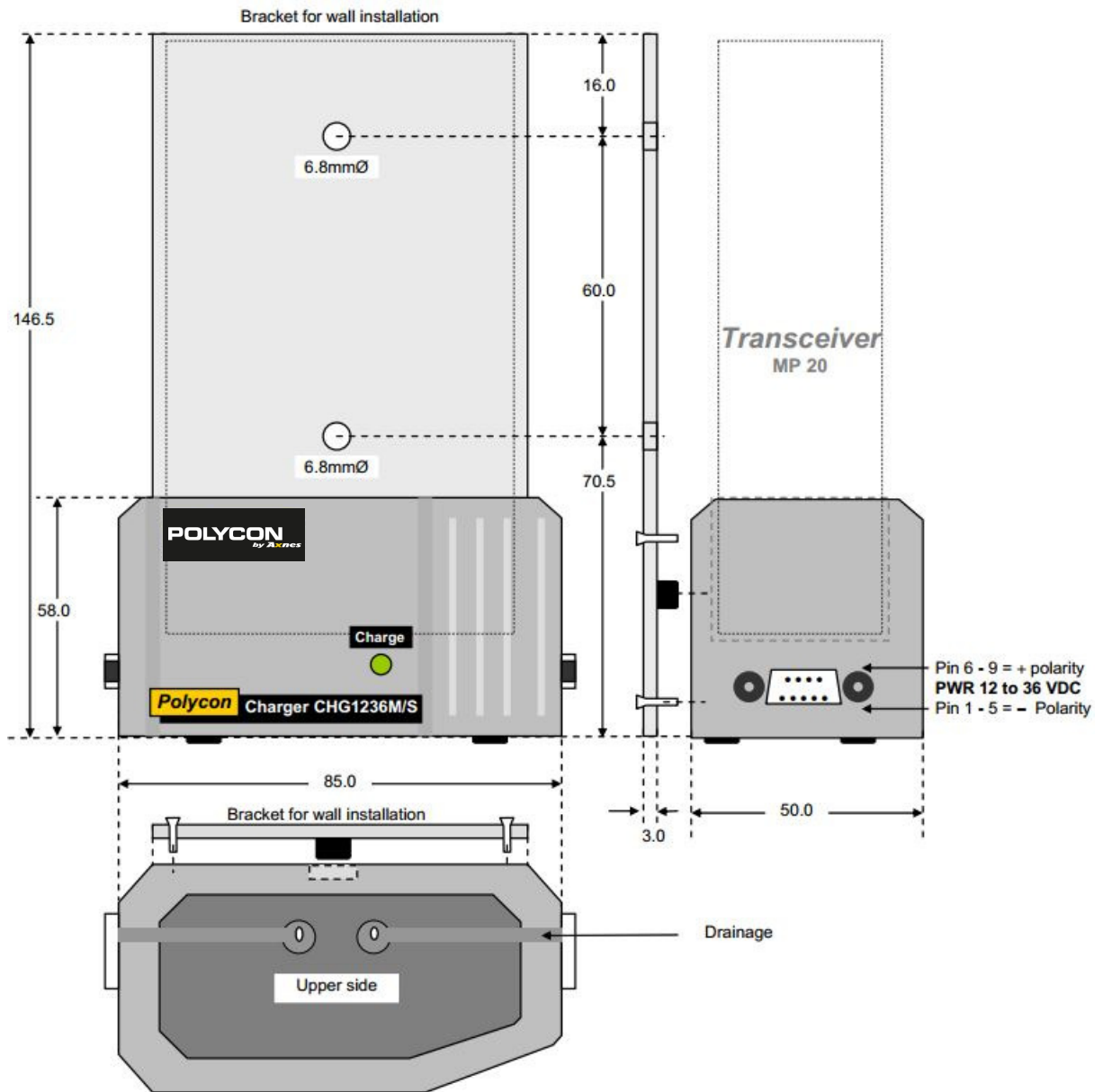


Figure 1-1: Charger cradle outline

### 1.3 Connectors and Control Functions

There are two connectors on the charger cradle, located at each side of the unit. The unit is supplied with external DC power through the connector located at the left hand side of the cradle, and power is relayed to the right hand side connector. The charger can be delivered with a 110-240V power supply.

The unit has one charge status indicator located at the front. The charge indicator will be flashing while charging and be steady on when fully charged.



## 1.4 Electrical and functional description

The MP20 series charger is designed to charge all MP20 series handheld radios. When radio is placed in the charger, the radio makes contact on its base to mate with corresponding contacts on the charger unit; hence batteries are not to be removed from the radio.

## 1.5 Identification of article

The MP20 series charger cradle is labelled with part number CHG1236 M/S.

The power supply is labelled AX-PS-0050. Note some earlier models used power supply P/N 9120/16.

Article	Part no:
Battery charger CHG1236M/S only, no power supply	CHG1236M/S
Battery charger CHG1236M/S, with power supply, AUS plug	AX-CHG-0020
Battery charger CHG1236M/S, with power supply, EU plug	AX-CHG-0030
Battery charger CHG1236M/S, with power supply, UK plug	AX-CHG-0040
Battery charger CHG1236M/S, with power supply, US plug	AX-CHG-0050

## 1.6 Technical data

### 1.6.1 Charger cradle (CHG 1236 M/S)

Input voltage, operational:	12-36 VDC
Input voltage, spike protection:	Up to 110V
Input voltage, charger shut off:	36 to 110 VDC
Charge current:	500 mA
Voltage regulator:	Switch mode, step down
Charge control:	Voltage delta control
Trickle charging:	Pulsed 500mA injection
Nominal charge voltage:	6 V
Reverse voltage protection:	Yes
Supply voltage to daisy chain:	Same as input voltage
Protection:	Internal 1A fuse
Material:	Aluminium 5052 (Salt Water Resistant)
Paint:	Layer1: 2 comp. Wash primer CR Sikkens/Akzo Nobel Layer2: 2 comp. Auto Nova – None Sanding, Sikkens / Akzo Nobel Layer3: 2 comp. Cooler Polyurethane Sikkens BT 499G3 (grey). Sikkens / Akzo Nobel
Physical dimension:	50x50x85mm



### 1.6.2 Power supply (AX-PS-0050)

Input voltage:	90-264VAC 47-63Hz
Input current:	1A
Output voltage:	18V
Output current:	2,22A
Output power:	40W
Physical dimension:	125x50x35mm
Model no.:	GS40A18

### 1.6.3 Power supply (9120/16)

Input voltage:	230VAC 50-60Hz
Input current:	0,6A
Output voltage:	16V
Output current:	2,7A
Output power:	45W
Physical dimension:	125x80x45mm

## 1.7 Type approvals and records

### 1.7.1 Type approvals

The Polycon MP20 series charger has been tested against:

- IEC EN 60950-1:2006 Information technology equipment – Safety

The power supply AX-PS-0050 has CE marking and separate approval according to EN 60950-1:2001 + A11 or newer.

### 1.7.2 Type Records

The Design Authority will submit a Declaration of Design Performance (DDP).

The DDP will reference the following:

- Design Specification.
- Equipment Specification Number and Issue Number.
- General Assembly Drawings and Aircraft Equipment installation information.
- Master Record Index.
- List of Type Test Reports.

## 1.8 Accessories

Axnes Aviation can supply a number of accessories related to the Polycon system. For details please visit:





<http://www.axnes.com/products>

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## Section 2: Installation

### 2.1 General

The MP20 series charger cradle shall be connected to a power supply with a supply voltage of 12 to 36 VDC. The cradle is specifically designed for MP20 charging and should not be used for other purposes.

The cradle has a back plate with predrilled holes for optional mounting.

### 2.2 Inspection before installation

Before taking MP20 series chargers into use, carry out visual inspection for any transport damage, paying particular attention to the following:

- Dirt, dents, scratches, corrosion, broken attaching parts on the housing and housing parts.
- Dirt and scratches on the identification plate, and marking.
- Dirt, bent or broken pins, cracked connector inserts.
- Missing screws.

### 2.3 Recommended maintenance

The Polycon MP20 series charger should be serviced by an Axnes Aviation certified service centre on a regular basis. Periodic maintenance of the Polycon MP20 series charger is recommended according to service letter published at Axnes resource website:

<http://www.axnes.com/resource-center/service-letters/>

Axnes Aviation certified service centres are found at:

<http://www.axnes.com/support>

or contact Axnes Aviation A/S at:

Ph. +47 37 04 08 00

FAX. +47 37 04 07 99

E-mail: [support@axnes.com](mailto:support@axnes.com)

### 2.4 Dimensions Polycon MP20 series charger

Refer to Figure 1-1: Charger cradle outline.



## 2.5 Location of connectors and pin assignment

MP20 series charger has, one charging connector located in the cradle bay for connecting to the MP20 series radio, and two power supply connectors located at each side of the cradle. The two power supply connectors are for connecting the power supply and relaying power from the power supply.

### 2.5.1 Power supply pin assignment

The power supply pin assignment is listed in Table 2-1: 9 Pin D-sub power connector.

Pin	Function
1	GND
2	GND
3	GND
4	GND
5	GND
6	12-36VDC
7	12-36VDC
8	12-36VDC
9	12-36VDC

**Table 2-1: 9 Pin D-sub power connector**

Connector on the Polycon MP20 series charger for powers supply is 9 pin D-sub male.

Connector on the Polycon MP20 series charger for relayed power is 9 pin D-sub female.



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## Section 3: Operation

### 3.1 MP20 series charging

The MP20 series handheld radios should be fully charged before taken into use for the first time. The radios are equipped with NiMh batteries and a charge cycle will normally take 3 hours depending on the charge state of the batteries.

The MP20 series radios will indicate a low battery condition at approximately 10% of full battery capacity. This will be indicated with a low battery warning tone (frequent blip), in headset or loudspeaker.

The charging cradle is designed to fit the handheld radio and to keep the handheld radio stable and secure while charging. A green indicator in the charger will illuminate during charging, and will start flashing when the charging cycle is complete, and the handheld radio is fully charged.

**MAKE SURE THE MP20 SERIES HANDHELD RADIO IS SWITCHED OFF DURING CHARGING.**

If fully discharged during operation, the charging might need to be restarted after the unit has been in the charger for a few minutes, by lifting the unit out of the charger and putting it back again to ensure a correct charge cycle.

