VINGTOR STENTOFON

VSP Ex Batteryless Telephone System

Installation & User Manual

Contents

1 Basic Information

1.1 Revision History

Version no.	Date	Author	Status
00	06.03.20	Sen	First version
	25.08	ER	Doc.no. VSP-Ex_iu Rev.00 is replaced with A100K10872 New Template
2.0	22.06.2011	Sen	Add revision status on front and pages Add supplement to Nemko certificate
3.0	17.07.2015	Sen	Headset VSP-512-PEL w/adapter replaced by AK5850HS, Cable with switch AK6797 (10mtr.) and AK6799 (20mtr) Ex relay MK13-222Ex-R replaced by IM1-22Ex-R2ch. Drawings updated New template
3.1	14.06.2017	Sen	7 Appendix 7.1Technical drawings Headset removed from zone 0 on drawing VSP-5012_sl Rev.04 and VSP-5012_cc2 Rev.04 Changed drawing VSP-IS28-MK4_wd Rev.01 Declaration of conformity added after recommendation from Nemko
3.2	5.12.2018	HKL	New Nemko CE Declaration of Conformity

1.2 Certificates

ATEX Certificate Number	**Presafe 15 ATEX 6475**
IECEx Certificate Number	**IECEx PRE 15.0024**

Tested according to standards:
EN 60079-0: 2012 and EN 60079-11: 2012 for ATEX
IEC 60079-0: 2011 and IEC 60079-11: 2011 for IECEx CE0470

2 General Description

2.1 Introduction

The Intrinsically Safe Set for VSP consists of:

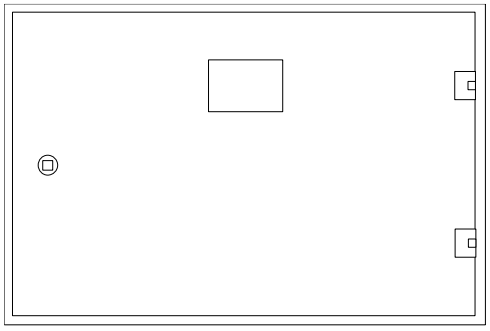
VSP-5012 Buffer unit for a safe area, and operating unit **VSP-512** to be mounted in a hazardous area.

The VSP-512 can call all other units in the total system.

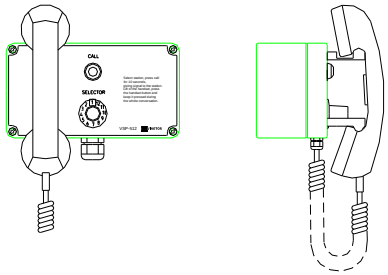
Alternative:

Buffer unit **VMP-5004 / VMP-5008** for safe area, and Operating unit **VSP-512** to be mounted in a hazardous area.

The VSP-512 can call 4 - 8 other units in the total system.



Buffer unit: **VSP-5012**
Alternative: **VSP-5004/VSP-5008**



VSP-512

The operative unit VSP-512 is designed for use in a hazardous area: II (1)G Ex ia IIC T4 Ta=60°C
The buffer unit VSP-5012 is designed for use in a safe area: II (1)G [Ex ia] IIC Ta=60°C

2.2 Operating Unit

The Operating Unit VSP-512 enables communication to and from a person located in hazardous areas. The conversation is possible via the unit handset.

2.3 Buffer Unit

The two Zener barriers MTL 7760ac handle the communication lines.

The relay IM1-22Ex-R2-ch (6 pieces in VSP-5012 and 2-4 pieces in VSP-5004/VSP-5008) provide for call functions from the operation unit in a hazardous area to the VSP system units in a safe area.

Other relays provide output for connection of Ex-approved external signaling units operating on 24V DC.
When calling a VSP station in the hazardous area from a VSP station located in the safe area, a relay K2 to K5 in the buffer opens up for supplied power to the separate call signal device in the hazardous area.

3 System Description

3.1 Call from VSP-512 Station (Operative Unit) in Hazardous Area

You may select between 12 (alternative 4 or 8) other stations in the system.
Select the station by operating the station selector switch, and then press the call button for several seconds, giving a signal to the selected station.

- Lift the handset, and press and hold the handset button during the whole conversation.

You can now communicate with full power for guaranteed periods of 20 minutes.
After 20 minutes, you may extend the speech time by pressing the actual call button at the station front.

3.2 Being Called in Hazardous Area

A received call in a hazardous area is indicated by audible or visible Ex-approved signal unit(s) for Ex category II 2 G (Zone 1), or horn and sounder for Ex II 1 G (Zone 0), operated and fed with power via the buffer unit in the safe area.

- Lift the handset, and press and hold the handset button during the whole conversation.

4 Installation Description

4.1 General Installation Instructions

The installation cable enters the **VSP-512** from the bottom through the K-M20 or K-M12 cable glands.
This installation cable, coming from the buffer unit in the safe area, terminates inside the station on the X1 terminal list.

VSP-512 is for wall mounting, and **can be installed inside – Ex II 1 G (Zone 0)**

The buffer unit **VSP5012** and **VSP-5004/008** are built into a steel cabinet.
The buffer is for wall mounting and **must be located outside the hazardous area - in SAFE area.**

The cables to and from the safe area part of the system are connected to **the grey terminal plug** located on PC-board PCB-VSP-5012 Plugs P1 to P4.
The cables to and from the VSP-512 located in the hazardous area **must be** connected to **blue terminal list** X10.
See drawings: VSP-5012_sl, VSP-5012_cc1, VSP-5012_cc2, VSP-5012_lo, and VSP-EX_sd

All installations in the hazardous area must be according to the EN 60079-14:2013 standard.

4.2 Startup Procedure

- Complete all wirings as shown in included example drawings VSP-5012_cc1 and VSP-5012_cc2 or project drawings.
- Power up the system with 24Vdc and check that all PWR lamps on IM1-22Ex-R2ch relays in buffer unit are lit.
- The 24V DC signal output must be wired to the correct extensions. Strap the relay circuits on connector P4 (pin 1 to 4) to the actual extension on P3 (pin 1 to 16).
  This is usually factory-set according to your specification.
- Test a call from the safe area VSP station to one of the VSP main stations. Check the sound quality. If the extension is connected to one of the relay outputs, check that there is 24Vdc on terminals P4 (pins 5 to 12) and that the signal unit is working.
- Test a call from one of the VSP-512 stations to the safe area VSP stations. Check the sound quality.
- If the sound quality is bad, then check whether the wiring is correct, and the shield is isolated and grounded in terminal 2 on VSP-211-L only.

5 Service & Maintenance

5.1 General

All maintenance and service must be performed by competent personnel with sufficient Ex knowledge. These persons must take sole responsibility that the system conforms to the required standards.

Spare parts are listed in the included spare part lists, and must be purchased or approved by Zenitel.

Other than changing spare parts, **NO modifications to the equipment are allowed.**
A Zenitel approved partner must perform any further service and other work than what is described here.

5.2 Approved Spare Parts List VSP-50xx

Approved/ allowed spare part list for VSP-5012 Rev. 02

Article no.	Supplier no.	Article description	Supplier
IM1-22Ex-R2ch	IM1-22Ex-R2ch	Ex-relay IM1-22Ex-R2ch 2ch.	Zenitel
MTL-7760	MTL 7760AC	Zener barriere MTL 7760 ac	Zenitel
PCB-VSP5012	PCB-VSP5012	Ex main board	Zenitel
PCB-VSP5112	PCB2-VSP-5112	Ex audio board	Zenitel

NO OTHER PARTS ARE TO BE CHANGED, UNLESS AGREED UPON WITH ZENITEL OR PERFORMED BY ZENITEL APPROVED SERVICE PARTNER.

FAILURE TO COMPLY WITH THIS WILL VOID ANY WARRANTY AND RESPONSIBILITY BY ZENITEL.

6 Technical Data

6.1 Operative Unit VSP-512

Blue Terminal List X1							
Blue Terminal List **X1**		Microphone Capsule Line **Terminal 1-2**		Speaker Capsule Line **Terminal 3-4**		Call Out **Terminal 5-18**	
Ui	2.2V	Inductance	0.75 uH	Inductance	4.3 uH	Uo	9.6 V
Li	200mA	Impedance	150 ohm	Impedance	180 ohm	Lo	22 mA
Pi	0.35W					Po	52 mW
						Co	3.6 µF
						Lo	70 mH
						L/R	674 uH/Ω

6.2 Buffer Units VSP-5004 / VSP-5008 / VSP-5012

Blue Terminal List X10			
Audio Signal **Terminal 1-4**		Call Out **Terminal 5-6,7-8,9-10**	
Uo	2,2V	Uo	9.6 Vac
Io	200mA	Io	22 mA
Po	0.35W	Po	52 mW
Co	100 µF	Co	3.6 µF
Lo	0.91 mH	Lo	70 mH
L/R	71 uH/Ω	L/R	674 uH/Ω

6.3 Audio Accessories

⚠ Only Ex-certified audio accessories which comply with the input and output values in sections 6.1 and 6.2 may be used with the Ex Products.

The following Zenitel accessories comply with the input and output values stipulated above, and are approved for use with the Ex Products:

Ex audio accessories		
2330040026	AK5850HS	Ex-Approved Headset with plug **
2330040027	AK6797	Cable with latching switch for headset 10mtr.
1008150030	AK6799	Cable with latching switch for headset 20mtr.

**** Headset AK5850HS is only certified for use in ATEX areas (NOT IECEx)**

6.4 Marking VSP- 512

Based on the requirements of zone 0, T4 and the chosen concept of protection, the Ex Product shall include the following marking:

- II (1)G Ex ia IIC T4 Ta=60°C

6.5 Marking VSP-5004 / VSP-5008 / VSP-5012

Based on the requirements of a nonhazardous area, T4 and the chosen concept of protection, the Ex Product shall include the following marking:

- II (1)G [Ex ia] IIC Ta=60°C

6.6 Ex Components Used

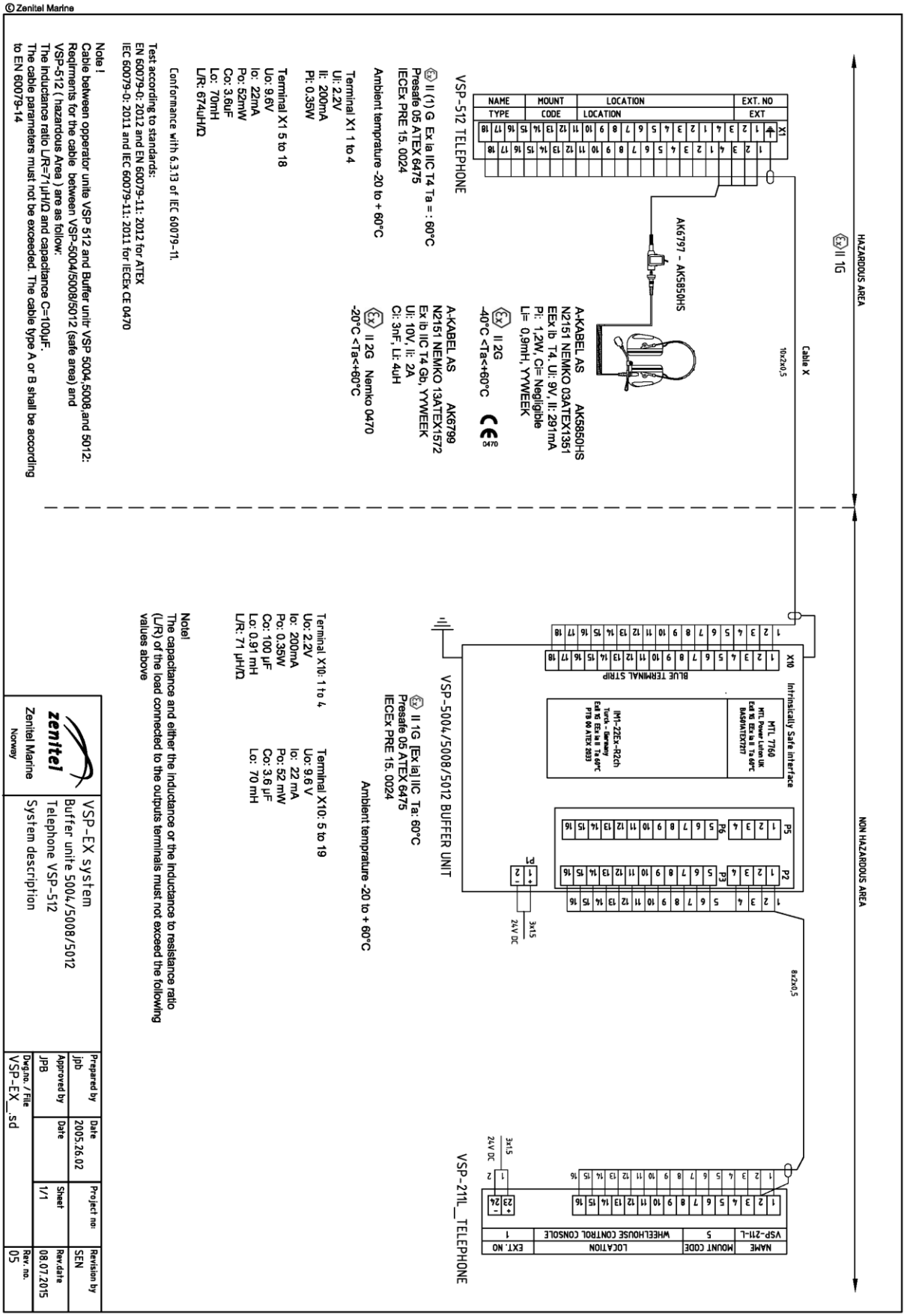
Ex Component	Certificate	CENELEC Standard	IECEx Standard
Weidmüller Interface GmbH & Co. KG, Empty enclosure	IBExU 13 ATEX 1004X IECEx IBE 13.0003U	EN 60079-0:2012, EN 60079-7:2007, EN 60079-31:2008	IEC 60079-0:2011, IEC 60079-7:2006, IEC 60079-31:2008
Phoenix contact GmbH&Co. KG, Terminal block MUT 2,5 BU	SEV 13ATEX0178U IECEx SEV 13.0012U	EN 60079-0:2012, EN 60079-7:2007	IEC 60079-0:2011, IEC 60079-7:2006
Measurement Technology Limited, MTL7760 ac Series shunt Zener diode barriers	BAS 01ATEX7217 IECEx BAS 04.0025	EN 60079-0:2012, EN 60079-11:2012	IEC 60079-0:2011, IEC 60079-11:2011
Hans Turck GmbH & Co. KG, Isolating Switch Amplifier type IM1-22Ex-R 2ch	TÜV 04ATEX2553 IECEx TUN 06.0006X	EN 60079-0:2009, EN 60079-11:2007	IEC 60079-0:2007, IEC 60079-11:2006

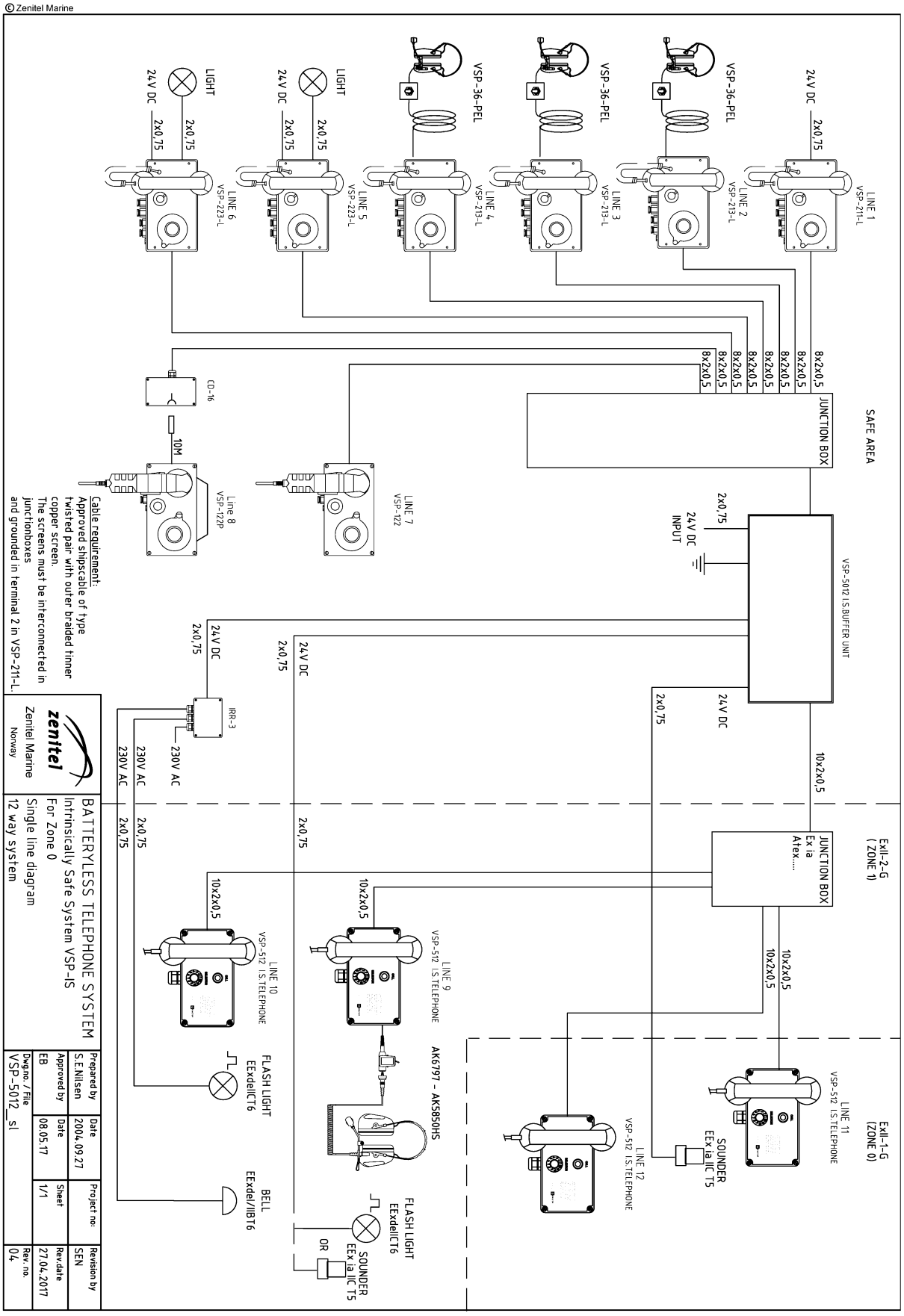
7 Appendix

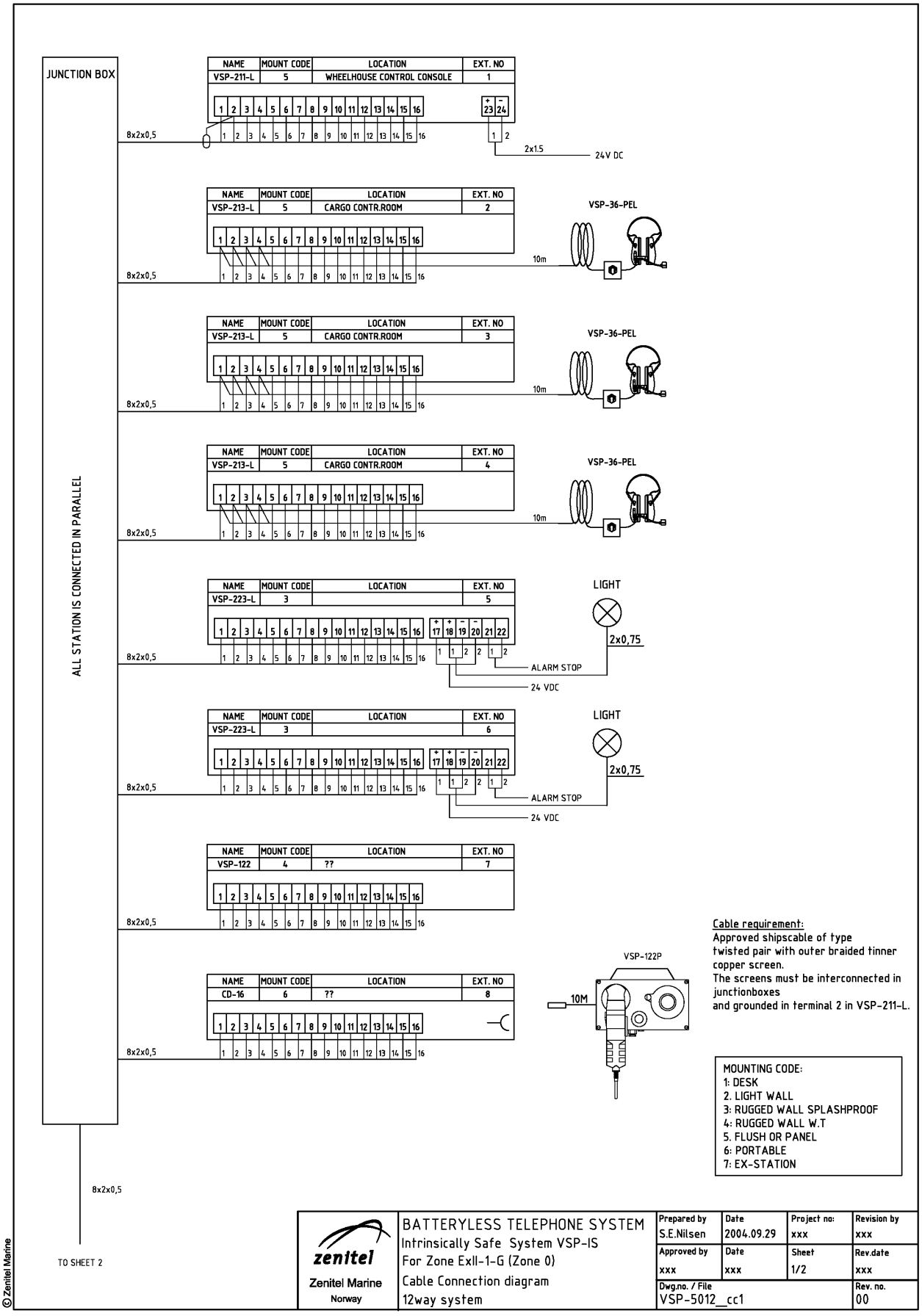
7.1 Technical Documentation

Relevant documentation including certificates and declarations of conformity may be downloaded from: www.zenitel.com/customer-service/library

Document no.	Rev.	Description
VSP-EX_sd	04	System Description
VSP-5012_sl	04	Single line diagram
VSP-5012_cc1	00	Cable connection diagram
VSP-5012_cc2	04	Cable connection diagram
VSP-IS28-MK4_wd	01	Wiring of VSP-5012 for 2x Sounder
VSP-5012_lo	05	Layout buffer unit VSP-5012/ 5008/ 5004
Product label VSP-Ex.pl	05	Product label VSP-512 & VSP-5012/ 5008/ 5004
A100K10446	27.01.2015	Datasheet buffer unit VSP-5012
VSP-5012_wd	03	Wiring diagram for VSP-5012
A100K10446	27.01.2015	Datasheet buffer unit VSP-5008
VSP-5008_wd	01	Wiring diagram for VSP-5008
VSP-5004_ds	27.01.2015	Datasheet buffer unit VSP-5004
VSP-5004_wd	01	Wiring diagram for VSP-5004
VSP-512_ds	27.01.2015	Datasheet for VSP-512
VSP-512_lo	04	Layout telephone VSP-512
VSP-512_wd	02	Wiring diagram for VSP-512
A100K11514	27.01.2015	Datasheet Headset AK5850HS
A100K11569	02.02.2015	Connection & User manual AK6797 & AK6799 Cable with toggle switch for headset AK5850HS
VSP-Ex-CE.04.pdf	5.12.2018	Declaration of Conformity - CE


© Zenitel Marine
HAZARDOUS AREA
NON HAZARDOUS AREA
II 1G
Cable X
10x2x0.5
AK6797 - AK5850HS
A-KABEL AS AK6850HS
N2151 NEMKO 03ATEX1351
EEx ib T4, Ui: 9V, Ii: 291mA
Pi: 1.2W, Ci= Negligible
Li= 0,9mH, YYWEEK
II 2G
-40°C <Ta<+60°C
0470
VSP-512 TELEPHONE
II (1) G Ex ia IIC T4 Ta = : 60°C
Presafe 05 ATEX 6475
IECEx PRE 15. 0024
Ambient temprature -20 to + 60°C
Terminal X1 1 to 4
Ui: 2.2V
Ii: 200mA
Pi: 0.35W
Terminal X1 5 to 18
Uo: 9.6V
Io: 22mA
Po: 52mW
Co: 3.6uF
Lo: 70mH
L/R: 674uH/Ω
Conformance with 6.3.13 of IEC 60079-11.
Test according to standards:
EN 60079-0: 2012 and EN 60079-11: 2012 for ATEX
IEC 60079-0: 2011 and IEC 60079-11: 2011 for IECEx CE 0470
Note !
Cable between opperator unite VSP 512 and Buffer unitr VSP 5004,5008,and 5012:
Reqirments for the cable between VSP-5004/5008/5012 (safe area) and
VSP-512 (hazardous Area) are as follow:
The inductance ratio L/R=71µH/Ω and capacitance C=100µF.
The cable parameters must not be exceeded. The cable type A or B shall be according to EN 60079-14
A-KABEL AS AK6799
N2151 NEMKO 13ATEX1572
Ex ib IIC T4 Gb, YYWEEK
Ui: 10V, Ii: 2A
Ci: 3nF, Li: 4uH
II 2G Nemko 0470
-20°C <Ta<+60°C
VSP-5004/5008/5012 BUFFER UNIT
II 1G [Ex ia] IIC Ta: 60°C
Presafe 05 ATEX 6475
IECEx PRE 15. 0024
Ambient temprature -20 to + 60°C
Terminal X10: 1 to 4
Uo: 2.2V
Io: 200mA
Po: 0.35W
Co: 100 µF
Lo: 0.91 mH
L/R: 71 µH/Ω
Terminal X10: 5 to 19
Uo: 9.6 V
Io: 22 mA
Po: 52 mW
Co: 3.6 µF
Lo: 70 mH
Note!
The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the load connected to the outputs terminals must not exceed the following values above
BLUE TERMINAL STRIP
X10
Infrinsically Safe interface
MTL 7760
MTL Power Luton UK
Ex# 16. EEx ia II Ta 60°C
BASEEXTEX7217
IM1-22Ex-R2ch
Turck - Germany
Ex# 16. EEx ia II Ta 60°C
PTB 00 ATEX 2033
P1
P2
P3
P5
P6
3x1.5
24V DC
8x2x0.5
VSP-211L_TELEPHONE
NAME
MOUNT CODE
LOCATION
EXT. NO
VSP-211-L
5
WHEELHOUSE CONTROL CONSOLE
1
VSP-EX system
Buffer unite 5004/5008/5012
Telephone VSP-512
System description
zenitel
Zenitel Marine
Norway
Prepared by
jpb
Approved by
JPB
Date
2005.26.02
Sheet
1/1
Project no:
Dwg.no. / File
VSP-EX_.sd
Revision by
SEN
Rev.date
08.07.2015
Rev. no.
05


© Zenitel Marine
LINE 1 VSP-211-L
LINE 2 VSP-213-L
LINE 3 VSP-213-L
LINE 4 VSP-213-L
LINE 5 VSP-223-L
LINE 6 VSP-223-L
VSP-36-PEL
VSP-36-PEL
VSP-36-PEL
LIGHT
LIGHT
24V DC
2x0,75
8x2x0,5
JUNCTION BOX
SAFE AREA
CD-16
10M
Line 8 VSP-122P
LINE 7 VSP-122
Cable requirement:
Approved shipscable of type
twisted pair with outer braided tinner
copper screen.
The screens must be interconnected in
junctionboxes
and grounded in terminal 2 in VSP-211-L.
24V DC INPUT
VSP-5012 I.S.BUFFER UNIT
10x2x0,5
IRR-3
230V AC
Exii-2-G (ZONE 1)
JUNCTION BOX Ex ia Atex....
LINE 9 VSP-512 I.S.TELEPHONE
LINE 10 VSP-512 I.S.TELEPHONE
LINE 11 VSP-512 I.S.TELEPHONE
LINE 12 VSP-512 I.S.TELEPHONE
AK6797 – AKS850HS
FLASH LIGHT EExdeIICT6
BELL EExdeI/IIBT6
SOUNDER EEx ia IIC T5
OR
Exii-1-G (ZONE 0)
zenitel
Zenitel Marine
Norway
BATTERYLESS TELEPHONE SYSTEM
Intrinsically Safe System VSP-IS
For Zone 0
Single line diagram
12 way system
Prepared by S.E.Nilsen
Date 2004.09.27
Approved by EB
Date 08.05.17
Sheet 1/1
Project no:
Revision by SEN
Rev.date 27.04.2017
Dwg.no. / File VSP-5012_sl
Rev. no. 04



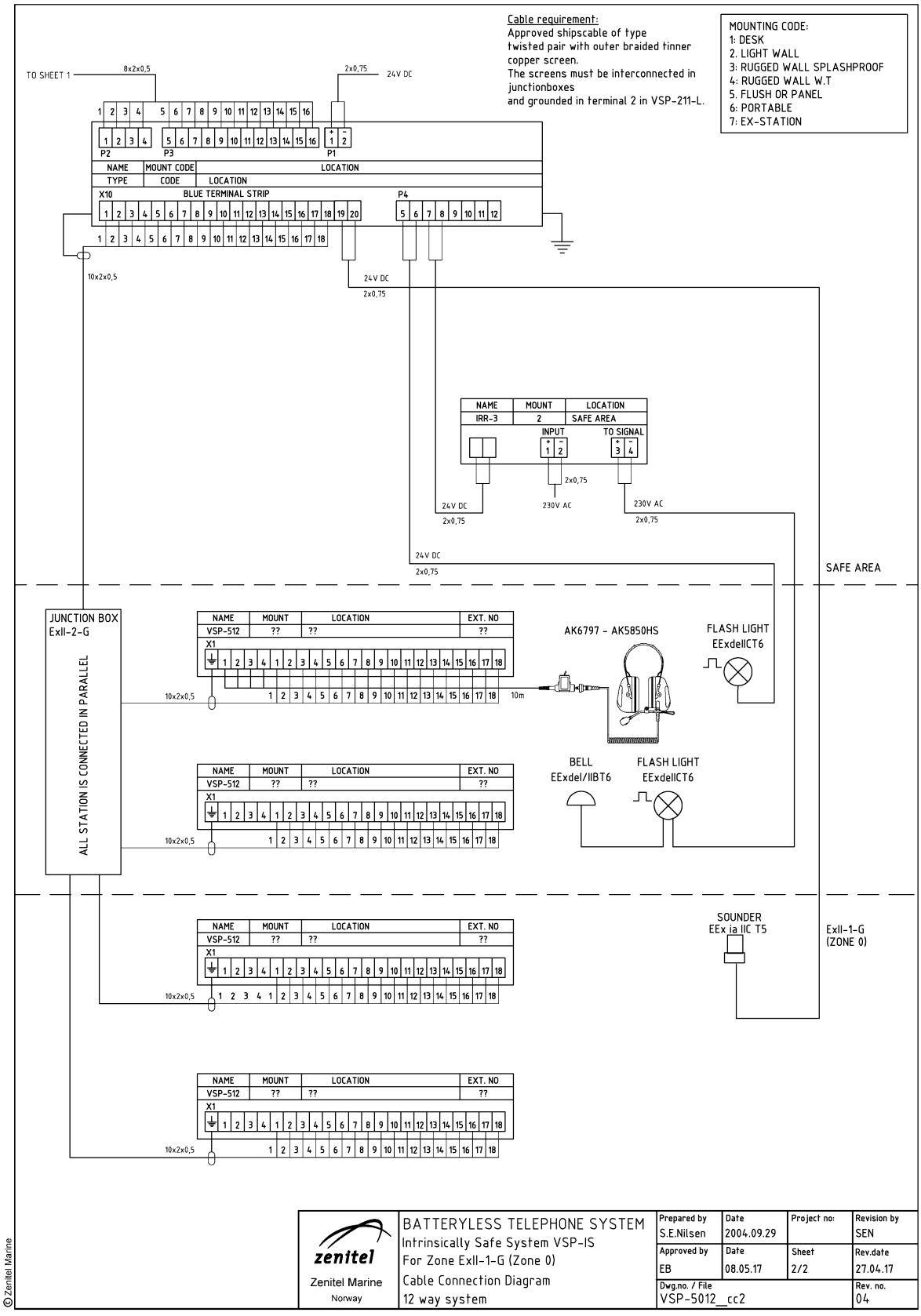
Cable requirement:
Approved shipscable of type
twisted pair with outer braided tinner
copper screen.
The screens must be interconnected in
junctionboxes
and grounded in terminal 2 in VSP-211-L.

MOUNTING CODE:
1: DESK
2. LIGHT WALL
3: RUGGED WALL SPLASHPROOF
4: RUGGED WALL W.T
5. FLUSH OR PANEL
6: PORTABLE
7: EX-STATION

zenitel
Zenitel Marine
Norway

BATTERYLESS TELEPHONE SYSTEM
Intrinsically Safe System VSP-IS
For Zone ExII-1-G (Zone 0)
Cable Connection diagram
12way system

Prepared by	Date	Project no:	Revision by
S.E.Nilsen	2004.09.29	xxx	xxx
Approved by	Date	Sheet	Rev.date
xxx	xxx	1/2	xxx
Dwg.no. / File			Rev. no.
VSP-5012__cc1			00


Cable requirement:
Approved shipscable of type
twisted pair with outer braided tinner
copper screen.
The screens must be interconnected in
junctionboxes
and grounded in terminal 2 in VSP-211-L.
MOUNTING CODE:
1: DESK
2. LIGHT WALL
3: RUGGED WALL SPLASHPROOF
4: RUGGED WALL W.T
5. FLUSH OR PANEL
6: PORTABLE
7: EX-STATION
TO SHEET 1
8x2x0,5
2x0,75
24V DC
P2
P3
P1
NAME
MOUNT CODE
LOCATION
TYPE
CODE
LOCATION
X10
BLUE TERMINAL STRIP
P4
10x2x0,5
24V DC
2x0,75
NAME
MOUNT
LOCATION
IRR-3
2
SAFE AREA
INPUT
TO SIGNAL
2x0,75
24V DC
230V AC
230V AC
2x0,75
SAFE AREA
JUNCTION BOX
ExII-2-G
ALL STATION IS CONNECTED IN PARALLEL
NAME
MOUNT
LOCATION
EXT. NO
VSP-512
??
??
??
X1
10x2x0,5
10m
AK6797 - AK5850HS
FLASH LIGHT
EExdeIICT6
BELL
EExdeI/IIBT6
FLASH LIGHT
EExdeIICT6
SOUNDER
EEx ia IIC T5
ExII-1-G
(ZONE 0)
zenitel
Zenitel Marine
Norway
BATTERYLESS TELEPHONE SYSTEM
Intrinsically Safe System VSP-IS
For Zone ExII-1-G (Zone 0)
Cable Connection Diagram
12 way system
Prepared by
S.E.Nilsen
Date
2004.09.29
Project no:
Revision by
SEN
Approved by
EB
Date
08.05.17
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Rev.date
27.04.17
Dwg.no. / File
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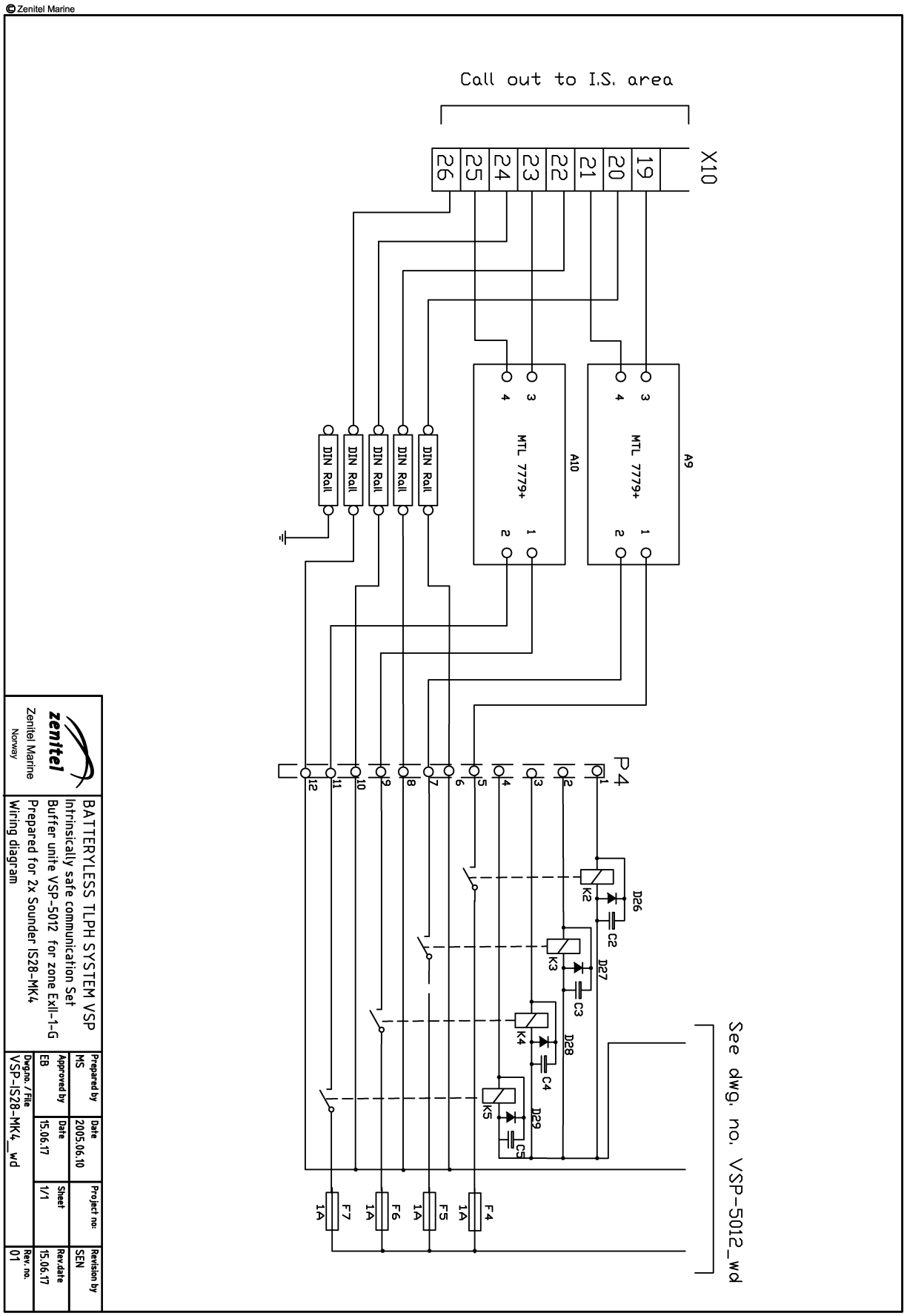
Rev. no.
04
©Zenitel Marine


Zenitel Marine
Call out to I.S. area
X10
19
20
21
22
23
24
25
26
A9
A10
MTL 7779+
DIN Rail
P4
K2
K3
K4
K5
D26
D27
D28
D29
C2
C3
C4
C5
F4 1A
F5 1A
F6 1A
F7 1A
See dwg. no. VSP-5012_wd
BATTERYLESS TLPH SYSTEM VSP
Intrinsically safe communication Set
Buffer unite VSP-5012 for zone Exll-1-G
Prepared for 2x Sounder IS28-MK4
Wiring diagram
Zenitel Marine
Norway
Prepared by MS
Date 2005.06.10
Approved by EB
Date 15.06.17
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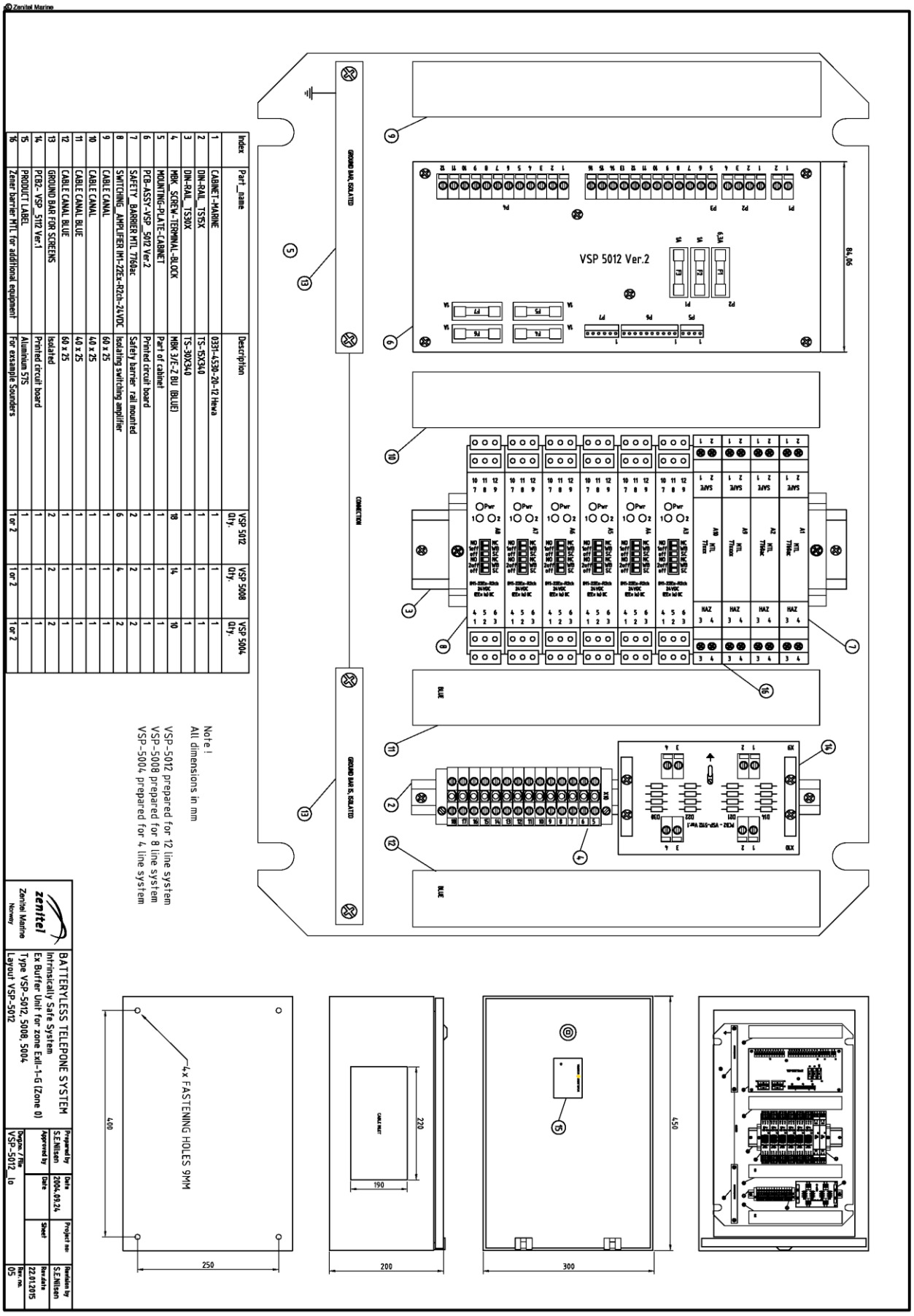
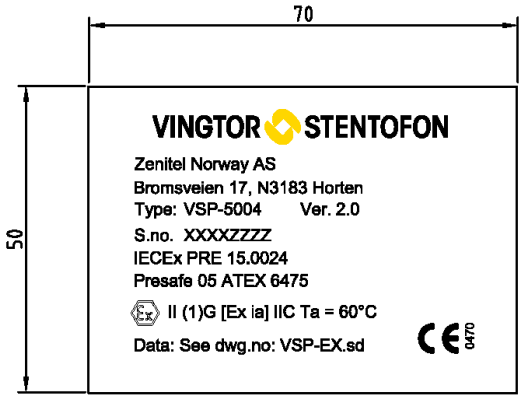
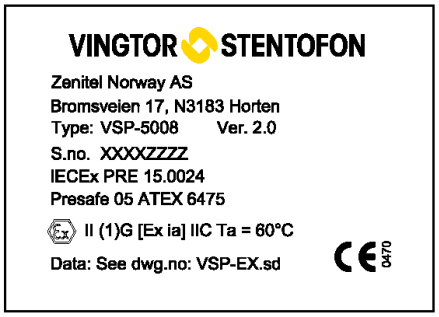
Project no:
Revision by SEN
Rev.date 15.06.17
Rev. no. 01



Index	Part_name	Description	VSP 5012 Qty.	VSP 5008 Qty.	VSP 5004 Qty.
1	CABINET-MARINE	0331-4530-20-12 Hewa	1	1	1
2	DIN-RAIL_TS15X	TS-15X340	1	1	1
3	DIN-RAIL_TS30X	TS-30X340	1	1	1
4	MBK_SCREW-TERMINAL-BLOCK	MBK 3/F-Z BU (BLUE)	18	14	10
5	MOUNTING-PLATE-CABINET	Part of cabinet	1	1	1
6	PCB-ASSY-VSP_5012 Ver.2	Printed circuit board	1	1	1
7	SAFETY_BARRIER MTL 7760ac	Safety barrier rail mounted	2	2	2
8	SWITCHING_AMPLIFIER IM1-22Ex-R2ch-24VDC	Isolating switching amplifier	6	4	2
9	CABLE CANAL	60 x 25	1	1	1
10	CABLE CANAL	40 x 25	1	1	1
11	CABLE CANAL BLUE	40 x 25	1	1	1
12	CABLE CANAL BLUE	60 x 25	1	1	1
13	GROUND BAR FOR SCREENS	Isolated	2	2	2
14	PCB2- VSP_5112 Ver.1	Printed circuit board	1	1	1
15	PRODUCT LABEL	Aluminium 57S	1	1	1
16	Zener barrier MTL for additional equipment	For exsample Sounders	1 or 2	1 or 2	1 or 2

Buffer Units





Telephone VSP-512

Ex logo, VINGTOR-STENTOFON logo as dwg
Typeface Arial Regular 2.0 for other text
Serial no. : XXXXZZZZ, where XXXX is the year,
and ZZZZ is the serial no.
Ver. : 1.0 First version, 2.0 second version, etc.Material:
Material: Aluminium 57S black 1.0 mm thickness
W/ self adhesive tape. Dimension approx. 50x70 mm

zenitel Zenitel Marine Norway	VSP EX system Product label Buffer units: VSP-5004, 5008 and 5012 Telephone VSP-512 Dimension 1:1	Prepared by Sen	Date 2005.02.24	Project no:	Revision by SEN
		Approved by	Date	Sheet 1/1	Rev.date 10.06.2015
		Dwg.no. / File Product label VSP-Ex.pl			Rev. no. 05

VINGTOR STENTOFON

VSP-5012

EX BUFFER UNIT

FEATURES

- **Intrinsically safe buffer unit for mounting in safe area**
- **Support up to 12 substations VSP-512**
- **4x 24V DC outputs to Ex signal units**
- **12 call signal outputs to safe area**
- **Delivered in a metal cabinet for wall mounting**
- **Can be delivered with up to 4x zener barriers for 24V DC sounder in zone 0. 1x zener barrier for each sounder. See order information page 2**

SPECIFICATIONS

Dimensions (WxHxD)	450 x 300 x 200 mm
Mounting	Wall mounted
Weight	11.0 kg
Housing	Steel cabinet
Color	Beige / RAL 7032
Cable entry	Pre-cut cable inlet in bottom
Connections	Screw terminals
Operation voltage	24V DC
Protection mode	EII (1)G [Ex ia] IIC Ta=60°C
Certificate Presafe	05ATEX6475
Certificate IEC	IECEx PRE 15.0024
IP-rating	IP-44

DATASHEET | when communication is critical | 3006200042

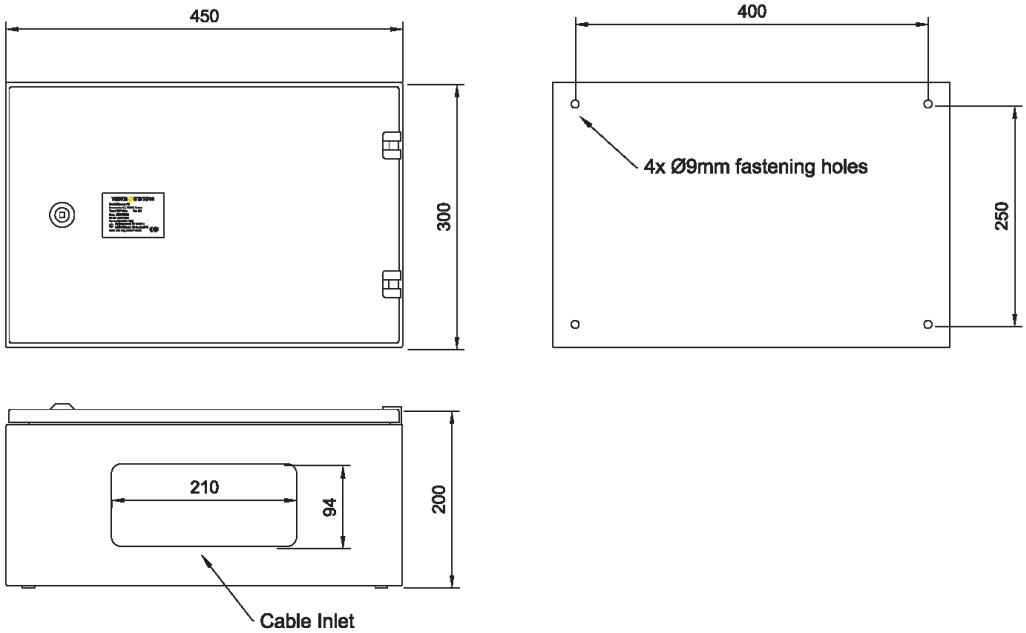
VINGTOR STENTOFON

www.zenitel.com

Zenitel Norway AS
Sandakerveien 24C,
P.O. BOX 4498 Nydalen
NO-0403 Oslo, Norway

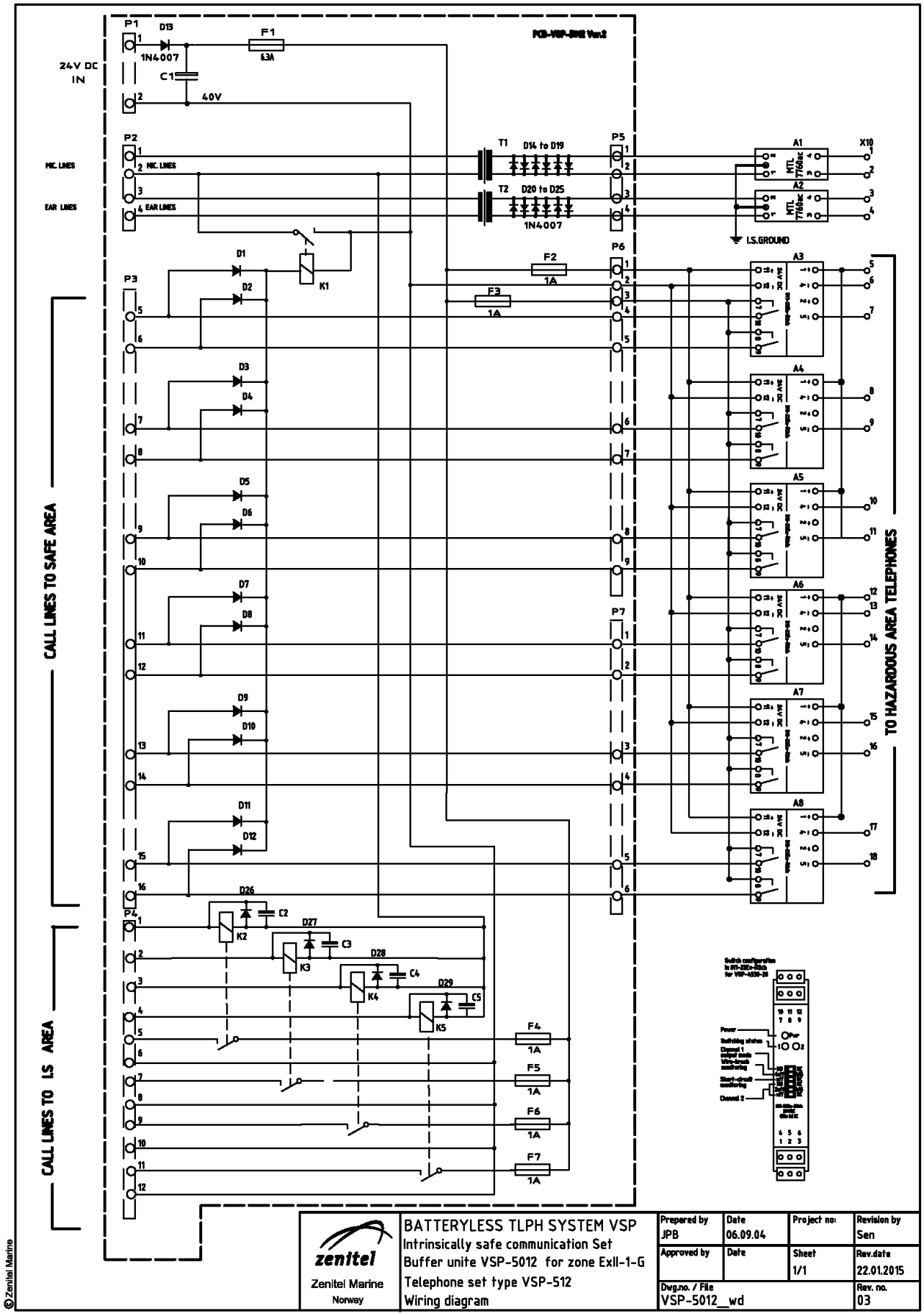
ORDER NUMBER	DESCRIPTION	SHIP WEIGHT
3006200042	VSP-5012 Buffer Unit With Capacity To Call 12 Main Stations In Safe Area	11.0 Kg
Buffer units with additional zener barrier		
3006200043	VSP-5012/1 with 1x zener barrier	11.0 Kg
3006200058	VSP-5012/2 with 2x zener barrier	11.0 Kg
3006200059	VSP-5012/3 with 3x zener barrier	11.0 Kg
3006200060	VSP-5012/4 with 4x zener barrier	11.0 Kg
Related items		
3006200044	VSP-512 Telephone I/S wall w/12-pos. switch IP44, EEX ia IIC T6	1,80 Kg
AK5850HS	A-Kabel TwinCom headband headset ATEX	0,40 Kg
2330040027	AK6797 Cable with latching switch for headset 10m	0.42 Kg
2330040028	AK6799 Cable with latching switch for headset 20 m	0.76 Kg

VSP-5012 EX BUFFER UNIT



ORDER NUMBER 3006200042 DOC NO A100K10446 17.06.2015

sales@zenitel.com


24V DC IN
MIC. LINES
EAR LINES
CALL LINES TO SAFE AREA
CALL LINES TO LS AREA
TO HAZARDOUS AREA TELEPHONES
I.S.GROUND
1N4007
63A
40V
1A
D14 to D19
D20 to D25
K1
K2
K3
K4
K5
T1
T2
F1
F2
F3
F4
F5
F6
F7
C1
C2
C3
C4
C5
D13
D26
D27
D28
D29
P1
P2
P3
P4
P5
P6
P7
A1
A2
A3
A4
A5
A6
A7
A8
X10
zenitel
Zenitel Marine
Norway
BATTERYLESS TLPH SYSTEM VSP
Intrinsically safe communication Set
Buffer unite VSP-5012 for zone Exll-1-G
Telephone set type VSP-512
Wiring diagram
Prepared by JPB
Date 06.09.04
Project no:
Revision by Sen
Approved by
Date
Sheet 1/1
Rev.date 22.01.2015
Dwg.no. / File VSP-5012_wd
Rev. no. 03
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VINGTOR STENTOFON

VSP-5008

EX BUFFER UNIT

FEATURES

- **Intrinsically safe buffer unit for mounting in safe area**
- **Support up to 8 substations VSP-512**
- **4x 24V DC outputs to Ex signal units**
- **8 call signal outputs to safe area**
- **Delivered in a metal cabinet for wall mounting**
- **Can be delivered with up to 4x zener barriers for 24V DC sounder in zone 0. 1x zener barrier for each sounder. See order information page 2**

SPECIFICATIONS

Dimensions (WxHxD)	450 x 300 x 200 mm
Mounting	Wall mounted
Weight	11.0 kg
Housing	Steel cabinet
Color	Beige / RAL 7032
Cable entry	Pre-cut cable inlet in bottom
Connections	Screw terminals
Operation voltage	24V DC
Protection mode	EII (1)G [Ex ia] IIC Ta=60°C
Certificate Presafe	05ATEX6475
Certificate IEC	IECEx PRE 15.0024
IP-rating	IP-44

DATASHEET | when communication is critical | 3006200040

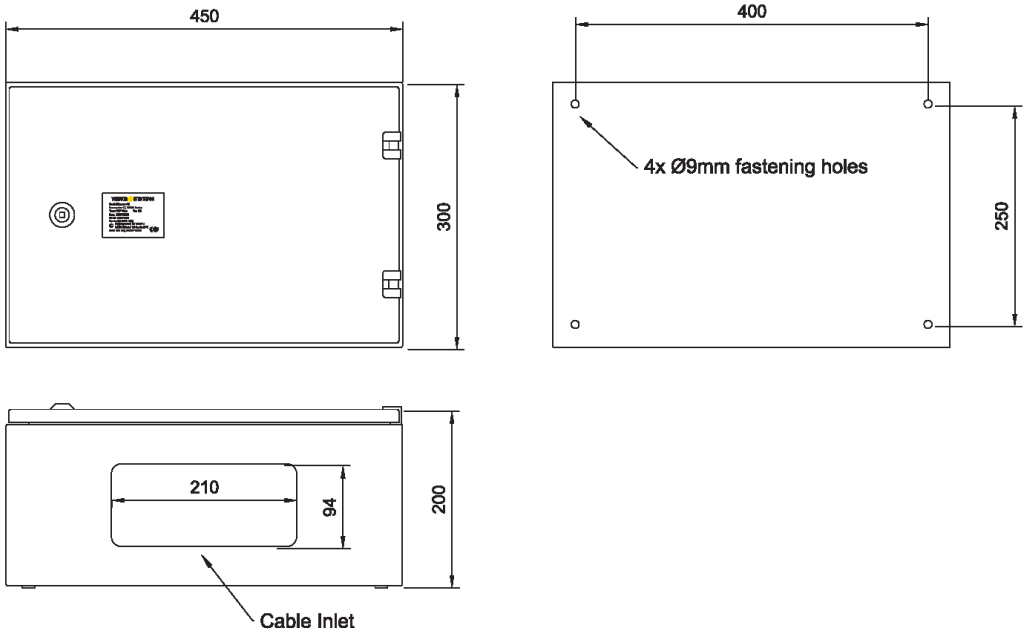
VINGTOR STENTOFON

www.zenitel.com

Zenitel Norway AS
Sandakerveien 24C,
P.O. BOX 4498 Nydalen
NO-0403 Oslo, Norway

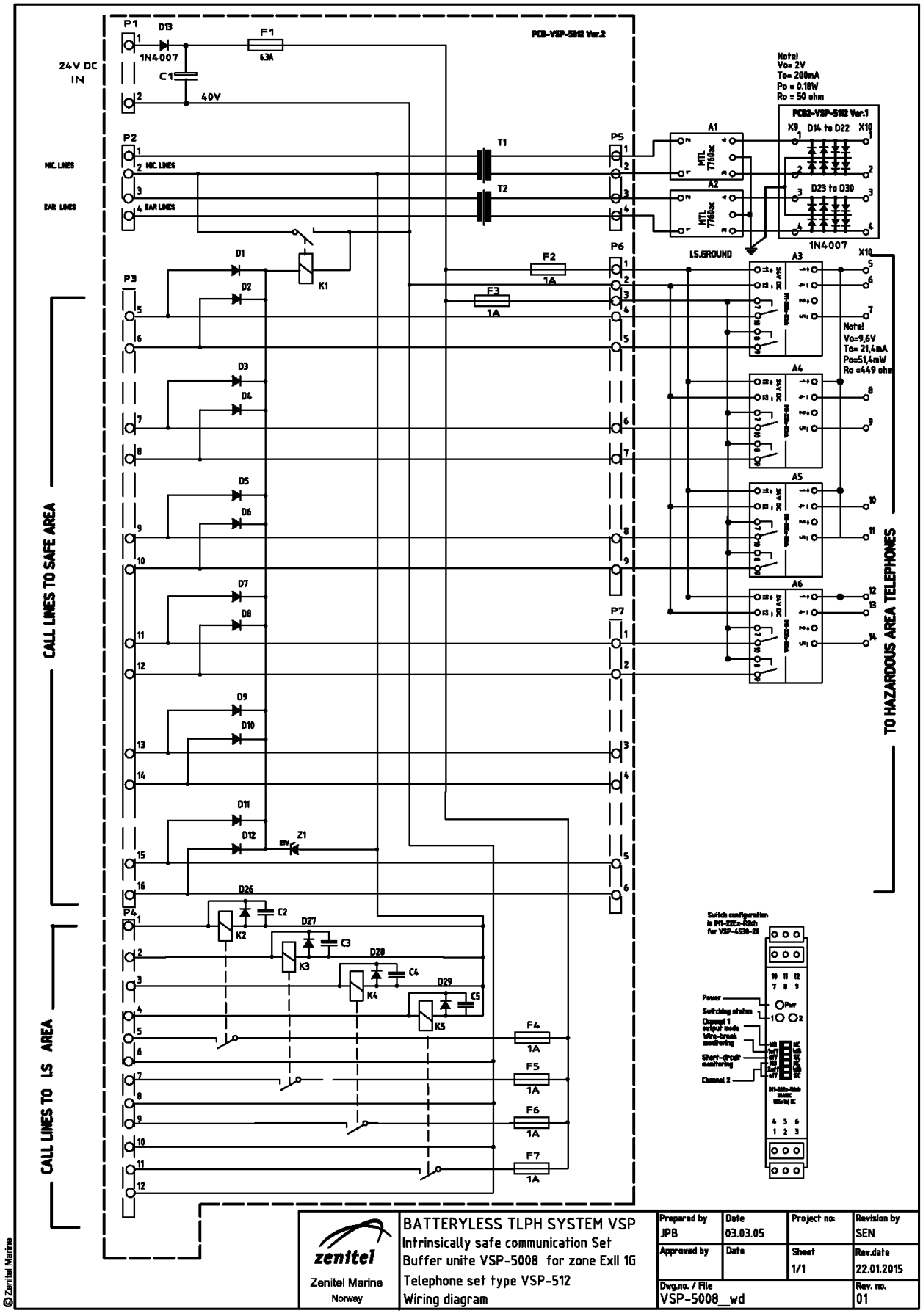
ORDER NUMBER	DESCRIPTION	SHIP WEIGHT
3006200040	Buffer unit w/capacity to call 8 main stations In safe area	11.0 Kg
Buffer units with additional zener barrier		
3005010252	VSP-5008/1 Buffer unit w/capacity to call 8 main st w/1x zener barrier	11.0 Kg
3006200041	VSP-5008/2 Buffer unit w/capacity to call 8 main st w/2x zener barrier	11.0 Kg
3006200056	VSP-5008/3 Buffer unit w/capacity to call 8 main st w/3x zener barrier	11.0 Kg
3006200057	VSP-5008/4 Buffer unit w/capacity to call 8 main st w/4x zener barrier	11.0 Kg
Related items		
3006200044	VSP-512 Telephone I/S wall w/12-pos. switch IP44, EEX ia IIC T6	1,80 Kg
AK5850HS	A-Kabel TwinCom headband headset ATEX	0,40 Kg
2330040027	AK6797 Cable with latching switch for headset 10m	0.42 Kg
2330040028	AK6799 Cable with latching switch for headset 20 m	0.76 Kg

VSP-5008 EX BUFFER UNIT



ORDER NUMBER 3006200040 DOC NO A100K10445 17.05.2015

sales@zenitel.com



VINGTOR STENTOFON

VSP-5004

EX BUFFER UNIT

FEATURES

- **Intrinsically safe buffer unit for mounting in safe area**
- **Support up to 4 substations VSP-512**
- **4x 24V DC outputs to Ex signal units**
- **4 call signal outputs to safe area**
- **Delivered in a metal cabinet for wall mounting**
- **Can be delivered with up to 4x zener barriers for 24V DC sounder in zone 0. 1x zener barrier for each sounder. See order information page 2**

SPECIFICATIONS

Dimensions (WxHxD)	450 x 300 x 200 mm
Mounting	Wall mounted
Weight	11.0 kg
Housing	Steel cabinet
Color	Beige / RAL 7032
Cable entry	Pre-cut cable inlet in bottom
Connections	Screw terminals
Operation voltage	24V DC
Protection mode	EII (1)G [Ex ia] IIC Ta=60°C
Certificate Presafe	05ATEX6475
Certificate IEC	IECEx PRE 15.0024
IP-rating	IP-44

DATASHEET | when communication is critical | 3006200037

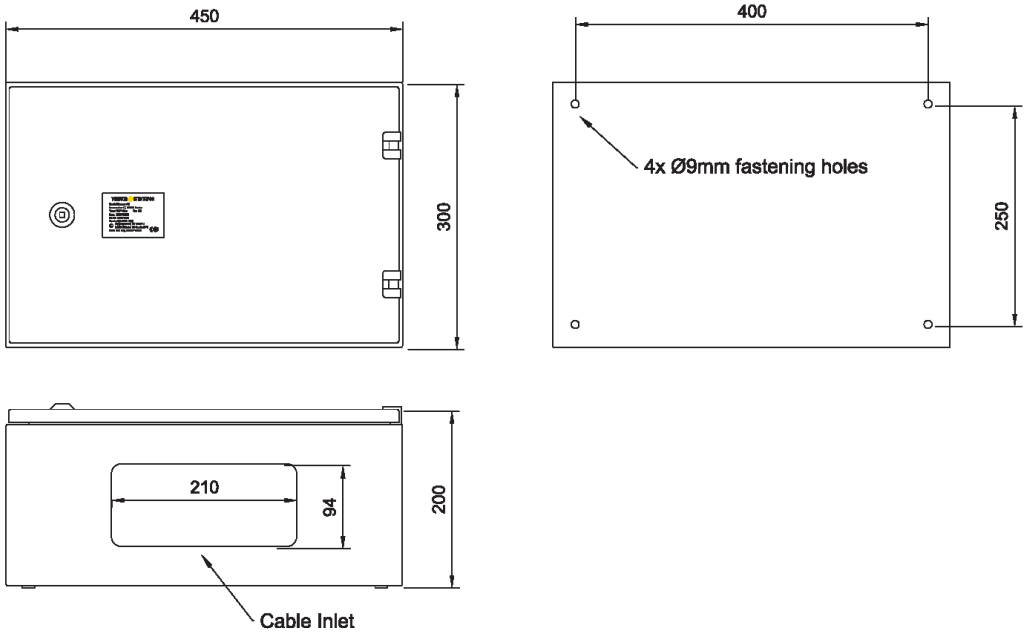
VINGTOR STENTOFON

www.zenitel.com

Zenitel Norway AS
Sandakerveien 24C,
P.O. BOX 4498 Nydalen
NO-0403 Oslo, Norway

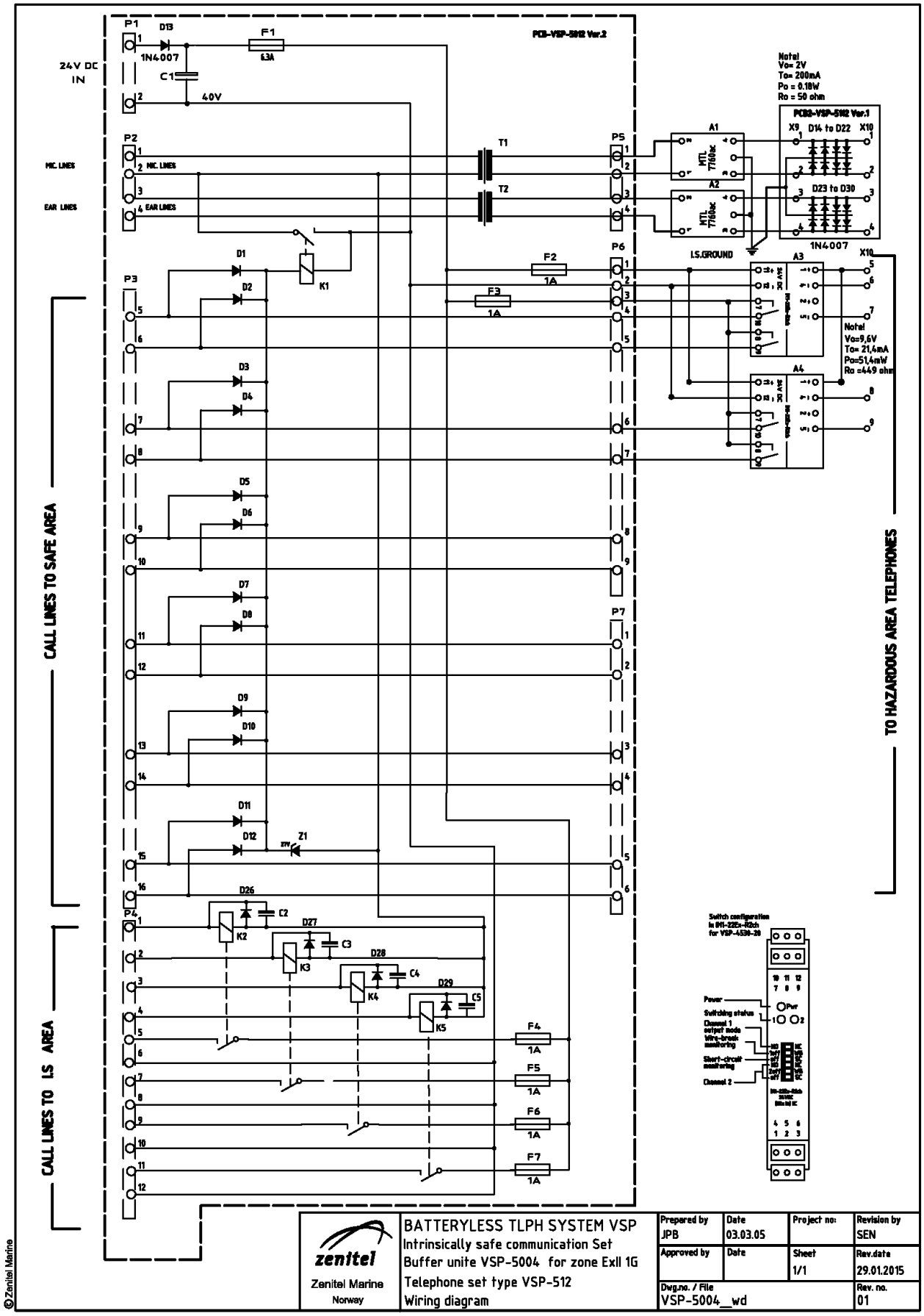
ORDER NUMBER	DESCRIPTION	SHIP WEIGHT
3006200037	Buffer unit w/capacity to call 4 main stations In safe area	11.0 Kg
Buffer units with additional zener barrier		
3006200038	VSP-5004/1 Buffer unit w/capacity to call 4 main st w/1x zener barrier	11.0 Kg
3006200039	VSP-5004/2 Buffer unit w/capacity to call 4 main st w/2x zener barrier	11.0 Kg
3006200053	VSP-5004/3 Buffer unit w/capacity to call 4 main st w/3x zener barrier	11.0 Kg
3006200054	VSP-5004/4 Buffer unit w/capacity to call 4 main st w/4x zener barrier	11.0 Kg
Related items		
3006200044	VSP-512 Telephone I/S wall w/12-pos. switch IP44, EEX ia IIC T6	1,80 Kg
AK5850HS	A-Kabel TwinCom headband headset ATEX	0,40 Kg
2330040027	AK6797 Cable with latching switch for headset 10m	0.42 Kg
2330040028	AK6799 Cable with latching switch for headset 20 m	0.76 Kg

VSP-5004 EX BUFFER UNIT



ORDER NUMBER 3006200037 DOC NO A100K10444 17.06.2015

sales@zenitel.com


24V DC IN
MIC. LINES
EAR LINES
CALL LINES TO SAFE AREA
CALL LINES TO LS AREA
TO HAZARDOUS AREA TELEPHONES
I.S.GROUND
1N4007
Note!
Vo= 2V
To= 200mA
Po = 0.18W
Ro = 50 ohm
Note!
Vo=9,6V
To= 21,4mA
Po=51,4mW
Ro =449 ohm
Power
Switching status
Channel 1 output mode
Wire-break monitoring
Short-circuit monitoring
Channel 2
zenitel
Zenitel Marine
Norway
BATTERYLESS TLPH SYSTEM VSP
Intrinsically safe communication Set
Buffer unite VSP-5004 for zone Exll 1G
Telephone set type VSP-512
Wiring diagram
Prepared by JPB
Date 03.03.05
Project no:
Revision by SEN
Approved by
Date
Sheet 1/1
Rev.date 29.01.2015
Dwg.no. / File VSP-5004__wd
Rev. no. 01
©Zenitel Marine

VINGTOR STENTOFON

VSP-512

INTRINSICALLY SAFE SUBSTATION

FEATURES

- Intrinsically safe substation
- Suitable for mounting in hazardous areas
- Ex II 1G (Zone 0)
- 12 extensions selector switch and a call button
- Used together with buffer unit mounted in safe area
- Delivered for wall mounting

SPECIFICATIONS

Dimensions (WxHxD)	220 x 208 x 170 mm (with handset)
Mounting	Bulkhead
Weight	1,8 kg
Housing	Glassfibre reinforced polyester box
Color	Black
IP-rating	IP-66
Cable entry	M20 x 1,5
Connections	Screw terminals
Protection mode	II (1)G Ex ia IIC T4 Ta=60°C
Certificate Presafe	05ATEX6475
Certificate IEC	IECEx PRE 15.0024

DATASHEET | when communication is critical | 3006200044

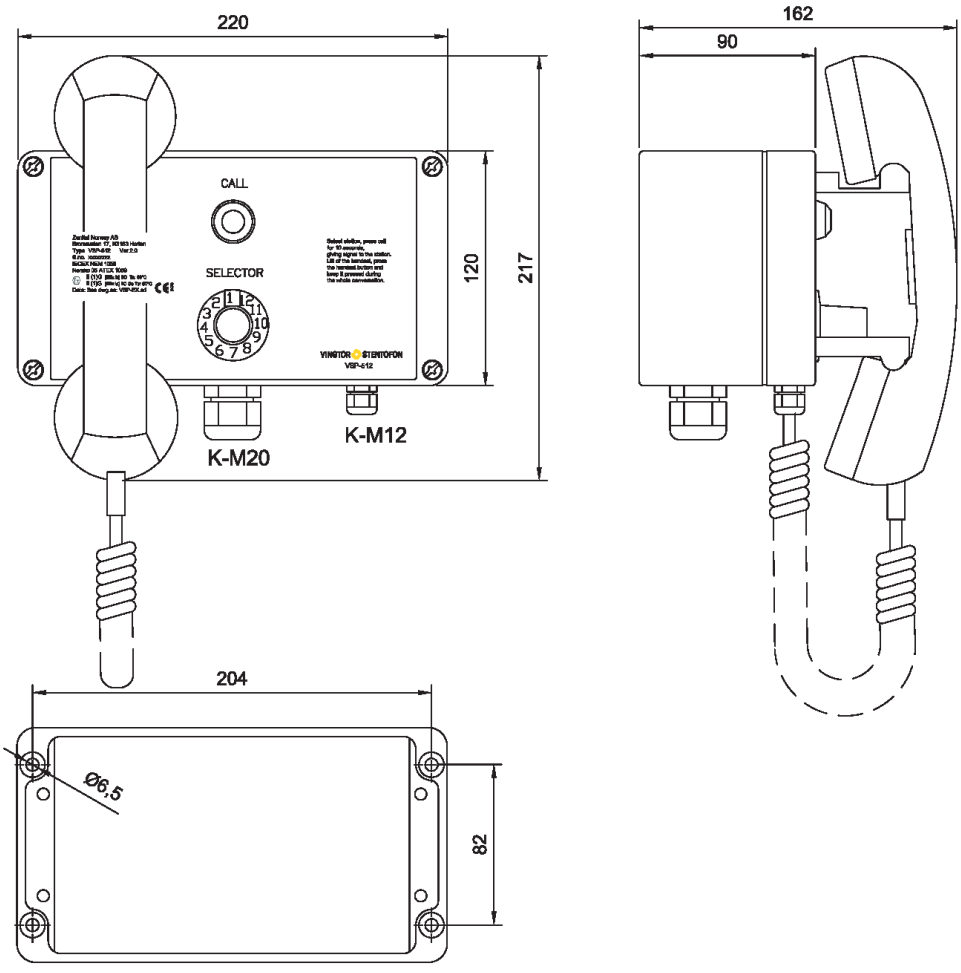
VINGTOR STENTOFON

www.zenitel.com

Zenitel Norway AS
Sandakerveien 24C,
P.O. BOX 4498 Nydalen
NO-0403 Oslo, Norway

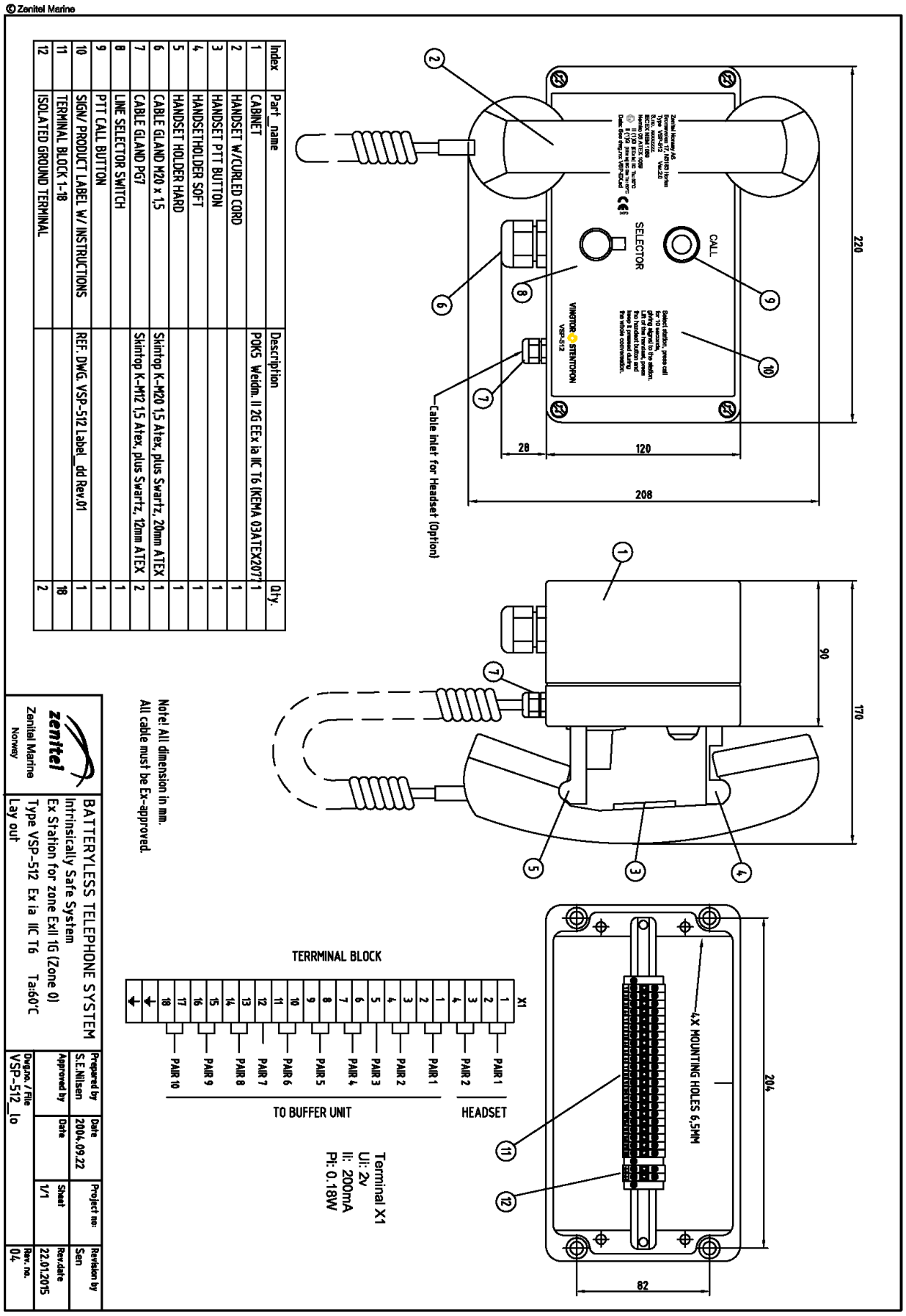
ORDER NUMBER	DESCRIPTION	SHIP WEIGHT
3006200044	VSP-512 Intrinsically safe substation with 12 extension selector switch for wall mounting in hazardous area	1.8 kg
	Related items	
AK5850HS	A-Kabel TwinCom headband headset ATEX	0,40 Kg
2330040027	AK6797 Cable with latching switch for headset 10m	0.42 Kg
2330040028	AK6799 Cable with latching switch for headset 20 m	0.76 Kg

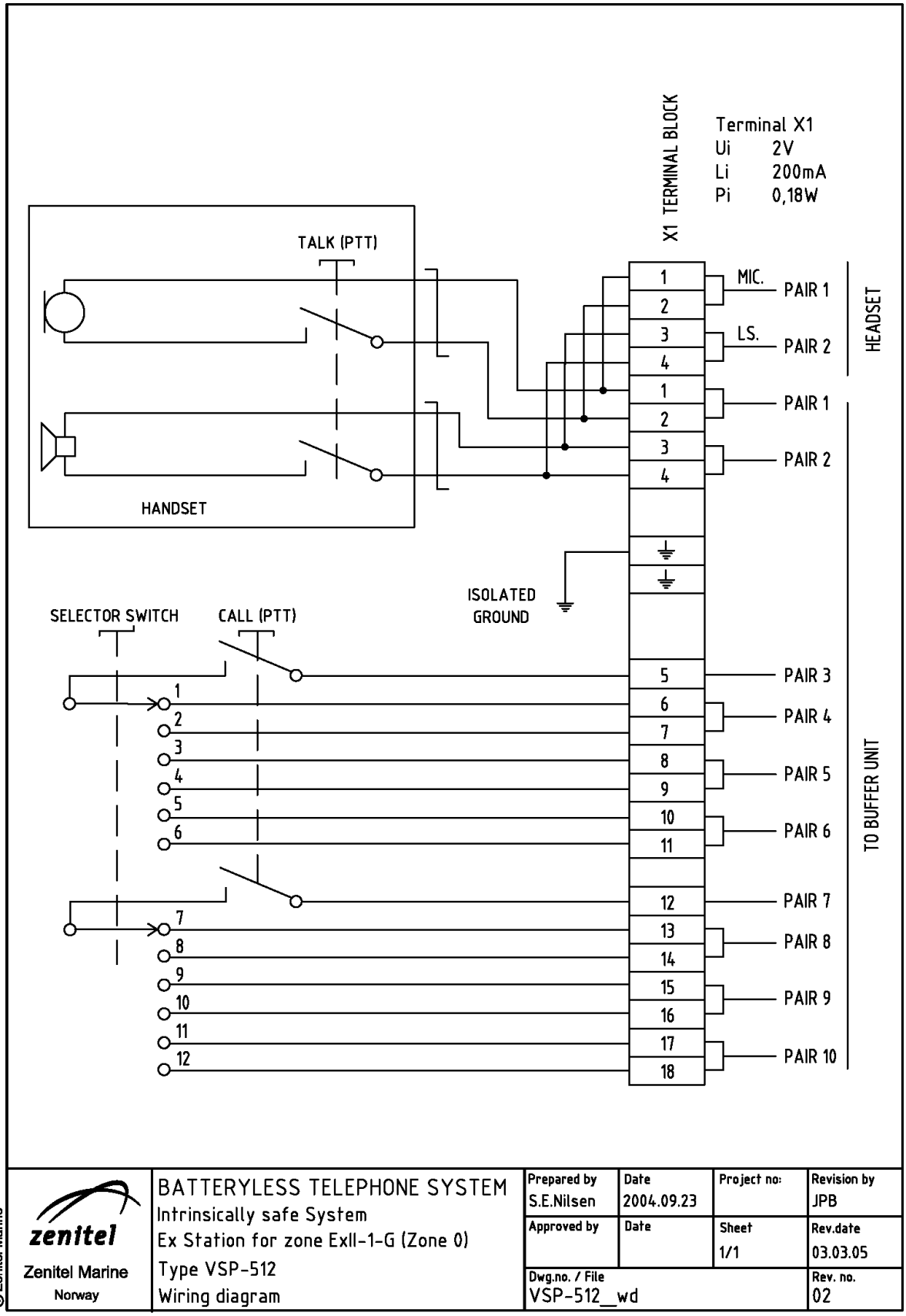
VSP-512 INTRINSICALLY SAFE SUBSTATION



ORDER NUMBER 3006200044 DOC NO A100K10447 17.06.2015

sales@zenitel.com


© Zenitel Marine
Index
Part_name
Description
Qty.
1 CABINET POKS Weidm. II 2G EEx ia IIC T6 IKEMA 03ATEX2071 1
2 HANDSET W/CURLED CORD 1
3 HANDSET PTT BUTTON 1
4 HANDSETHOLDER SOFT 1
5 HANDSET HOLDER HARD 1
6 CABLE GLAND M20 x 1,5 Skintop K-M20 1,5 Atex, plus Swartz, 20mm ATEX 1
7 CABLE GLAND PG7 Skintop K-M12 1,5 Atex, plus Swartz, 12mm ATEX 2
8 LINE SELECTOR SWITCH 1
9 PTT CALL BUTTON 1
10 SIGN/ PRODUCT LABEL W/ INSTRUCTIONS REF. DWG. VSP-512 Label_dd Rev.01 1
11 TERMINAL BLOCK 1-18 18
12 ISOLATED GROUND TERMINAL 2
SELECTOR
CALL
VINGTOR STENTOFON
VSP-512
Cable inlet for Headset (Option)
220
208
120
28
90
170
82
204
4X MOUNTING HOLES 6,5MM
TERRMINAL BLOCK
X1
PAIR 1
PAIR 2
PAIR 3
PAIR 4
PAIR 5
PAIR 6
PAIR 7
PAIR 8
PAIR 9
PAIR 10
TO BUFFER UNIT
HEADSET
Terminal X1
Ui: 2v
Ii: 200mA
Pi: 0.18W
Note! All dimension in mm.
All cable must be Ex-approved.
zenitel
Zenitel Marine
Norway
BATTERYLESS TELEPHONE SYSTEM
Intrinsically Safe System
Ex Station for zone Exll 1G (Zone 0)
Type VSP-512 Ex ia IIC T6 Ta:60'C
Lay out
Prepared by S.E.Nilsen
Approved by
Date 2004.09.22
Date
Project no: Sen
Revision by
Dwg.no. / File VSP-512_lo
Sheet 1/1
Rev.date 22.01.2015
Rev. no. 04


X1 TERMINAL BLOCK
Terminal X1
Ui 2V
Li 200mA
Pi 0,18W
TALK (PTT)
HANDSET
MIC.
LS.
PAIR 1
PAIR 2
HEADSET
PAIR 1
PAIR 2
ISOLATED GROUND
SELECTOR SWITCH
CALL (PTT)
PAIR 3
PAIR 4
PAIR 5
PAIR 6
TO BUFFER UNIT
PAIR 7
PAIR 8
PAIR 9
PAIR 10
1 2 3 4 5 6 7 8 9 10 11 12
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
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zenitel
Zenitel Marine
Norway
BATTERYLESS TELEPHONE SYSTEM
Intrinsically safe System
Ex Station for zone ExII-1-G (Zone 0)
Type VSP-512
Wiring diagram
Prepared by S.E.Nilsen
Date 2004.09.23
Project no:
Revision by JPB
Approved by
Date
Sheet 1/1
Rev.date 03.03.05
Dwg.no. / File VSP-512__wd
Rev. no. 02

VINGTOR STENTOFON

AK5850HS

A-KABEL TWINCOM HEADBAND HEADSET ATEX

whencommunicationiscritical

FEATURES

- **Rugged headset for EX application**
- **Noise-cancelling microphone**
- **High quality digital background noise reduction***
- **HD-voice compatible***
- **High quality audio**
- **Optional in-ear monitors may be connected for added damping in extreme environments**
- **IP Rating: IP66**
- **Standard 4-pole Nexus connector for easy connection/replacement**
- **For use with 1008150025 TAX.2b "EX-approved Cable for headset with PTT" Designed for Exigo Ex access panels and Turbine EX explosion-proof intercoms**
- **For use with 2330040027 AK6797(10mtr) or 2330040028 AK6799 (20mtr) , "EX-approved Cable for headset with PTT" Designed for VSP EX explosion-proof station VSP-512**

*when used with Turbine Industrial intercom stations

DESCRIPTION

The AK5850HS is a high quality industrial EX approved headset for use in rugged conditions. It offers an adjustable boom microphone and a short curly cable for flexible connectivity through a 4-pole Nexus plug.

Used with the TAX-2b, AK6797 or AK6799 Ex approved Cable and Plugbox with PTT for EX Headset, it offers an exceptional range of over 10 (20) meters. The pluggable nature of the headset allows for easy maintenance/replacement as well as allowing operators to use their personal headset as a hearing protection aid, and disconnecting once the conversation is over.

SPECIFICATIONS

MECHANICAL	
Weight	400 g
ENVIRONMENTAL	
Operational Temperature	-40°C to +60°C
Ingress Protection (IP)	IP-66
ELECTRICAL	
Impedance	230 ohm
Sensitivity (mic)	4 mV / 220 ohm

DATASHEET AK5850HS

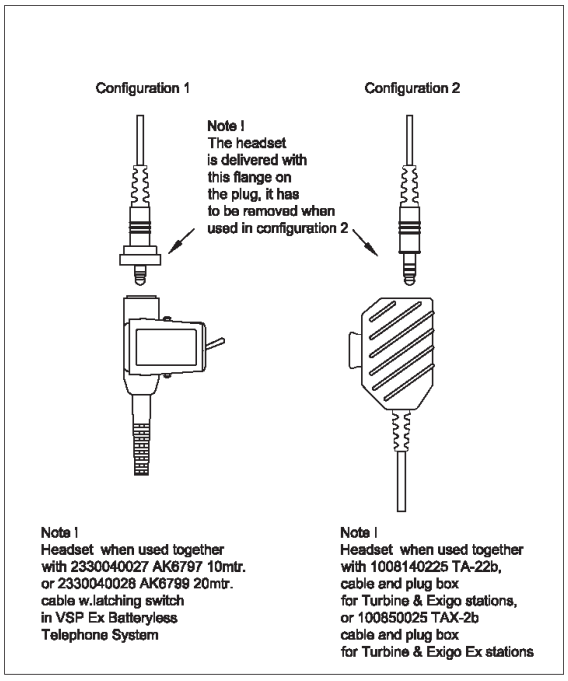
www.zenitel.com

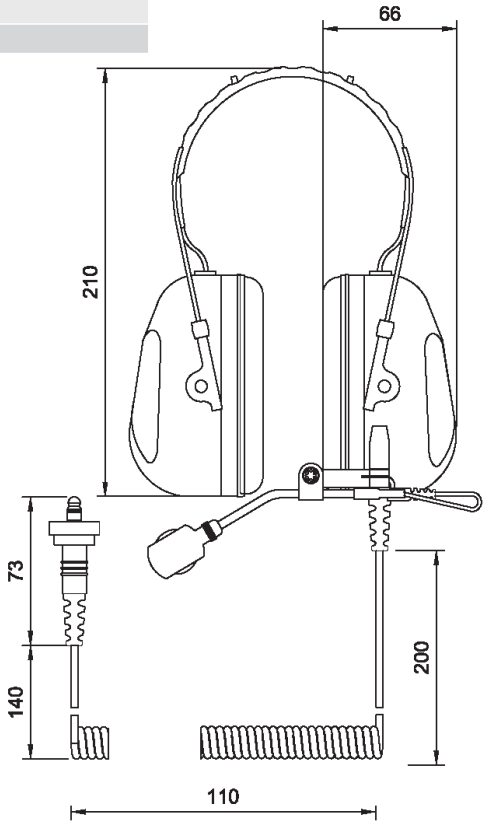
Zenitel Norway AS
Sandakerveien 24C, P.O. BOX 4498 Nydalen
NO-0403 Oslo, Norway

ORDER NUMBER	DESCRIPTION	SHIP WEIGHT
AK5850HS	A-Kabel TwinCom headband headset ATEX	0,40 Kg
1008150025	TAX-2b EX-approved Cable for headset with PTT	
2330040027	AK6797 Cable with latching switch for headset 10m	0.42 Kg
2330040028	AK6799 Cable with latching switch for headset 20 m	0.76 Kg

A-KABEL TWINCOM HEADBAND HEADSETH ATEX

ACOUSTICAL	
Frequency Response	90-7000 Hz
Noise Reduction	-12dB @ 1kHz
SOUND ATTENUATION	
Above 1kHz:	-35 to -40 dB
500-1000 Hz	-27.5 to -35 dB
125-500 Hz	-15 to -27.5 dB
H84	31 dB (with in-ear monitor: 39 dB)
M84	26 dB (with in-ear monitor: 37 dB)
L84	20 dB (with in-ear monitor: 33 dB)
SNR84	29 dB (with in-ear monitor: 40 dB)
NRR	21 dB

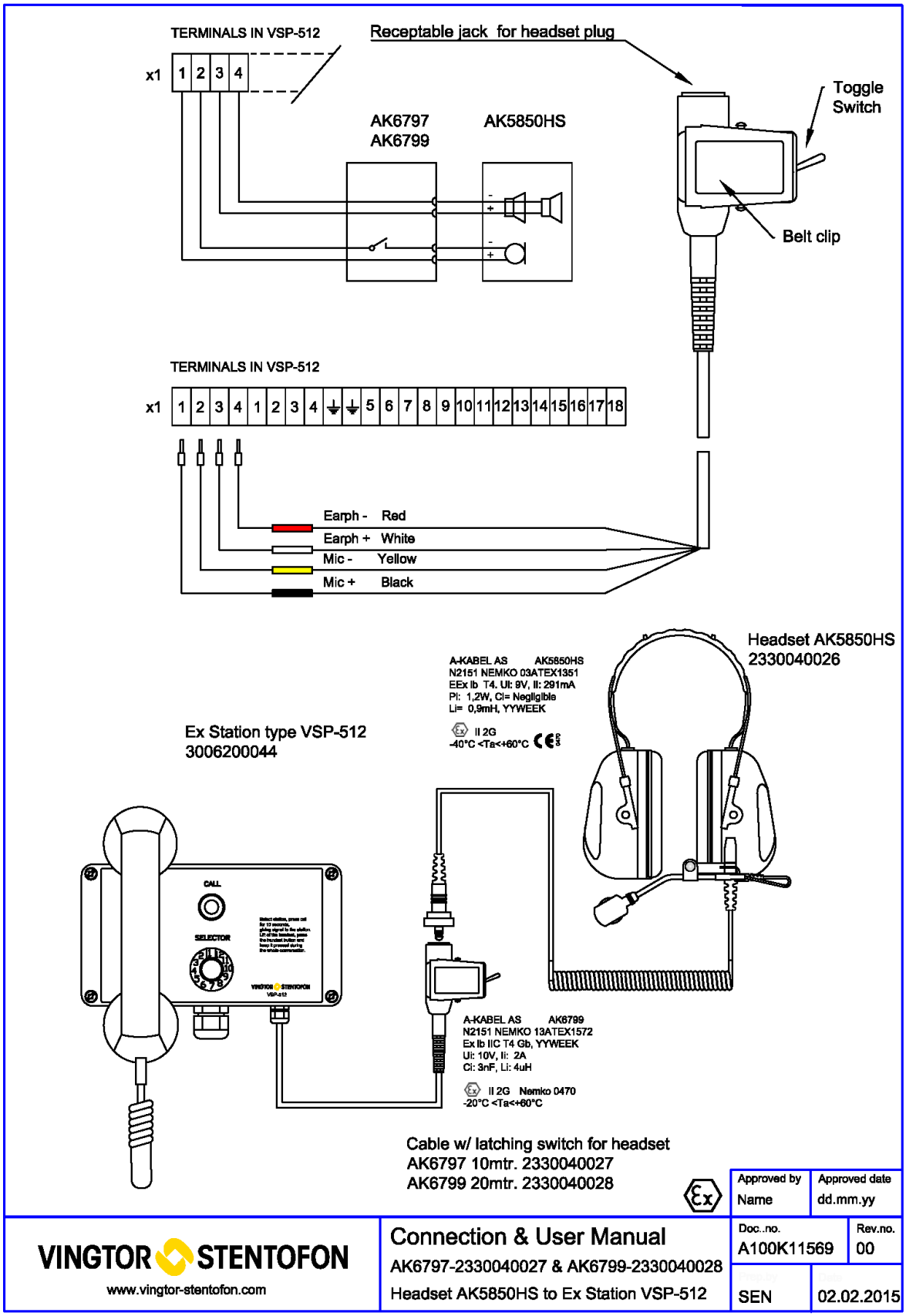




ORDER NUMBER DOC NO

AK5850HS A100K11514 27.01.2015

sales@zenitel.com


TERMINALS IN VSP-512
x1
1 2 3 4
Receptable jack for headset plug
Toggle Switch
AK6797
AK6799
AK5850HS
Belt clip
TERMINALS IN VSP-512
x1
1 2 3 4 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Earph - Red
Earph + White
Mic - Yellow
Mic + Black
Headset AK5850HS
2330040026
A-KABEL AS AK5850HS
N2151 NEMKO 03ATEX1351
EEx Ib T4. Ui: 9V, Ii: 291mA
Pi: 1,2W, Ci= Negligible
Li= 0,9mH, YYWEEK
II 2G
-40°C <Ta<+60°C
Ex Station type VSP-512
3006200044
CALL
SELECTOR
A-KABEL AS AK6799
N2151 NEMKO 13ATEX1572
Ex Ib IIC T4 Gb, YYWEEK
Ui: 10V, Ii: 2A
Ci: 3nF, Li: 4uH
II 2G Nemko 0470
-20°C <Ta<+60°C
Cable w/ latching switch for headset
AK6797 10mtr. 2330040027
AK6799 20mtr. 2330040028
Approved by
Name
Approved date
dd.mm.yy
VINGTOR STENTOFON
www.vingtor-stentofon.com
Connection & User Manual
AK6797-2330040027 & AK6799-2330040028
Headset AK5850HS to Ex Station VSP-512
Doc..no.
A100K11569
Rev.no.
00
Prep.by
SEN
Date
02.02.2015

User Information

Please notice that this unit shall not be used in Ex areas together with any equipment that cannot meet the requirements in the ATEX certificate and Directive 94/9/EEC

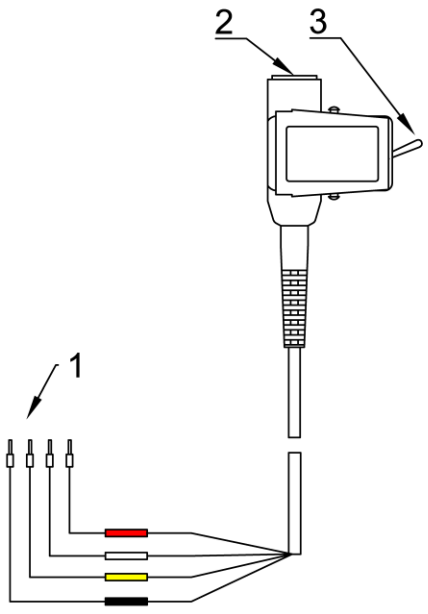
Connect the connector pins (1) into the output terminals X1 in the VSP-512 Ex Telephone according to VSP-Ex Installation & User Manual A100K11872.

Fasten the the unit by steel clip in the clothing or where it may be convenient to operate. Plug the male jack from the headset into the receptacle jack 2) on the latching switch. Be sure of that the male plug is pressed to the bottom of the receptacle.

The latching switch is working in simplex mode. The toggle switch (3) has to be set to "ON" position for transmitting. To listen only, set the toggle switch to "OFF" position.

You may clean the PTT-unit by using a clean cloth or a cloth with water and ordinary soap. Alcohol may be used to disinfect the unit. Avoid dust, water and other pollutions to come into the receptacle jack (2). This area may be cleaned by ordinary cleansing spray for electronics added on a Q-tip. For additional information and spare parts, please contact Zenitel AS.

All repair and maintenance shall be performed by an Ex-approved workshop or by the manufacturer A-kabel



Nemko13ATEX1572

AK6797: Ui:10Vdc, Ii:2A, Ci:1,5nF, Li:2uH
AK6799: Ui:10V, Ii:2A, Ci:3nF, Li:4uH

Ex	ib	IIC	T4
Equipment for ATEX	Type of protection	Gas group	Equipment protection level

Temperature range: -20 to +40 degrees C

	II2	G	Gb	CE 0470
Explosion proof According to ATEX	Equipment group, and category	Gas (Zone)	Equipment Protection level	Nemko Notified Body ID

VINGTOR STENTOFON

CE

EU Declaration of Conformity

The following equipment is declared to be in conformity according to the following directives and international standards when the equipment is installed and used in a manner consistent with the manufacturer's recommendations and reference documents.

Manufacturer:	**Zenitel Norway AS** **Bromsveien 17, N-3194 Horten, Norway**
Type of equipment:	**VSP Amplified Batteryless Telephone System**
Models:	**Product name** — **Product number** VSP-5004 — 3006200037 VSP-5008 — 3006200040 VSP-5012 — 3006200042 VSP-512 — 3006200044
Electromagnetic Emissions: By Council Directive 2014/30/EU	**EN 61000-6-3:2007** **EN 61000-6-4:2007**
Electromagnetic Immunity: By Council Directive 2014/30/EU	**EN 61000-6-1:2007** **EN 61000-6-2:2005** **EN 55024:2010**
Environmental:	**EN60945:2002**
ATEX Directive: 2014/34/EU	**EN 60079-0:2012** **EN 60079-11:2012**
IECEx Compliance:	**IEC 60079-0:2011** **IEC 60079-11:2011**
Marking VSP-5004/5008/5012: **Marking VSP-512:**	**II (1)G [Ex ia] IIC -20°C ≤ Ta ≤ +60°C** **II 1G Ex ia IIC T4 -20°C ≤ Ta ≤ +60°C** CE 0470
Ingress protection on VSP-512:	**IP 66 according to EN 60529:1991 Degrees of protection provided by enclosures (IP Code)**
EC-Type Examination Certificate: **IECEx Certificate of Conformity:** **Certificates issued by:**	**Presafe 15 ATEX 6475** **IECEx PRE 15.0024** DNV GL Nemko Presafe AS, NB 2460 Veritasveien 3, N-1363 Høvik, Norway
Production Quality Assurance Notification:	**Nemko 05ATEX4259Q** **NO/NEM/QAR14.0005/01** Nemko AS, NB 0470 Gaustadalléen 30, 0314 Oslo, Norway

The manufacturer is solely responsible for making this declaration. The technical file is maintained at the company address listed above.

Name, Surname	**Thomas Hægh**
Position/Title	**CTO**
Place of issue	**Oslo**
Date of issue	**2018-12-05**

VSP-Ex-CE.04

Zenitel Norway AS