

DOCUMENTATION HANDBOOK



PHONTECH
CIS 3100 / 3101 / 3102
COMMAND INTERCOM SYSTEM



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SYSTEM / MASTER STATIONS:

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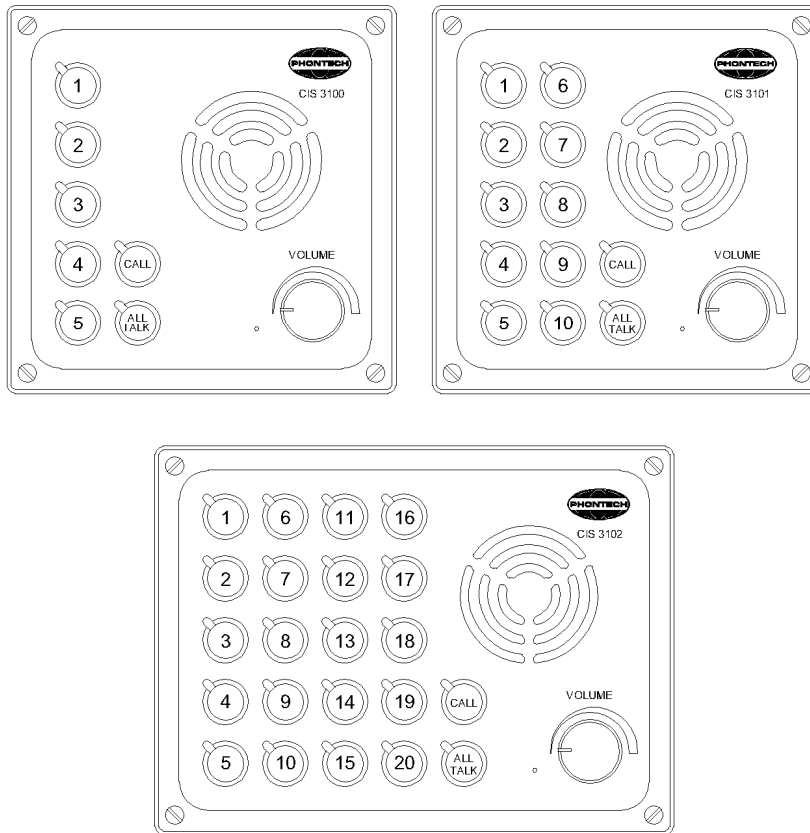
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1.0 INTRODUCTION / INTRODUKSJON

Eng.:

A command intercom system (CIS) consist of one MASTER station (3100 series), most often located on the ships bridge, and distributed SUBSTATIONS (9000 series) in cabins, engine room, engine control room a.s.o.
The CIS may also comprise port and starboard side BRIDGE WING stations.
The CIS may also be interconnected with the PHONTECH small public address and alarm system (SPA).
The CIS serves as two-way command and intercom system.
The communication channels is to/from the master station and the substations. Please note that communication between the substations is not possible.
The compact design makes the CIS easy to install. The mounting is for 3100/3101 DIN 144 x 144mm, 3102 DIN 192 x 144 mm. flush mounting, or wall mounting. (wallmount backbox required)

No.:

*Et kommando intercom system (CIS) består av en MASTER stasjon (3100 serie), som oftest plassert på båten bro, og distribuerte understasjoner (9000 serie) i lugarer, motorrom, motor kontrollrom osv.
CIS kan også omfatte babord og styrbord broving stasjoner.
Systemet kan også tilkobles til PHONTECH "small public address and alarm system" (SPA).
CIS tjener som et to-veis kommando kommunikasjonssystem, med oppkallsmulighet begge veier.
Kommunikasjonen går mellom master og understasjoner, dvs. at kommunikasjon mellom understasjoner ikke er mulig.
Det kompakte designet gjør systemet lett å installere. Montering er for 3100/3101 DIN 144 x 144mm, 3102 DIN 192 x 144 mm. innfelt montering eller på vegg montasje. ting. Veggmontering krever ekstra bakkoks som er ekstrautstyr.*

2.0 GENERAL DESCRIPTION / GENERELL BESKRIVELSE

Eng.:

The CIS is delivered as follows:

MASTER STATIONS

- 3100 CIS MASTER STATION max. 5 extensions. Amplifier capacity 10W.
- 3101 CIS MASTER STATION max. 10 extensions. Amplifier capacity 20W.
- 3102 CIS MASTER STATION max. 20 extensions. Amplifier capacity 40W.

SUBSTATIONS, ACCESSORIES

- 9001 substation for cabins and/or accommodation areas.
- 9003 substation for headset with relay.
- 9004 call unit for loudspeaker, weatherproof.
- 9009 call unit for portable loudspeaker, weatherproof.
- 9011 plug box, weatherproof.
- 9016 call unit for loudspeaker, loudspeaker on/off switch, weatherproof.

- 0035 engine control room phone. (handset)
- 0005 headset 10 m. cable and plug.
- 0006 additional handset.
- 0010 portable loudspeaker cable and plug.
- 0012 gooseneck microphone unit, PTT, flush mounting.
- 0013 microphone box, bridge wing connection.
- 0017 hand microphone cable and plug.
- 0019 line amplifier.

The MASTER stations contains the electronics required in an CIS.

As an extended value added feature, the CIS 310X units are supplied with a "loudspeaker as substation / automatic call disable" facility. This makes the installer able to connect plain loudspeakers directly as substations. During power on the CIS 310X unit will detect such configurations and prevent calls from this positions.

No.:



CIS leveres som følger:

MASTER STASJONER:

- 3100 CIS MASTER STASJON maks. 5 linjer. Forsterker kapasitet 10 W.
- 3101 CIS MASTER STASJON. maks. 10 linjer. Forsterker kapasitet 20 W.
- 3102 CIS MASTER STASJON. maks. 20 linjer. Forsterker kapasitet 40 W.

UNDERSTASJONER/UTSTYR:

- 9001 understasjon for lugar/ oppholdsrom.
- 9003 understasjon for hodesett med rele.
- 9004 oppkallsenhet for høyttaler, værsikker.
- 9009 kalleenhet for bærbar høyttaler, værsikker.
- 9011 plugg boks værsikker.
- 9016 kalleenhet for høyttaler, høyttaler bryter, værsikker.

- 0035 maskinkontroll rom telefon. (håndsett)
- 0005 hodesett med 10m kabel og plugg.
- 0006 ekstra handsett.
- 0010 bærbar høyttaler, med kabel og plugg.
- 0012 svanehals mikrofon enhet, tal knapp, innfelt montering.
- 0013 mikrofonboks for broving tilkobling.
- 0017 håndmikrofon med kabel og plugg.
- 0019 linjeforsterker.

MASTER stasjonene inneholder stort sett all elektronikken som kreves i et CIS system.

I tillegg er alle CIS 310X enheter utstyrt med funksjonen "høyttaler som understasjon / automatisk oppkalls-hindring.

Dette gir installatøren mulighet til å tilkoble høyttalere direkte til understasjon linjer. Ved påslag vil CIS 310X enheten oppdage dette og i ettertiden hindre oppkall fra disse posisjonene.

3.0 FACILITY LIST

Eng.:

(see figure 1)

CIS 3100:

- Connection for 5 substation lines.

CIS 3101:

- Connection for 10 substation lines.

CIS 3102:

- Connection for 20 substation lines.

COMMON:

- Loudspeaker as substation / automatic call disable
- Connection for port and starboard bridge wing stations.
- Connection for phonTECH SPA system.
- Built-in wide-band loudspeaker.
- Built- in condenser microphone.
- Automatic gain control for speech level.
- Loudspeaker volume control
- Bi-coloured key indicator leds.
- Call key.
- Talk key.
- Automatic all call function.
- Extra signal organ output for line 1-4.



- External loudspeaker output connections.

OPTIONS.

- Line engagement time out.
- Optional extra signal organ output for all lines (up to 10)
- Optional line amplifier connection.
- Gooseneck/handheld microphone connection.

No.:

CIS 3100:

- Tilkobling for 5 understasjoner.

CIS 3101:

- Tilkobling for 10 understasjoner.

CIS 3102:

- Tilkobling for 20 understasjoner.

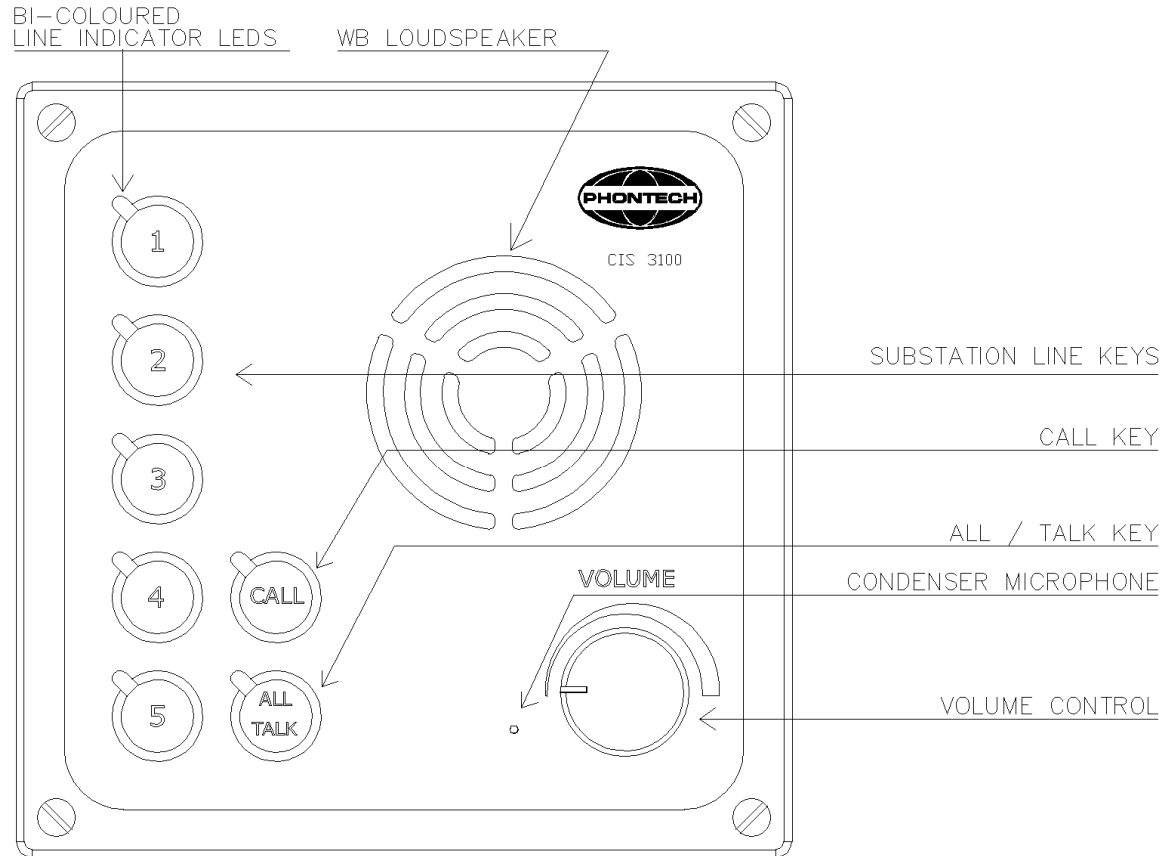
FELLES:

- Høytaler som biapparat / automatisk oppkalls-hindring
- Tilkobling for babord og styrbord broving stasjoner.
- Tilpasset for sammenkobling med phonTECH SPA system.
- Innebygget bredbånds høytaler.
- Innebygget kondensator mikrofon.
- Automatisk nivå kontroll krets for tale.
- Høytaler volum kontroll.
- To-fargede linje indikasjons lysdioder.
- Kalle tast.
- Tale tast.
- Automatisk allekall funksjon.
- Ekstra signal giver utgang for linje 1-4.
- Ekstern høytaler utgang.

VALGBART:

- Automatisk tidsstyrt linje nedkobling
- Ekstra signal utgang for alle linjer. (opp til 10)
- Linje forsterker tilkobling.
- Svane Hals /håndmikrofon tilkobling

FIGURE 1 / FIGUR 1



NOTE:
ALL CALL: PRESS TALK WITH NO LINE BUTTONS ACTIVE

4.0 MOUNTING / INSTALLATION / SCREEN CONNECTION
MONTERING / INSTALLASJON OG SKJERMTERMINERING

Eng.:

MOUNTING:

The master stations 3100/3101/3102 is delivered for flush mounting.
On request the units may be delivered with wall-mounting box. (option)

Front plate dimensions 3100 and 3101:	144 x 144 mm. (HxW)
3102:	144 x 192 mm. (HxW)
Cut- out dimensions for flush-mounting 3100 and 3101:	115 x 115 mm. (HxW)
3102:	115 x 163 mm. (HxW)
Depth, all types	100 mm.
flush mounted:	100 mm.
wall mounted:	100 mm.

INSTALLATION:

The installation should be planned in details before starting. The cables should be listed in a cable plan, with number of pairs a.s.o.

The location of each unit in the intercom system should be planned to obtain maximum performance and user ability.



The master station location/ orientation with regards to the operator must be taken especially into consideration. Please note the gooseneck mic (if installed) is "close talk". A close talk microphone has the ability to reduce surrounding noise to a minimum. The drawback is that the operator has to speak no more than 5-10 cm away from the microphone.

SCREEN CONNECTION.

In order to obtain maximum performance after installation, it is necessary to terminate the cables and ground the screens in a good manners. The cables is to be de-isolated by removing approximately 250 mm of the outer insulation. Then the screen braid is cut off appr. 30 mm longer than the outer isolation. The conductors is de-isolated and fitted with end-crimps before they are inserted into the terminal. The outer screen is clamped to the cable fixing arcs inside the cabinet. Cable ties of a conductive type is recommended for best result.

Please see figure 2 for more details.

No.:

*Hoved stasjonene 3100/3101/3102 leveres som standard for innfelt montering.
På forespørsel kan veggboks leveres for utvendig montering*

<i>Front plate dimensjoner 3100 and 3101:</i>	<i>144 x 144 mm. (HxB)</i>
<i>3102:</i>	<i>144 x 192 mm. (HxB)</i>
<i>Utstansingsmål for innfelt montering, 3100 and 3101:</i>	<i>115 x 115 mm. (HxB)</i>
<i>3102:</i>	<i>115 x 163 mm. (HxB)</i>
<i>Dybde, alle typer</i>	<i>innfelt montering: 100 mm.</i>
	<i>utvendig montering: 100 mm.</i>

INSTALLASJON:

Installasjonen bør planlegges i detalj før start. Kablene bør listes i en kabel plan med nummererte par etc. Plasseringen av hver enhet i intercom systemet bør kartlegges for å oppnå maksimal bruksvennlighet og ytelse. Det bør legges spesiell vekt på plassering av hovedstasjon i forhold til operatøren. Viktig å vite er at dersom det installeres en svanehals mikrofon (gooseneck microphone) er denne ofte "close-talk", dvs. med direktiv virkning. En direktiv mikrofon har den fordel at den er lite følsom for omgivelsesstøy. Ulempen er at operatøren må svært nær for å tale (5-10 cm).

SKJERM TERMINERING:

For å oppnå maksimal lyd kvalitet er det meget viktig med god og riktig terminering av skjerm. Kablene skal avisoleres ved å fjerne den ytre beskyttelses kappen i en lengde på ca 250mm. Deretter kuttet ytterskjermen slik at denne stikker ca. 30 mm ut fra kabelisolasjonen. Lederne avisoleres og helst påmonteres termineringshylser for å oppnå best og varig kontakt i skrutermineralene. Ytterskjermen klemmes inntil de dertil egnede feste punktene på innsiden av bakkoksen. For å oppnå best kontakt bør festebånd av elektrisk ledende materiale benyttes.

Ref. figur 2 for detaljer

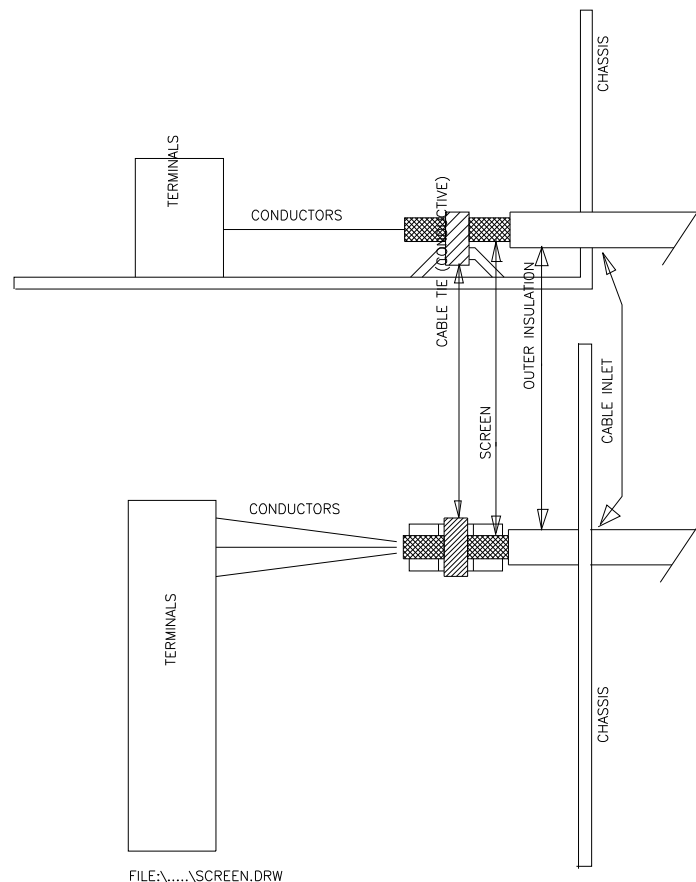
FIGURE 2 / FIGUR 2

Eng.:

The cable outer screens is to be terminated as shown. Conductive type of cable ties is recommended to obtain best possible screen connections.

No.:

Kabelens yterskjerm skal termineres som vist. Festebånd av ledende materiale bør benyttes for å oppnå best kontakt mellom skjerm og chassis.



5.0 CABLE REQUIREMENTS / KRAV TIL KABEL

Eng.:

- To substations: one pair, twisted, outer screen.
- If extra signal organ: one pair extra.
- To bridge wings: two pairs, individually twisted, outer screen.
- Power cables: one pair, gnd.
- Minimum conductor area all cable types: 0.75 mm².

**IMPORTANT: TO SECURE UN-INTERFERED OPERATION DO NOT COMBINE SIGNAL CABLES WITH OTHER CABLE TYPES SUCH AS MAINS SUPPLY.
THE CABLING FOR THE CIS SYSTEM SHOULD BE A SEPARATE NETWORK.**



Consult drawings 97301-007-EC (CIS 3100), 97301-002-EC (CIS 3101) and 97301-013-EC (CIS 3102) for further cabling information.

No.:

Til understasjoner: ett par revolvert, utvendig skjerm.

Ved ekstra signal organ: et ekstra par.

Til broving: to par, individuelt revolvert, utvendig skjerm.

Kraft kabler: ett par, jord.

Minimum tverrsnitt alle typer: 0,75 mm².

VIKTIG: FOR Å SIKRE UFORSTYRRET DRIFT, IKKE KOMBINER SIGNAL KABLER MED KABLER FOR ANNET UTSTYR SOM F.EKS. NETTKABLER OSV. KABLINGEN FOR CIS SYSTEMET SKAL VÆRE ET EGET NETT.

I dokumentene 97301-007-EC (CIS 3100), 97301-002-EC (CIS 3101) og 97301-013-EC (CIS 3102) finnes ytterligere informasjon.

6.0. SELECTIVE CALLS / SELEKTIVE ANROP

Eng.:

This chapter describes the operation of the CIS master stations. In idle status / after power-up, the master station line indicator leds illuminates dim green as night orientation light.

No.:

Dette kapittelet beskriver bruken av hovedstasjonene. I hvilestilling og etter påslag lyser hovedstasjonens lysdioder svakt grønt . (bakbelysning)

6.1. MASTER CALL TO A SUBSTATION / HOVEDSTASJON ANROPER UNDERSTASJON

Eng.:

- Select the line by operating the appropriate line key. The line indicator led turns red.
- Now press the CALL key. This will generate an attention tone in the substation unit loudspeaker and activate the extra signal device if any.

Note: several lines may be called simultaneously.

No.:

- Velg ønsket linje ved å trykke inn linjeknappen. Linje indikator lysdiode skifter til rødt fullt lys.

- Trykk CALL knappen. Dette starter en oppmerksomhetstone i understasjonens høyttaler/ hodesett. Eventuelt ekstra signal organ starter også.

NB: flere linjer kan kalles samtidig.

6.2. MASTER CALL TO ALL SUBSTATIONS / HOVEDSTASJON ANROPER ALLE UNDERSTASJONER

Eng.:

- Press the ALL/TALK key without any lines engaged. The master station automatically enters the all-call mode. All the leds illuminates red colour.

-Speak into the microphone.

No.:

- Trykk ALL/TALK knappen uten noen linjer aktive. Hovedstasjonen velger automatisk alle-kall modus. Alle lysdiodene tenner rødt lys, også lysdiode for ALL/TALK knappen.

-Snakk direkte inn i mikrofonen.



6.3 A SUBSTATION ANSWER THE CALL FROM THE MASTER / UNDERSTASJONEN SVARER PÅ ANROP FRA HOVEDSTASJON

Eng.:

When the attention tone is heard in the loudspeaker and / or the extra signal organ is activated:

- Press the talk-key and answer the call.
- Keep the TALK key pressed all time during the conversation.

No.:

Når oppmerksomhetstonen høres i høyttaleren / eller ekstra signal giver aktiveres:

- *Trykk på TALK knappen for å svare oppkallet.*
- *Hold TALK knappen inne hele tiden mens samtalen pågår.*

6.3. THE MASTER TALKING TO THE SUBSTATION / HOVEDSTASJONEN SNAKKER TIL EN UNDERSTASJON

Eng.:

When the call is answered:

- Operate the TALK key on the master and talk into the microphone / loudspeaker.
- Release the talk-key to return to listen-mode.

No.:

Når understasjonen svarer oppkallet:

- *Trykk TALK knappen og snakk inn i mikrofonen / høyttaleren.*
- *Slipp TALK knappen for å returnere til lytte-modus.*

6.5. SUBSTATION CALL TO MASTER / UNDERSTASJON OPPKALL TIL HOVEDSTASJON

Eng.:

- Press the CALL button on the substation / call unit. This generates an attention tone in the master station as long as the call-button is kept pressed. Simultaneously the appropriate line indicator led turns full light green to indicate which substation made the call.

Note: If a call occurs during an on-going conversation, the attention tone is disabled, but the line indicator led change to green colour full intensity.

No.:

- Trykk på CALL knappen på understasjonen. Dette starter oppkallstonen i hovedstasjonen, og denne lyder så lenge understasjonen prøver å kalle opp. Samtidig tenner linjens lysdiode grønn, fullt lys, for å indikere hvilken understasjon som kaller.

Viktig: hvis et oppkall inntreffer under pågående samtale, aktiveres ikke kalletonen, men lysdioden tenner fullt grønt lys.

6.6. THE MASTER ANSWER THE CALL FROM A SUBSTATION / HOVEDSTASJONEN SVARER PÅ ANROP FRA UNDERSTASJONEN

Eng.:

To answer the call from a substation:

- Press the appropriate line key. The line indicator led turns green full intensity.
- Press the talk key and speak into the microphone.
- Release the TALK key to return to listen mode.

No.:

For å svare et oppkall fra en understasjon.

- *Trykk inn gjeldende linjeknapp. Lysdioden tenner fullt rødt lys.*
- *Trykk inn TALK knappen og snakk inn i mikrofonen.*
- *Slipp TALK knappen for å returnere til lytte-modus.*



6.7. TERMINATING THE CONVERSATION / AVSLUTTE SAMTALEN

Eng.:

The conversation is terminated by de-activating the line:

- Operate the line key once more. The line indicator led turn green half-light intensity. (backlight)

No.:

Samtalen avsluttes ved å legge linjen ut igjen:

- *Trykk linjeknappen en gang til. Lysdioden skifter til grønt baklys (hvilestilling).*

7.0. ALL CALL / ALLEKALL

Eng.:

The master station CIS 3100/3101/3102 may perform an ALL CALL to the substations.

- Operate the ALL/TALK key. (no lines active) A special attention tone (1kHz chopped) is distributed to all the substations for about 2-3 seconds. Simultaneously all the extra signal organ outputs is activated for 2-3 seconds. All the line indicator leds turns red colour. The call key indicator led illuminate red during this interval (2-3 seconds.)

When this led turns off again the system is ready to use.

- Give the message and release the ALL/TALK key.

No.:

Hovedstasjonene CIS 3100/3101/3102 kan utføre alle kall til understasjonene.

- *Trykk inn ALL/TALK knappen når hovedstasjonen er i hvilestilling (ingen linjer aktivert). En spesiell tone 1kHz pulset (viktig melding), distribueres til alle understasjonene i cirka. 2-3 sekunder. Samtidig aktiveres alle ekstra signal utganger i cirka 2-3 sekunder. Alle linje indikator lysdioder tenner rødt. Call knappens lysdiode tenner rødt i 2-3 sekunder. Når CALL knappens lysdiode slukker er systemet klart til bruk.*
- *Snakk inn i mikrofonen og slipp TALK knappen etter meldingen.*

8.0 BRIDGE WING - EXTERNAL PAGING / BROVING - EKSTERNT AKTIVERT ANROP

Eng.:

Two separate external audio and key lines are provided for remote paging. These interfaces are as default intended for bridge wing paging, port and starboard. In this mode they interface a loudspeaker/microphone/key configuration. The paging can be done in 2 ways. Either prepared in advance on the master station making the bridge wing able to communicate with the selected substations (conversation mode). Or the system can be keyed directly from idle into the all call paging mode. In both situations the master station loudspeaker will relay the activity.

The starboard bridge wing interface has an alternative mode; the emergency allcall mode. It can be redefined as an interface to other equipment (Phontech SPA 1500 system) or be activated from an emergency microphone position. In the emergency all call mode it will generate an ALL CALL situation independent of prior status (idle or busy) (Ref. chapter 9 - priority and chapter 14 or 15 - Strapping and connection point locations).

Both speech audio and alarms may be fed to this input.

No.:

- To separate eksterne audio og nøklings linjer er tilgjengelig for fjernstyring av anrop. Disse linjene er primært ment brukt til anrop fra broving, babord og styrbord. Linjene interfacer en høyttaler/mikrofon/nøklings konfigurasjon. Anropet kan gjøres på 2 måter. Enten kan et linjevalg settes opp i forkant. På denne måten kan brovingene samtale med understasjonene i begge retninger (konversasjons modus). Eller systemet kan nøkles direkte fra hvilesituasjon til allekall/fellesanrop. I begge tilfelle vil hovedstasjonens høyttaler monitorere samtale begge veier. Styrbord broving linje kan omdefineres til en nød allekall modus. Linjen kan omdefineres for tilkobling enten til annet utstyr (Phontech SPA 1500 system) eller den kan aktiveres fra en nødmikrofon. I nød allekall modus vil systemet generere et allekall/fellesanrop uansett status på forhånd (ledig/opptatt). (ref. kapittel 9 - Prioritet og kapittel 14 eller 15 - Lokalisering av linker og kontaktpunkter).*
- Både tale og alarmtoner kan tilføres denne linjen.*

9.0 PRIORITY / PRIORITET

Eng.:

**Doc.No.: 08300-007-DE**

- The master station normally has first priority.
 - If the external emergency paging is enabled this will have an intermediate first priority and override existing calls.
- After this first priority override activation the master station regains priority and can place calls of any type.

No.:

- *Hovedstasjonen har normalt første prioritet.*
- *Dersom eksternt nød allekall aktiveres vil dette likevel ha midlertidig første prioritet og overstyre eventuelle eksisterende anrop. Etter første gangs aktivering vil hovedstasjonen gjenobre første prioritet og kan gjøre anrop av alle typer.*

10.0 CALLS DURING AN EXTERNAL ALL-CALL / ANROP UNDER EKSTERNT ALLEKALL

Eng.:

Line selections during emergency all call (press any substation line key even if this is already busy (led indicator) causes all other lines to disable and a two-way conversation can be made.
Alternatively the talk key can be activated immediately causing substation audio to be replaced by the master station message.

When the talk key is released, the external emergency all call will be re-engaged.

No.:

Dersom linjer velges under et eksternt nød allekall (aktiver understasjon linjer selv om linjeindikatoren lyser rødt) vil de øvrige linjene deaktiveres slik at en to-veis samtale med valgt linje fan skje. Alternativt kan hovedapparat operatøren trykke TALK direkte og erstatte understasjon audio med egen melding. Når TALK tasten slippes gjeninnføres det eksterne nød allekall.

11.0 INTENTIONALLY LEFT OUT / UTELATT

12.0 INTENTIONALLY LEFT OUT / UTELATT

13.0 TECHNICAL DATA.

CIS 3100.

Operation voltage / driftsspennig:

24 VDC

Current drain / strømtrekk:

1 A max.

Line capacity / linjekapasitet:

5 lines.

Power amp. capacity / forsterkerkapasitet:

10 W total
Up to 10 W per line.

Frequency range / frekvens område:

Better than 400-6000 Hz (-3dB)

Distortion / forvrengning:

Better than 2.5% typ.

Extra signal organ output / ekstra signal giver utgang:

+ 24 VDC, max 150mA
Open collector output to GND

Bridge wing microphone input / Broving mikrofon nivå:

200 Ohm / 10 mV typ.

Bridge wing loudspeaker output / Broving høyttaler utgang:

8 Ohm / 5W typ.

Line level, Stb. Bridge wing Emergency paging level /

Linje nivå, Styrbord broving Nød melding nivå:

775 mV (0dBm) typ.

CIS 3101.

Operation voltage / driftsspennig:

24 VDC



Current drain / <i>strømtrekk</i> :	2 A max.
Line capacity / <i>linjekapasitet</i> :	10 lines.
Power amp. capacity / <i>forsterkerkapasitet</i> :	20 W total Up to 10 W per line.
Frequency range / <i>frekvens område</i> :	Better than 400-6000 Hz (-3dB)
Distortion / <i>forvrengning</i> :	Better than 2.5% typ.
Extra signal organ output / <i>ekstra signal giver utgang</i> :	+ 24 VDC, max 150mA Open collector output to GND
Bridge wing microphone input / <i>Broving mikrofon nivå</i> :	200 Ohm / 10 mV typ.
Bridge wing loudspeaker output / <i>Broving høyttaler utgang</i> :	8 Ohm / 5W typ.
Line level, Stb. Bridge wing Emergency paging level / <i>Linje nivå, Styrbord broving Nød melding nivå</i> :	775 mV (0dBm) typ.
CIS 3102	
Operation voltage / <i>driftsspenning</i> :	24 VDC
Current drain / <i>strømtrekk</i> :	3 A max.
Line capacity / <i>linjekapasitet</i> :	20 lines.
Power amp. capacity / <i>forsterkerkapasitet</i> :	40 W total Up to 10 W per line.
Frequency range / <i>frekvens område</i> :	Better than 400-6000 Hz (-3dB)
Distortion / <i>forvrengning</i> :	Better than 2.5% typ.
Extra signal organ output / <i>ekstra signal giver utgang</i> :	+ 24 VDC, max 150mA Open collector output to GND
Bridge wing microphone input / <i>Broving mikrofon nivå</i> :	200 Ohm / 10 mV typ.
Bridge wing loudspeaker output / <i>Broving høyttaler utgang</i> :	8 Ohm / 5W typ.
Line level, Stb. Bridge wing Emergency paging level / <i>Linje nivå, Styrbord broving Nød melding nivå</i> :	775 mV (0dBm) typ.



Doc.No.: 08300-007-DE

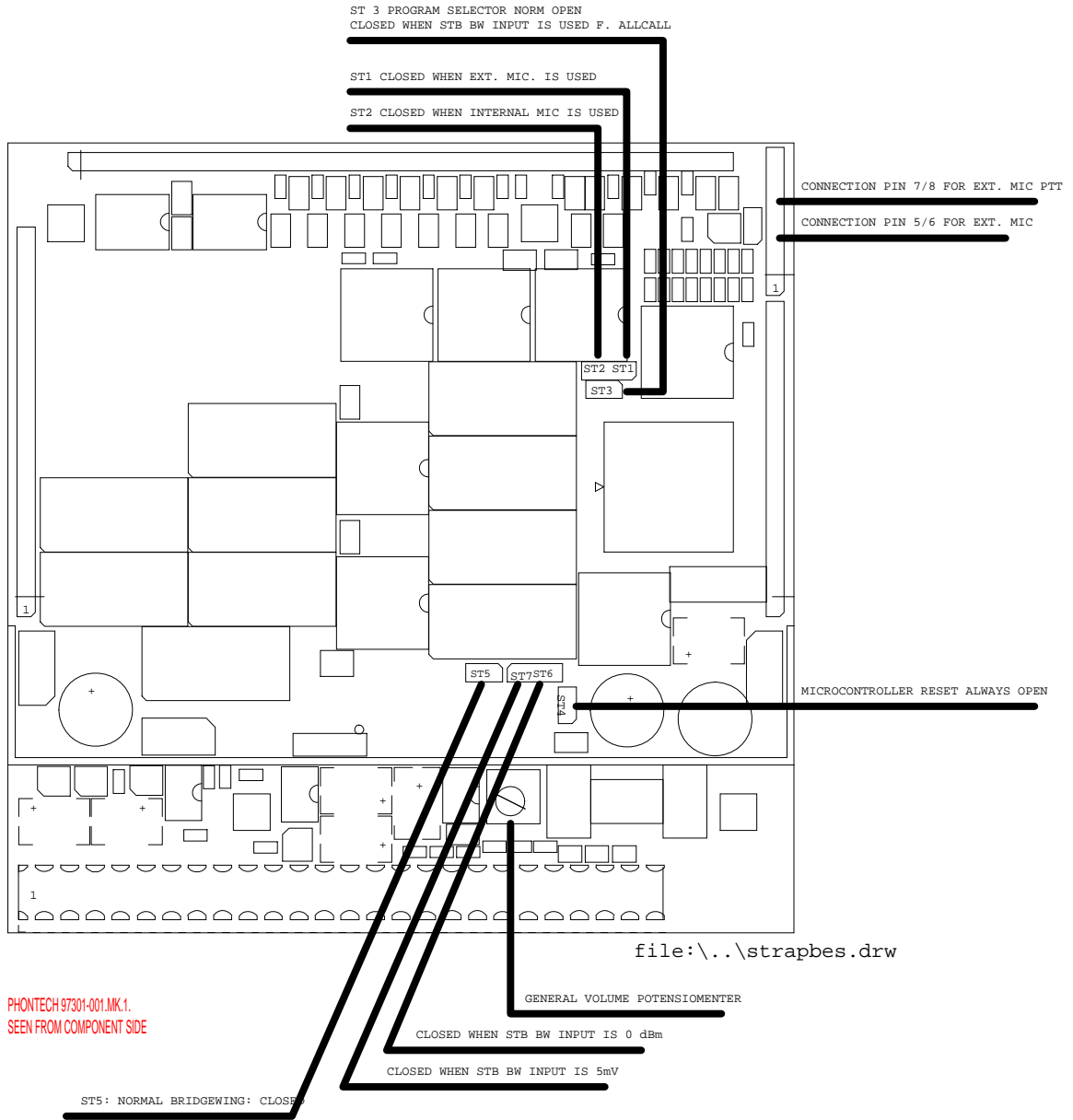
14.0 SYSTEM BOARD 97301-001 (CIS 3100/3101) STRAPPING AND CONNECTION POINT LOCATIONS / LOKALISERING AV LINKER OG KONTAKTPUNKTER.

J2 Terminal / pin No. - J2 Terminal / pin. nr.	Function / Equipment	Funksjon / tilkoblet utstyr
1 & 2	Volume potentiometer	Volum potensiometer
3 & 4	Unit loudspeaker	Apparat høyttaler
5 & 6	Microphone	Mikrofon element
7 & 8	TALK activator	Tale knapp

Strap	Condition Tilstand	Description / Functionality Beskrivelse / Funksjon	Standard
ST2 ST1 ● ●---●	ST1 closed ST2 open <i>ST1 lukket ST2 åpen</i>	Using an additional microphone, the integrated microphone is not used <i>Benytter tilleggsmikrofon, integrert mikrofon benyttes ikke</i>	
ST2 ST1 ●---● ●	ST1 open ST2 closed <i>ST1 åpen ST2 lukket</i>	Using the integrated microphone, an additional unit microphone is not mounted <i>Benytter integrert mikrofon, tilleggsmikrofon på enheten er ikke montert</i>	✓
ST3 ● ●	ST3 open <i>ST3 åpen</i>	Starboard bridge wing interface is used as bridge wing interface - NORMAL <i>Styrbord broving interface benyttes som broving - NORMAL</i>	✓
ST3 ●---●	ST3 closed <i>ST3 lukket</i>	Starboard bridge wing interface is used as input for external PRIORITY ALL CALL <i>Styrbord broving interface benyttes som inngang for eksternt PRIORITERT ALLE KALL</i>	
ST4 ● ●	ST4 open <i>ST4 åpen</i>	Microcontroller RESET: Always open during normal working conditions <i>Mikrokontroller RESET: Skal alltid være åpen i normal drift</i>	✓
ST4 ●---●	ST4 closed <i>ST4 lukket</i>	Only to be used by service personnel: Always open during normal working conditions <i>Benyttes kun av service personell: Skal alltid være åpen i normal drift</i>	
ST5 ● ●	ST5 open <i>ST5 åpen</i>	Disable loudspeaker audio to the starboard bridge wing interface. This facility is used in line feed conditions. i.e PA-system, PABX etc. <i>Frakoble høyttaler audio til styrbord broving interface. Benyttes ved tilkobling til eksternt nøklingsutstyr f.eks. PA-system, PABX etc.</i>	
ST5 ●---●	ST5 closed <i>ST5 lukket</i>	Enable loudspeaker audio to the starboard bridge wing. This facility is used in NORMAL bridge wing operation <i>Tilkoble høyttaler audio til styrbord broving. Benyttes ved NORMAL broving funksjon</i>	✓
ST7 ST6 ● ●---●	ST6 closed- ST7 open <i>ST6 lukket- ST7 åpen</i>	The starboard bridge wing is connected to a line level (0dBm) interface, i.e. PA system, PABX etc. <i>Styrbord broving er tilkoblet linje nivå (0dBm) interface. F.eks. PA system, PABX etc.</i>	
ST7 ST6 ●---● ●	ST6 open- ST7 closed <i>ST6 åpen- ST7 lukket</i>	The starboard bridge wing is connected to a microphone level interface, i.e. bridge wing microphone, microphone for PRIORITY ALL CALL <i>Styrbord broving er tilkoblet mikrofon nivå interface, f.eks. broving mikrofon, mikrofon for PRIORITERT ALLE KALL</i>	✓



FIGURE 3 / FIGUR 3





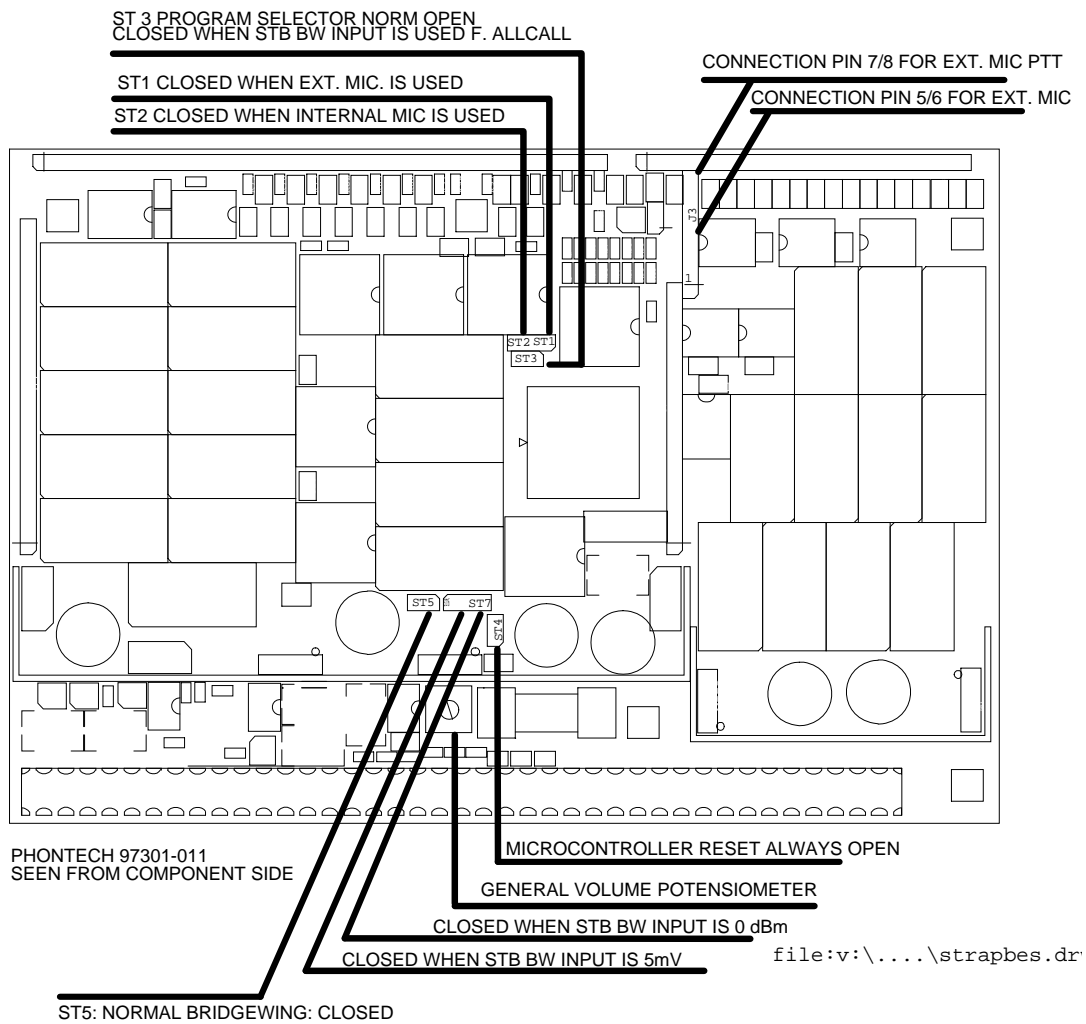
15.0 SYSTEM BOARD 97301-011 (CIS 3102)
STRAPPING AND CONNECTION POINTS LOCATION /
LOKALISERING AV LINKER OG KONTAKTPUNKTER.

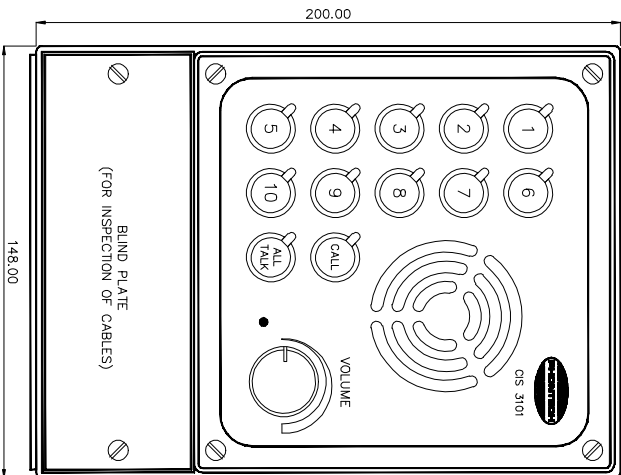
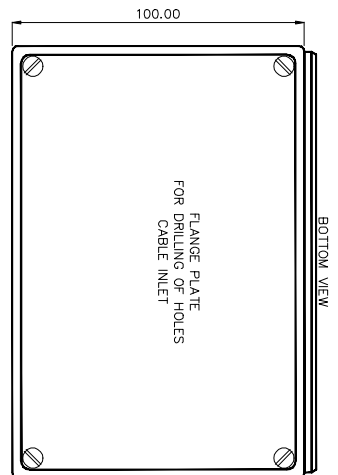
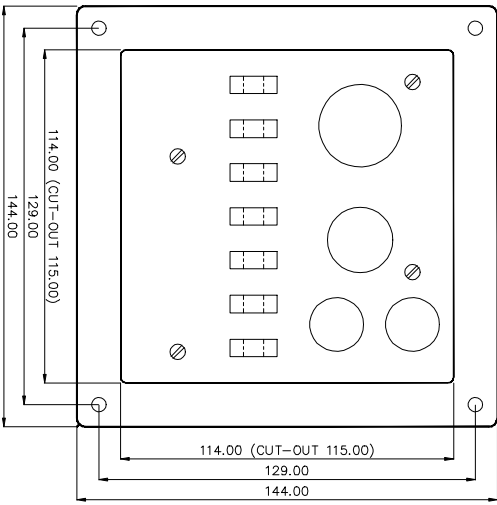
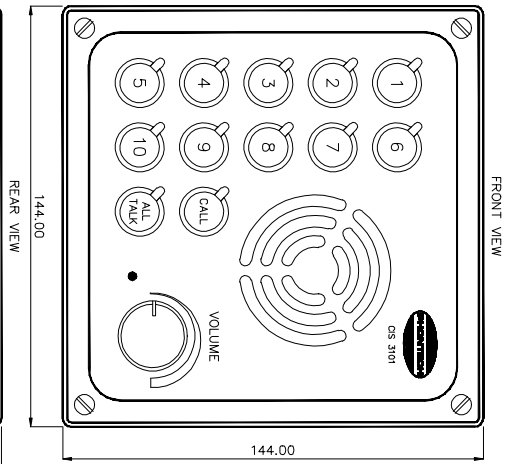
J3 Terminal / pin No. - J3 Terminal / pin. nr.	Function / Equipment	Funksjon / tilkoblet utstyr
1 & 2	Volume potensiometer	Volum potensiometer
3 & 4	Unit loudspeaker	Apparat høyttaler
5 & 6	Microphone	Mikrofon element
7 & 8	TALK activator	Tale knapp

Ref. strap descriptions under chapter 14.0

Ref. link beskrivelser under kapittel 14.0

FIGURE 4 / FIGUR 4





- NOTES:
- MATERIAL: ALUMINIUM 57S.
 - COLOUR: BLACK (RAL 9005).
 - IP GRADE: IP-20.
 - WEIGHT: APP. 2,50Kg.
 - POWER: 24VDC.
 - DEPTH: 100,00mm. EX. FRONT.

- NOTES:
- MATERIAL: ALUMINIUM 57S.
 - COLOUR: BLACK (RAL 9005).
 - IP GRADE: IP-20.
 - WEIGHT: APP. 3,00Kg.
 - POWER: 24VDC.

REV. No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	03.09.2008	FINAL DOCUMENTATION			

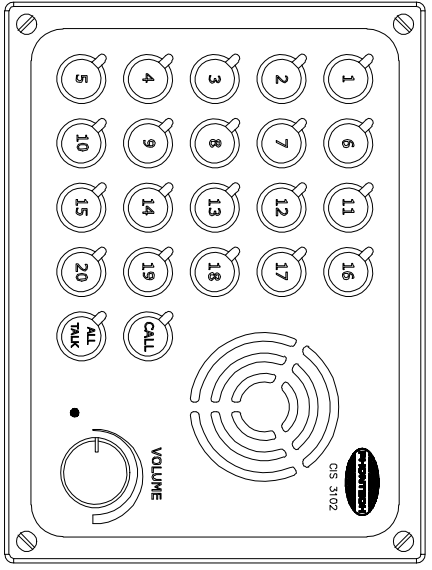
TITLE: 3101 MASTER STATION 10-L.
VERSION 05827
MECHANICAL LAYOUT.

SIZE:	A2	UID No:	
DOC. No:	08300-002-ML	TITLE NAME:	08300-002-ML.DWG

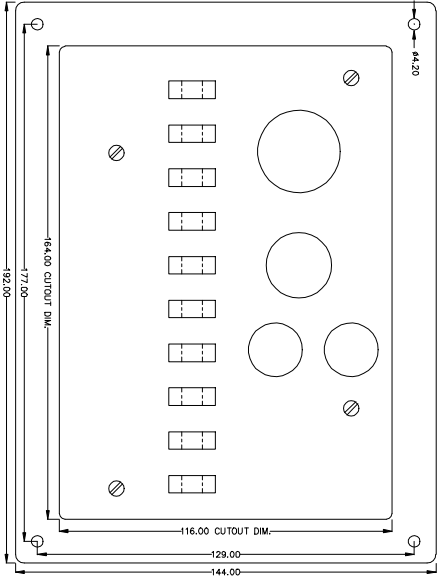


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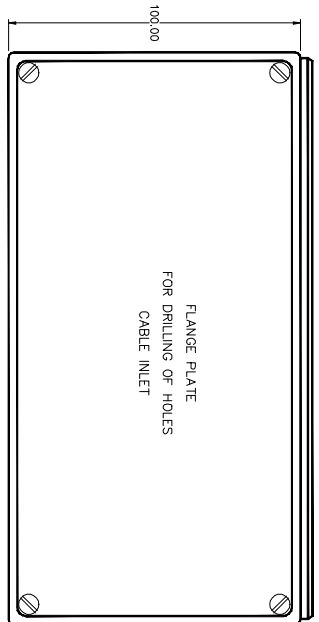
FOR CONSOLE MOUNTING
FRONT VIEW



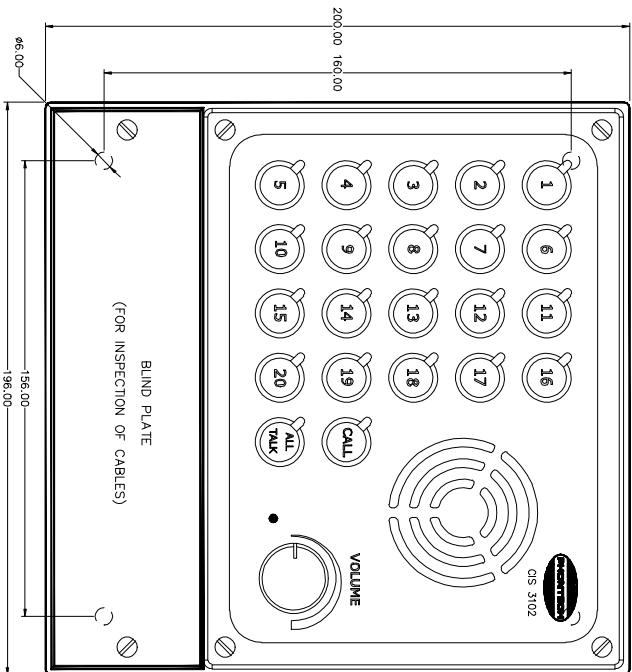
REAR VIEW



FOR WALL MOUNTING
BOTTOM VIEW



FRONT VIEW



EQUIPMENT DATA:	
MANUFACTURER	: PHONTECH AS.
MODEL/TYPE	: INTERCOM SYSTEM.
RACK/BOX SUPPL.	: PHONTECH AS.
RACK/BOX TYPE	: NA.
MATERIAL	: ALUMINIUM 57S.
COLOR	: RAL 9005.
WEIGHT OF UNIT	: APP. 3,00Kg.
MOUNTING	: TO CONSOLE/WALL.

FIXING DETAILS	
ACCESS	: 4PCS. M4 BOLT.
CABLE ENTRY	: REAR/FRONT.
GLAND TYPE	: NA./YARD SUPPLY.
PROTECTION IP	: IP-20.
POWER SUPPLY	: 24VDC.
POWER CONSUMP.	: NA.
HEAT DISSIPATION	: NA.

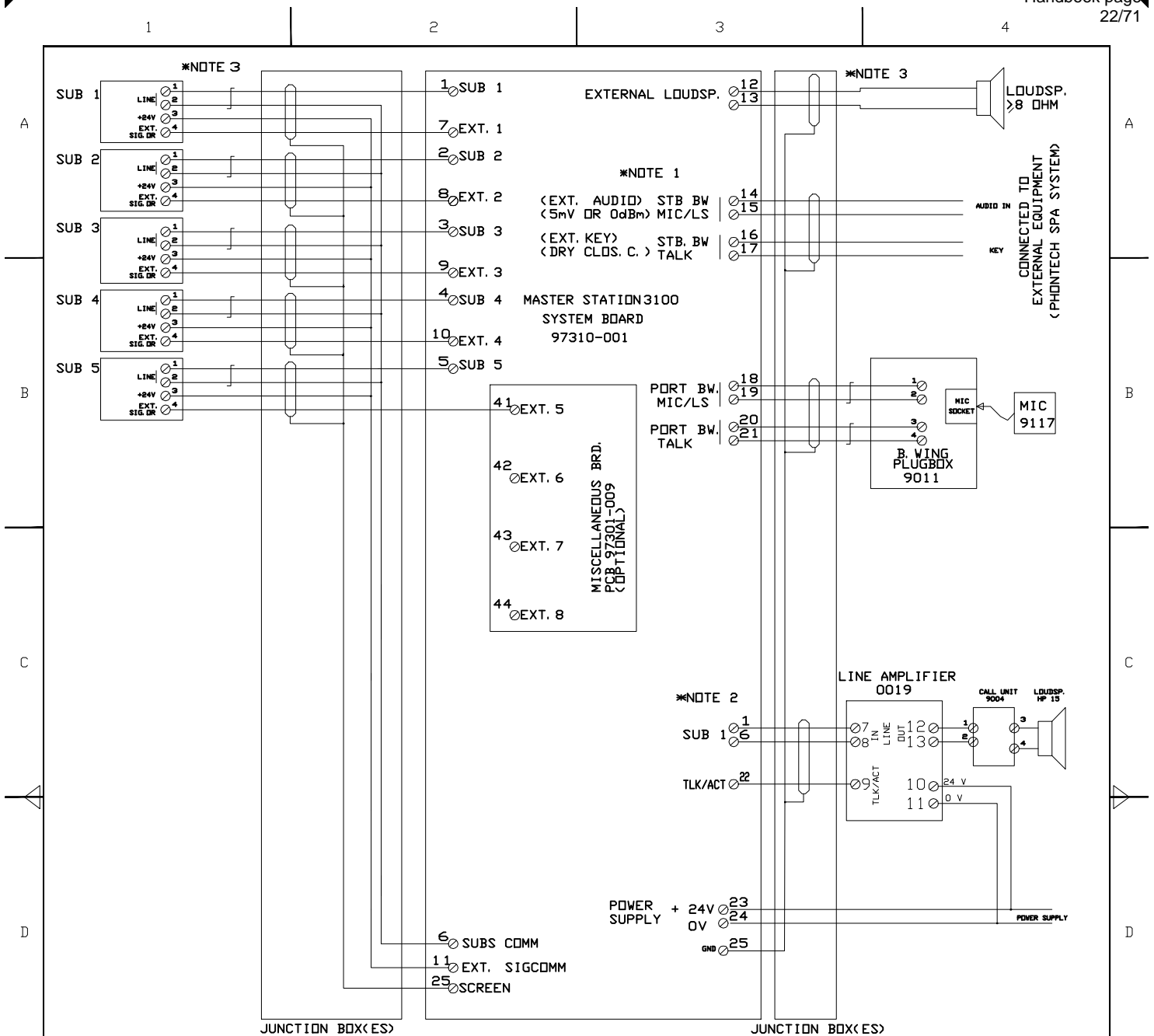
REV. No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	03.09.2008	FINAL DOCUMENTATION	CD		ASR

TITLE: 3102 MASTER STATION 20-L.
VERSION 05827
MECHANICAL LAYOUT.

SIZE	A2	UID No.	
DOC. No.	08300-003-ML		
TITLE NAME	08300-003-ML.DWG		




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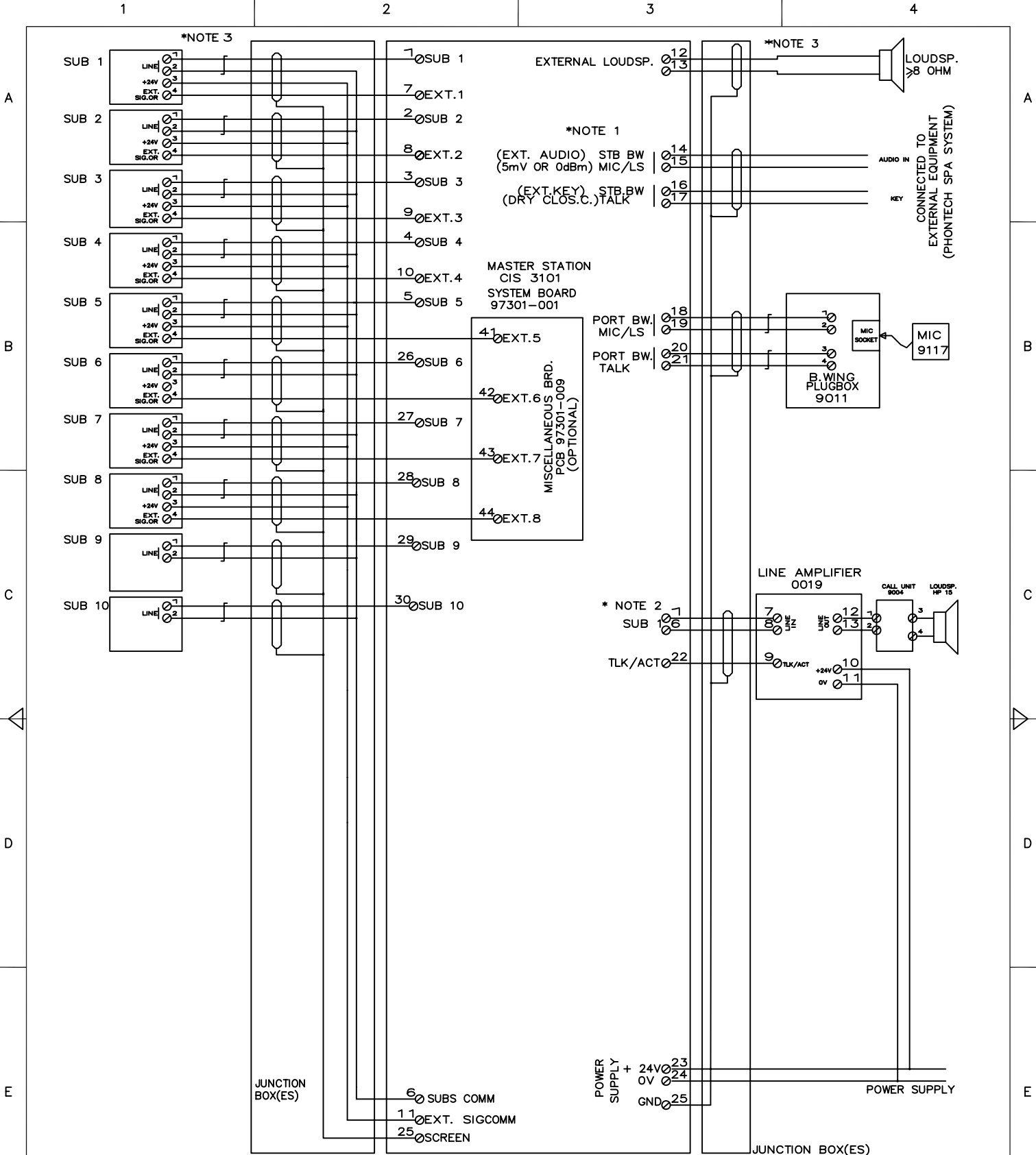
NOTE 1: SAME AS PORT SIDE BW DR: (ST 3 ON THE PCB 97301-001 IS REMOVED) ALTERNATIV CONNECTION ON THE STB. BW TERMINALS CONNECTED TO PHONTECH SPA SYSTEM FOR EXTERNAL AUDIO INTERFACE. (ST3 ON THE PCB 97301-001 IS INSTALLED) IF 0 dBm AUDIO INSTALL ST 6 ON THE PCB 97301-001/011. IF MIC LEVEL (5mV) INSTALL ST 7 ON THE PCB 97301-001/011. REFERENCE TO DRAWING 97301-001-CD AND 97301-011-CD.

NOTE 2: DISPLAYS THE CONNECTION OF LINE AMPLIFIER 0019 (25W) TO LINE 1. THIS IS USED IN NOISY AREAS WHERE EXTRA SOUND LEVEL IS REQUIRED. CALL AND TALK BACK IS POSSIBLE IN THIS CONFIGURATION. THE 0019 MAY BE CONNECTED TO ANY LINE.

NOTE 3: THE CABLING BETWEEN THE SUBSTATIONS / FIELD EQUIPMENT, AND THE MASTER STATIONS SHOULD BE A SEPARATE NETWORK. I. E. DO NOT COMBINE WITH OTHER SIGNALS. THIS TO ENSURE UN-INTERFERED OPERATION.

						 <p>This document is the property of PHONTECH and must not be copied or shown to a third person without our written acceptance. In the interest of product improvement, PHONTECH reserves the right to alter specification and design without notice.</p>
2	20050401	REVISION EM 1020	ASK	TBA	ASK	
1	990204	REVISION 724	t. ly			
0	970515	FINAL DOCUMENTATION	t. ly			
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED	
TITLE: CIS SYSTEM MASTER STATION CIS 3100 INSTALLATION DRAWING.						SIZE: A3 DOC. No: 97301-007-EC FILE NAME: 97301-007-EC. DWG

UED No: 94



NOTE 1:
SAME AS PORT SIDE BW OR: (ST3 ON THE PCB 97301-001 IS MOUNTED) ALTERNATIVE CONNECTION ON THE STB. BW. TERMINALS CONNECTED TO PHONTECH SPA SYSTEM FOR EXTERNAL AUDIO INTERFACE. (ST3 ON THE PCB 97301-001 IS REMOVED).

NOTE 2:
DISPLAYS THE CONNECTION OF LINE AMPLIFIER 0019 (25W) TO LINE 1. THIS IS USED IN NOISY AREAS WHERE EXTRA SOUND LEVEL IS REQUIRED. CALL AND TALK BACK IS POSSIBLE IN THIS CONFIGURATION. THE 0019 MAY BE CONNECTED TO ANY LINE.

NOTE 3:
THE CABLING BETWEEN THE SUBSTATIONS/FIELD EQUIPMENT AND THE MASTER STATIONS SHOULD BE A SEPARATE NETWORK. I.E. DO NOT COMBINE WITH OTHER SIGNALS. THIS TO ENSURE UNINTERFERED OPERATION.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
2	20050401	REVISION, EM 1020	ASk	TBA	ASk
1	99.02.04	CHANGE ORDER No. 724.	TLy	ASk	TLy
0	97.04.01	AS BUILT.	TLy	ASk	TLy

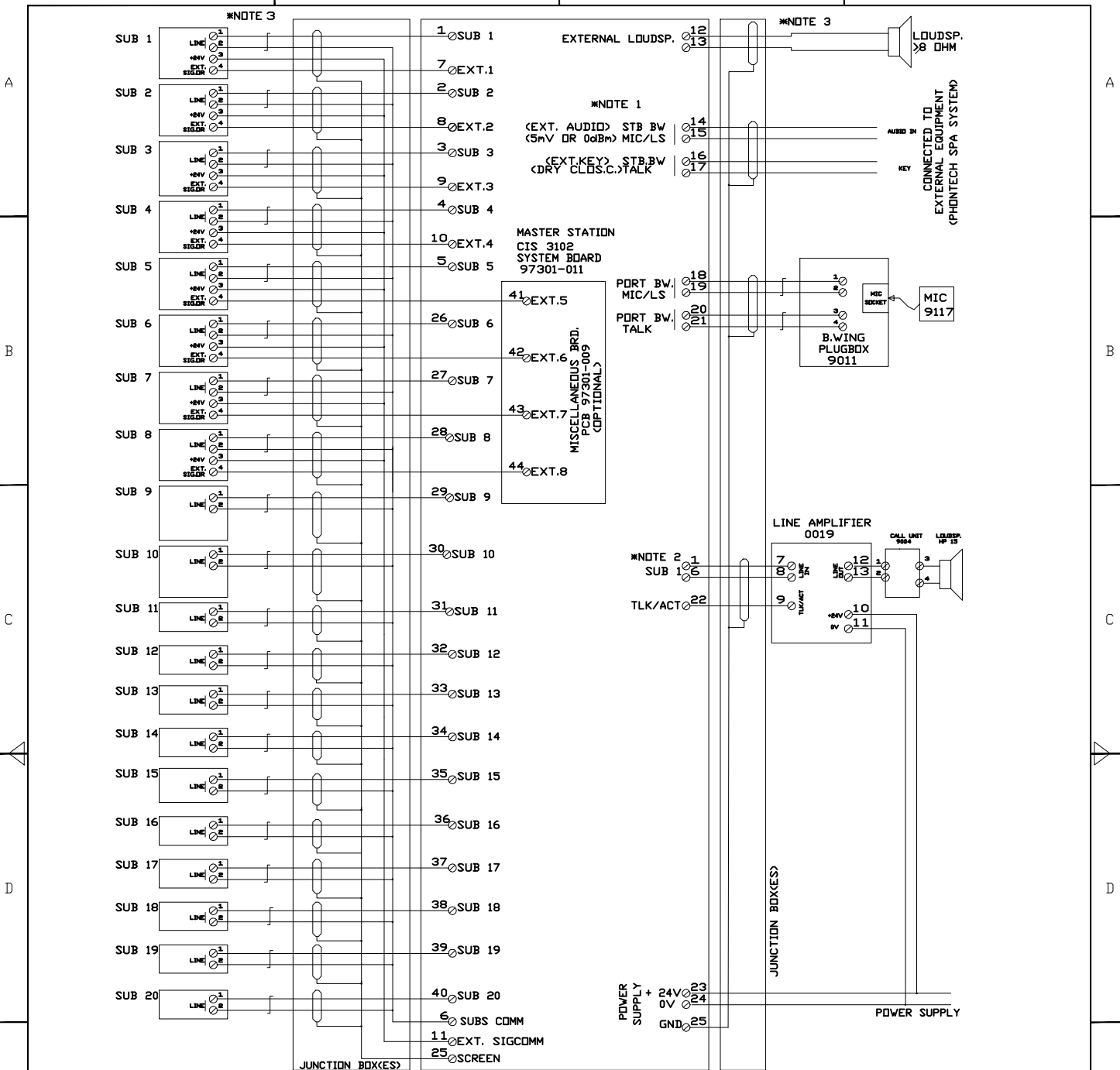


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TITLE: CIS SYSTEM.
MASTER STATION 3101.
INSTALLATION DRAWING.

SIZE:	A3	UED No:	94
DOC. No:	97301-002-EC		
FILE NAME:	97301-002-EC.DWG		

1 2 3 4



NOTE 1: SAME AS FOR THE PORT SIDE BW DR: (ST 3 ON THE PCB 97301-001 IS MOUNTED)
 ALTERNATIVE CONNECTION ON THE STB.BW. TERMINALS CONNECTED TO PHONTECH SPA SYSTEM FOR EXTERNAL AUDIO INTERFACE.
 (ST3 ON THE PCB 97301-001 IS REMOVED)

NOTE 2: DISPLAYS THE CONNECTION OF LINE AMPLIFIER TYPE 0019 (25W) TO LINE 1.
 THIS IS USED IN NOISY AREAS WHERE EXTRA SOUND LEVEL IS REQUIRED.
 THE 0019 MAY BE CONNECTED TO ANY LINE.

NOTE 3: TWISTED PAIRS THE CABLING BETWEEN THE SUBSTATIONS / FIELD EQUIPMENT AND THE MASTER STATION
 SHOULD BE A SEPARATE NETWORK.
 I.E. DO NOT COMBINE WITH OTHER SIGNALS. THIS TO ENSURE UNINTERFERED OPERATION.

NOTES:

CABLE REQUIREMENTS:
 TWISTED PAIR WITH OUTER SCREEN.

RECOMMENDED CONDUCTOR AREA ALL CABLE
 TYPES: 0,75 sqmm.

DO NOT COMBINE SIGNAL CABLES WITH OTHER
 CABLE TYPES SUCH AS MAIN SUPPLY.

THE CABLING FOR THIS SYSTEM SHOULD BE A
 SEPARATE NETWORK.

3	20050401	REVISION, EM 1020	ASK	TBA	ASK
2	001020	CHANGE ORDER 804	t.ly		
1	990304	CHANGE ORDER 724	t.ly		
0	970401	FINAL DOCUMENTATION	t.ly		
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED



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TITLE: CIS SYSTEM
 MASTER STATION CIS 3102
 INSTALLATION DRAWING

SIZE: A3 UED No: 94
 DOC. No: 97301-013-EC
 FILE NAME: 97301-013-EC.DWG

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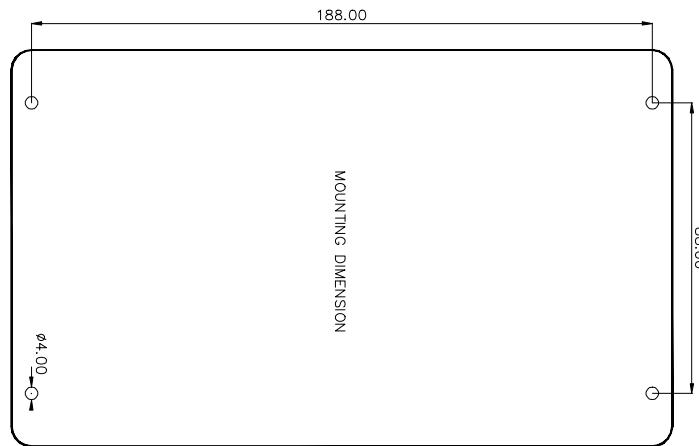
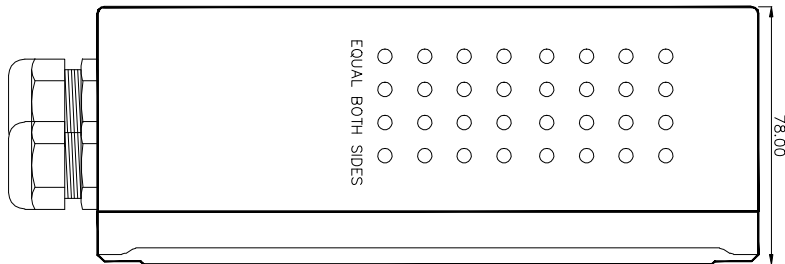
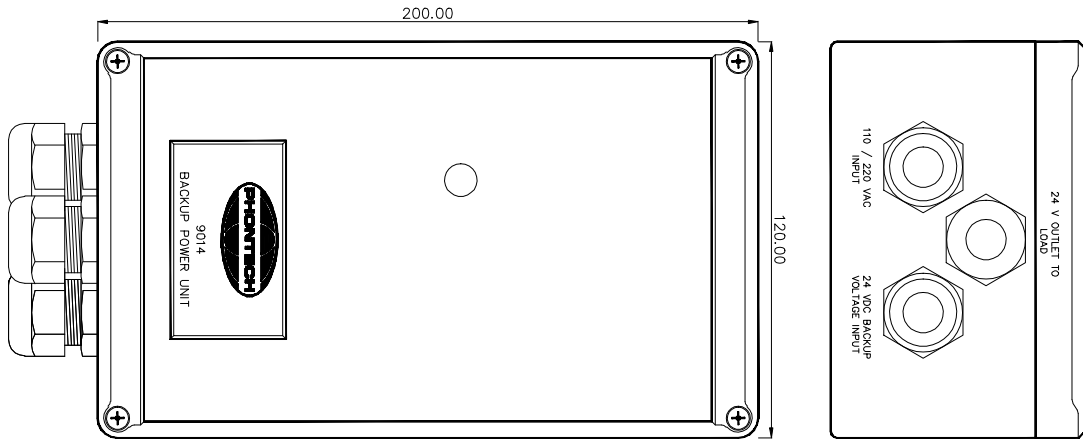
B

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EQUIPMENT DATA:

MANUFACTURER	: PHONTECH AS.	FIXING DETAILS	: 4pcs. M4 BOLT.
MODEL/TYPE	: BACKUP POWER 9014.	ACCESS	: FRONT.
RACK/BOX SUPPL.	: BOPLA.	CABLE ENTRY	: BOTTOM.
RACK/BOX TYPE	: EUROMAS II, ET-221.	GLANG TYPE	: 3pcs. PG-13,5.
MATERIAL	: ABS.	PROTECTION IP	: IP-20.
COLOUR	: RAL 7035, GREY.	POWER SUPPLY	: 110/220VAC.
WEIGHT OF UNIT	: APP. 1,00Kg.	POWER CONSUMP.	: 70 mA /(IDLE).
MOUNTING	: TO WALL.	HEAT DISSIPATION	: NA.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
2	2000.10.03	CHANGE ORDER No. 794.	R.F.	Tly	Tly
1	99.03.16	CHANGE ORDER No. 731.	R.F.	Tly	Tly
0	99.02.25	AS BUILT.	R.F.	Tly	Tly



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TITLE: GENERAL PURPOSE BACKUP POWER UNIT.
9014.
MECHANICAL LAYOUT.

SIZE: A3 UED No: 27/172
DOC. No: 99900-001-ML
FILE NAME: 99900-001-ML.DWG

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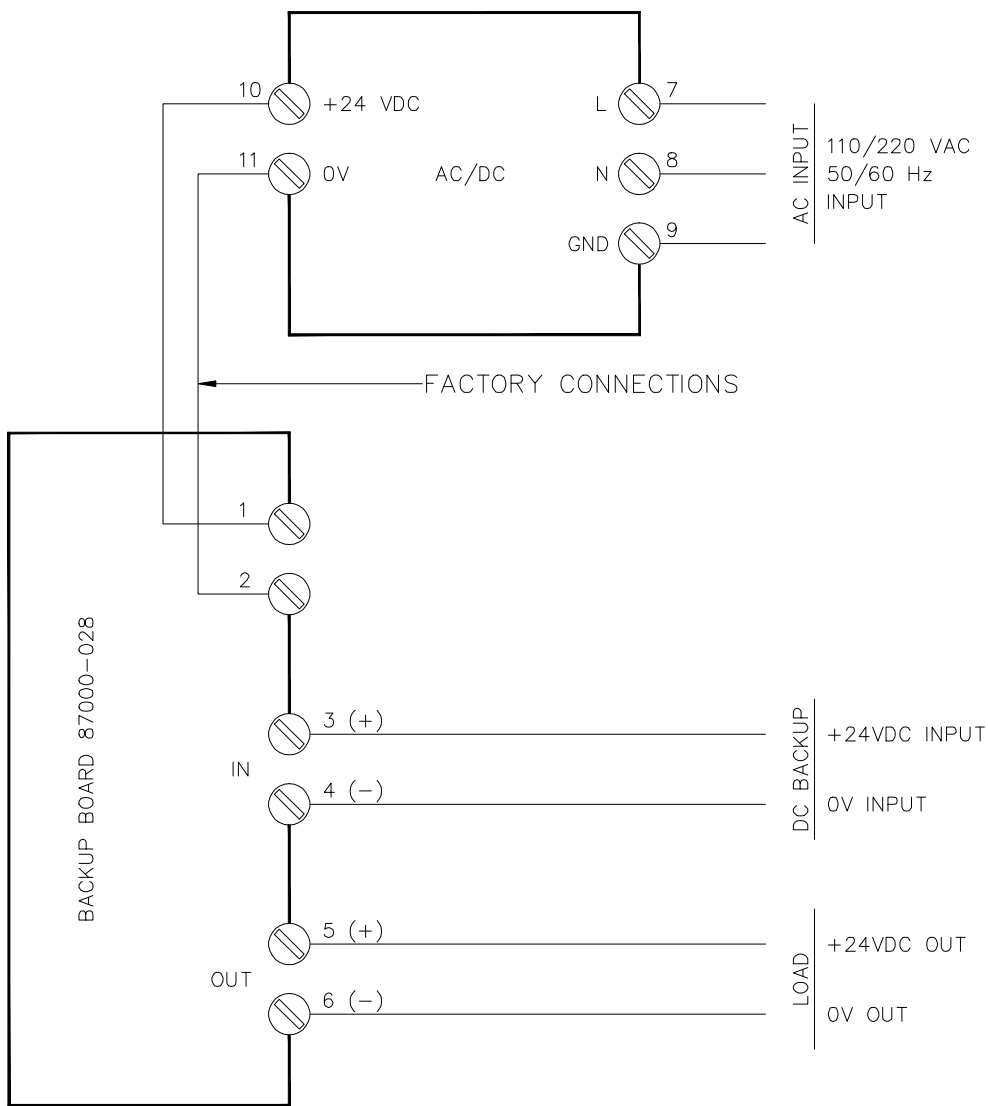
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0	99.02.25	AS BUILT.	TLy	TBA	TLy
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED



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TITLE: GENERAL PURPOSE BACKUP POWER SUPPLY.
9014.
INTERNAL WIRING.

SIZE: A3 UED No: 27/172
DOC. No: 99900-001-IW
FILE NAME: 99900-001-IW.DWG

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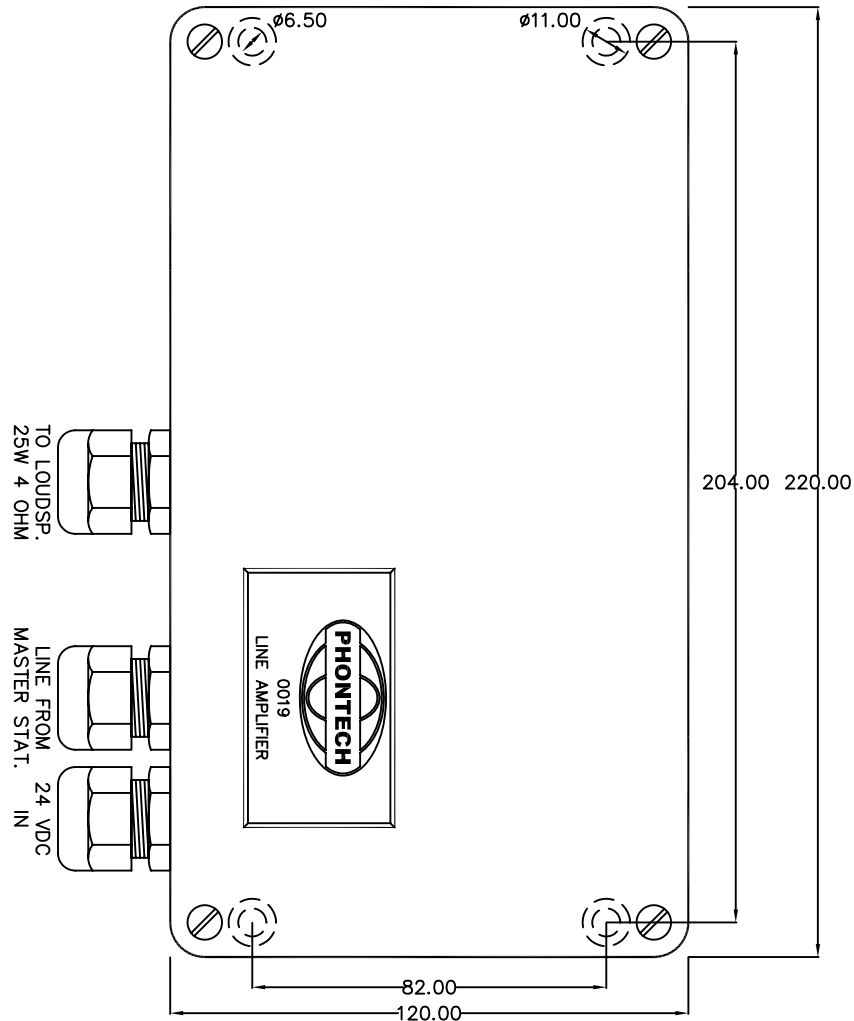
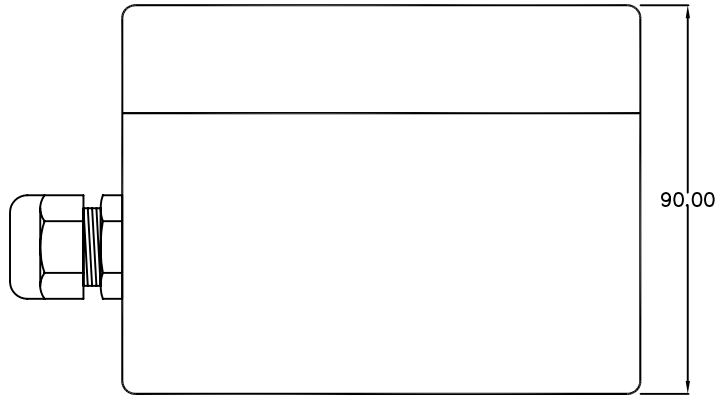
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EQUIPMENT DATA:

MANUFACTURER : PHONTECH AS.	FIXING DETAILS : 4pcs. M5 BOLT.
MODEL/TYPE : LINE AMPLIFIER.	ACCESS : FRONT.
RACK/BOX SUPPL. : POK 5 127760.	CABLE ENTRY : BOTTOM.
RACK/BOX TYPE : POLY BOX.	GLAND TYPE : PG-11.
MATERIAL : GRP.	PROTECTION IP : IP-65.
COLOUR : RAL 7001.	POWER SUPPLY : 24VDC.
WEIGHT OF UNIT : 1,65Kg.	POWER CONSUMP. : NA.
MOUNTING : TO WALL.	HEAT DISSIPATION : NA.

REV no:	ISSUE DATE	REASON FOR ISSUE	MA.BY	CH. BY	APP.BY
1	2000.09.25	CHANGE ORDER No. 789	R.F.	Ask	TLy
0	98.02.26	AS BUILT.	H.H.	ASK	H.H.

TITLE: LINE AMPLIFIER 0019.
MECHANICAL LAYOUT.

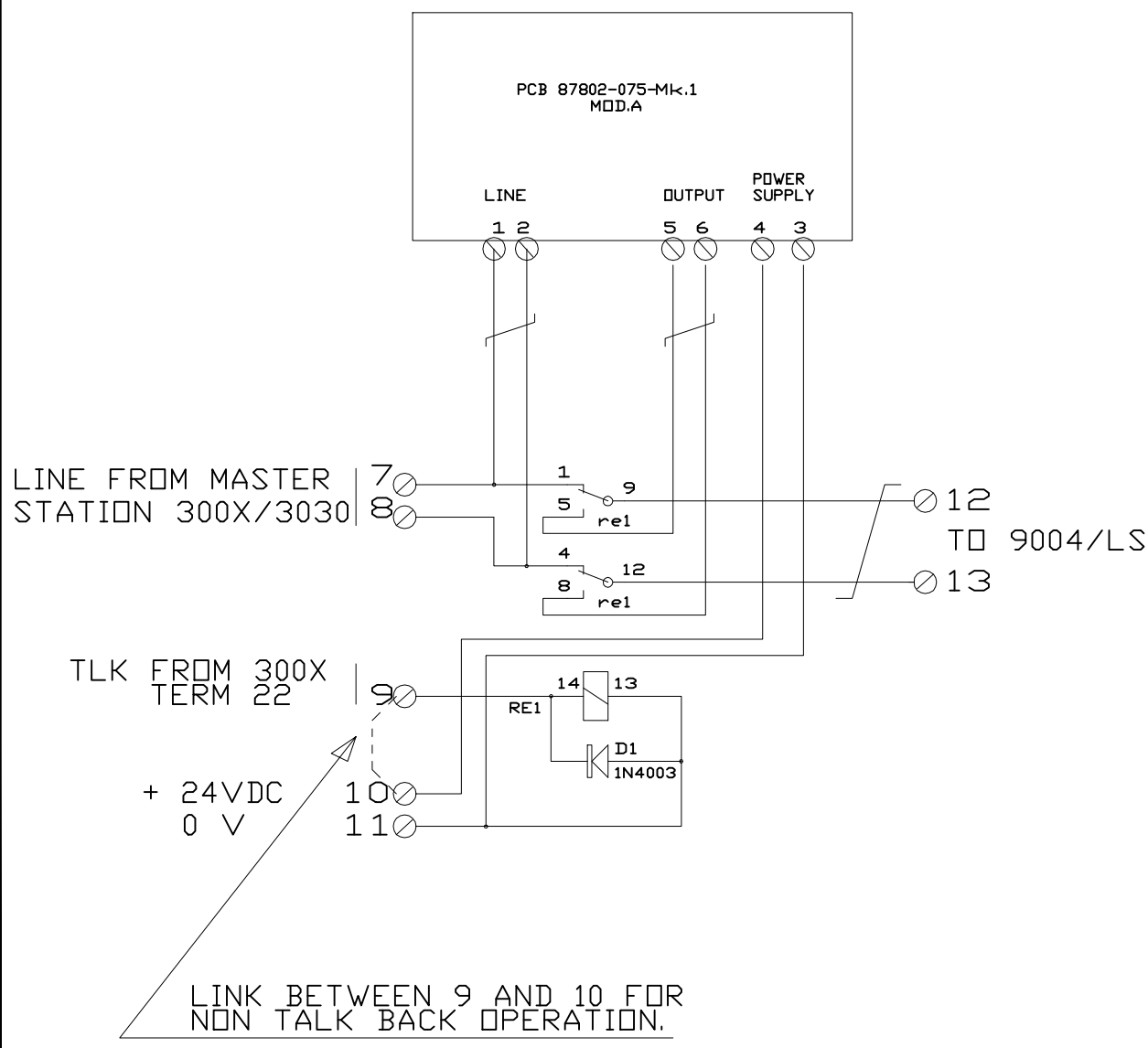
Ref. no:	No. of DWG: 1 of 1	TRACE BY: R.F.	SCALE: 1 : 1
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SIZE: A3 UED no:
DOC. No: 88000-004-ML
FILE: 88000-004-ML.DWG

1 2 3 4



REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
3	000925	REVISION CHANGE 799	t.ly		
2	990204	REVISION CHANGE 724	t.ly		
1	951109	REVISION CHANGE 577	t.ly		
0	951109	FINAL DOCUMENTATION	t.ly		



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TITLE:
LINE AMPLIFIER
0019

SIZE: A4 UED No: N/A
DOC. No: 88000-004-IW
FILE NAME: 88000-004-IW.DWG

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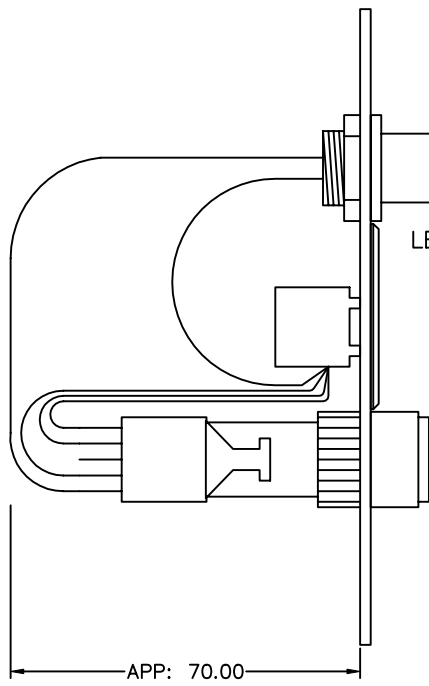
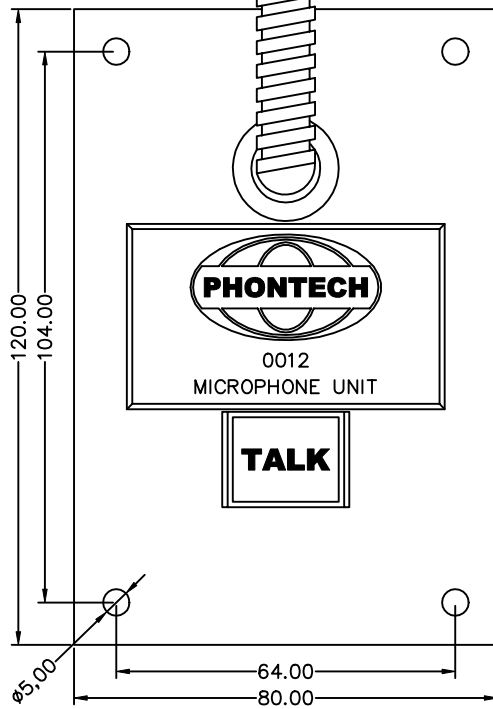
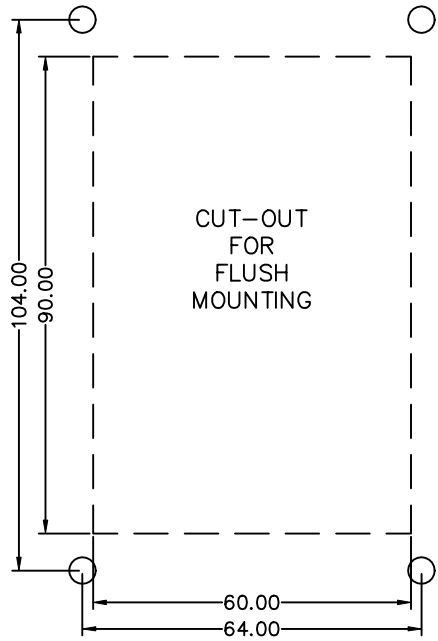
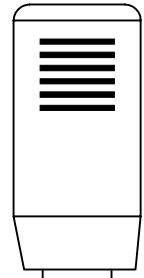
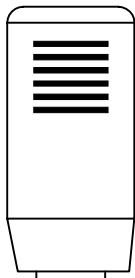
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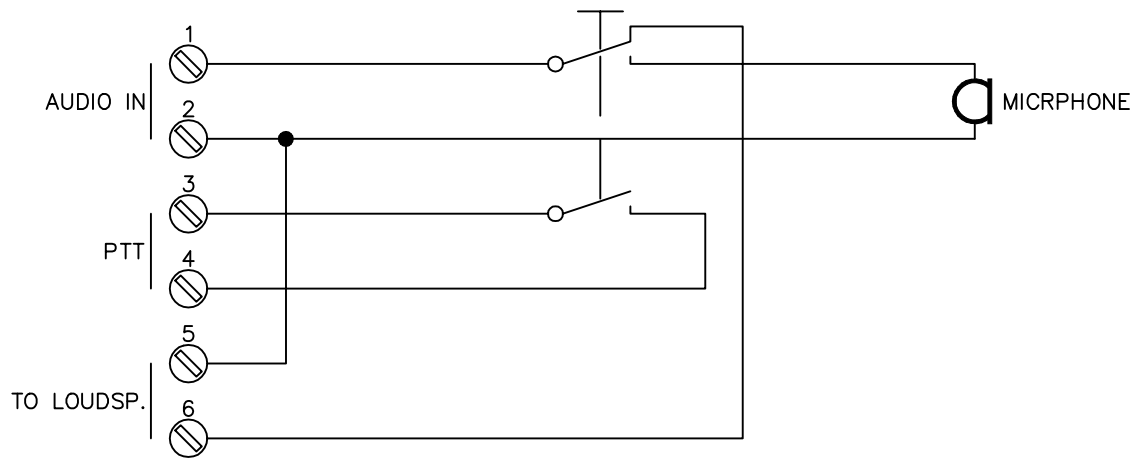
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	92.05.13	AS BUILT.	R.F.	A.I.	JHB



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TITLE: BRIDGE WING MIC UNIT, 0012.
WITH GOOSENECK.
MECHANICAL LAYOUT.

SIZE: A3 UED No:
DOC. No: 87000-035-MD
FILE NAME: 0012-ML.DWG



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0	87.12.23	AS BUILT.	R.F.	JHB	JHB
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED



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TITLE: BRIDGE WING MIC UNIT, 0012.
WITH GOOSENECK.
INTERNAL WIRING.

SIZE: A4 UED No:
DOC. No: 87000-035-IW
FILE NAME: 0012-IW.DWG

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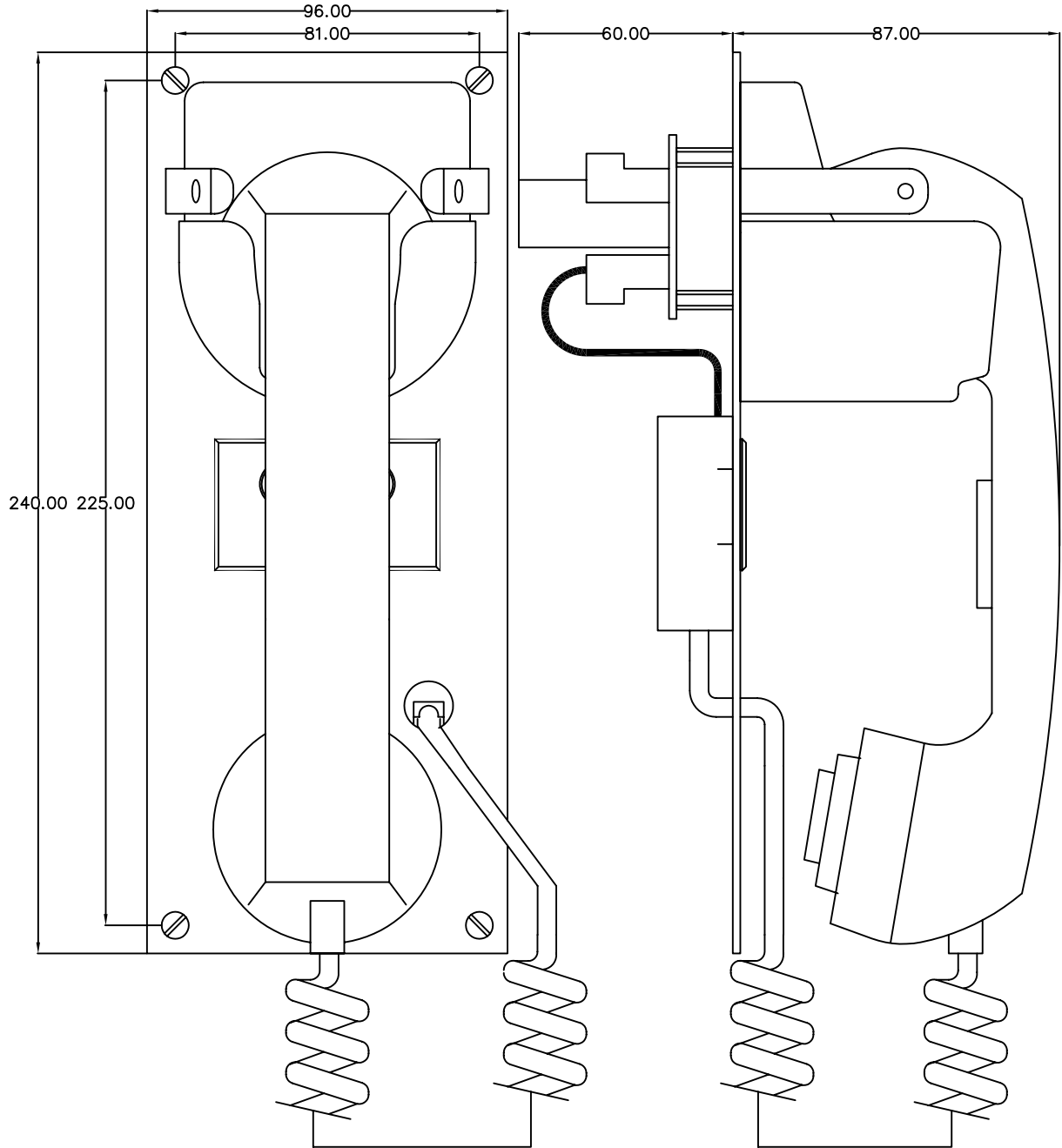
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NOTES:

- REQUIRED OPENING FOR FLUSH-MOUNTING: 66 x 210mm.
15,00mm IN FROM EACH SIDE.
- COLOUR: FRONT: BLACK. TELEPHONE: BLACK.
- WEIGHT: APP. 1,50Kg.
- FIXING DETAILS: 4pcs. M4 SCREW.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	2000.10.03	REVISION EM-796.	R.F.	E.D.	Tly
0	97.06.26	AS BUILT.	R.F.	P.A.	Tly



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TITLE: IN-BRIDGE WING UNIT.
9018.
MECHANICAL LAYOUT.

SIZE: A3 UED No: 27/161
DOC. No: 97900-000-ML
FILE NAME: 97900-000-ML.DWG

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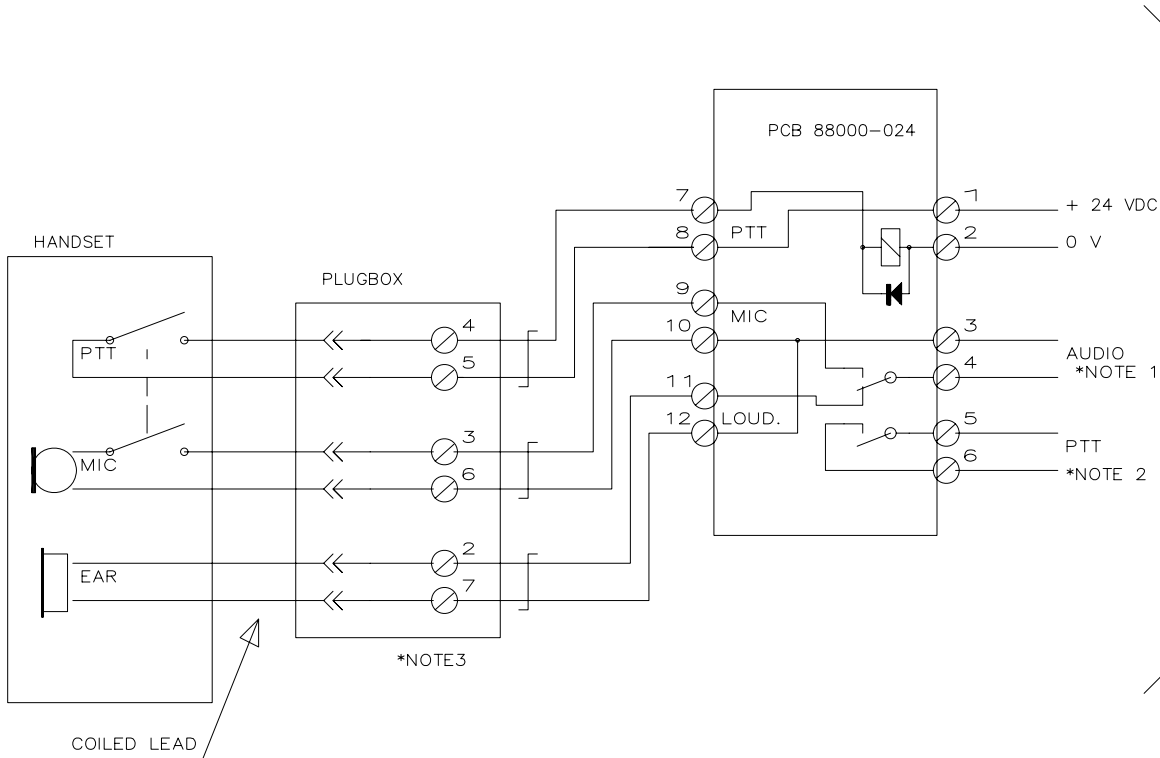
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CONNECTED TO PHONTECH COMMAND
SYSTEM 3000 AND 3100 SERIES

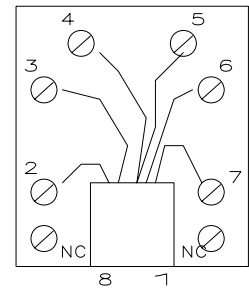
NOTE 1
AUDIO LINE TERMINALS
ON DIFFERENT MASTER UNITS

3000: 10,11
3001: 18,19
3002: 26,27
3100: STARBOARD: 14,15
3100: PORT: 18,19
3101: STARBOARD: 14,15
3101: PORT: 18,19
3102: STARBOARD: 14,15
3102: PORT: 18,19

NOTE 2
PTT LINE TERMINALS
ON DIFFERENT MASTER UNITS

3000: 12,13
3001: 16,17
3002: 28,29
3100: STARBOARD: 16,17
3100: PORT: 20,21
3101: STARBOARD: 16,17
3101: PORT: 20,21
3102: STARBOARD: 16,17
3102: PORT: 20,21

NOTE 3
PLUGBOX LAYOUT
TOP VIEW



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0	97.06.26	AS BUILT.	TLy	ASk	ASK
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED



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F

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TITLE: IN-BRIDGE WING UNIT.
9018.
INTERNAL WIRING.

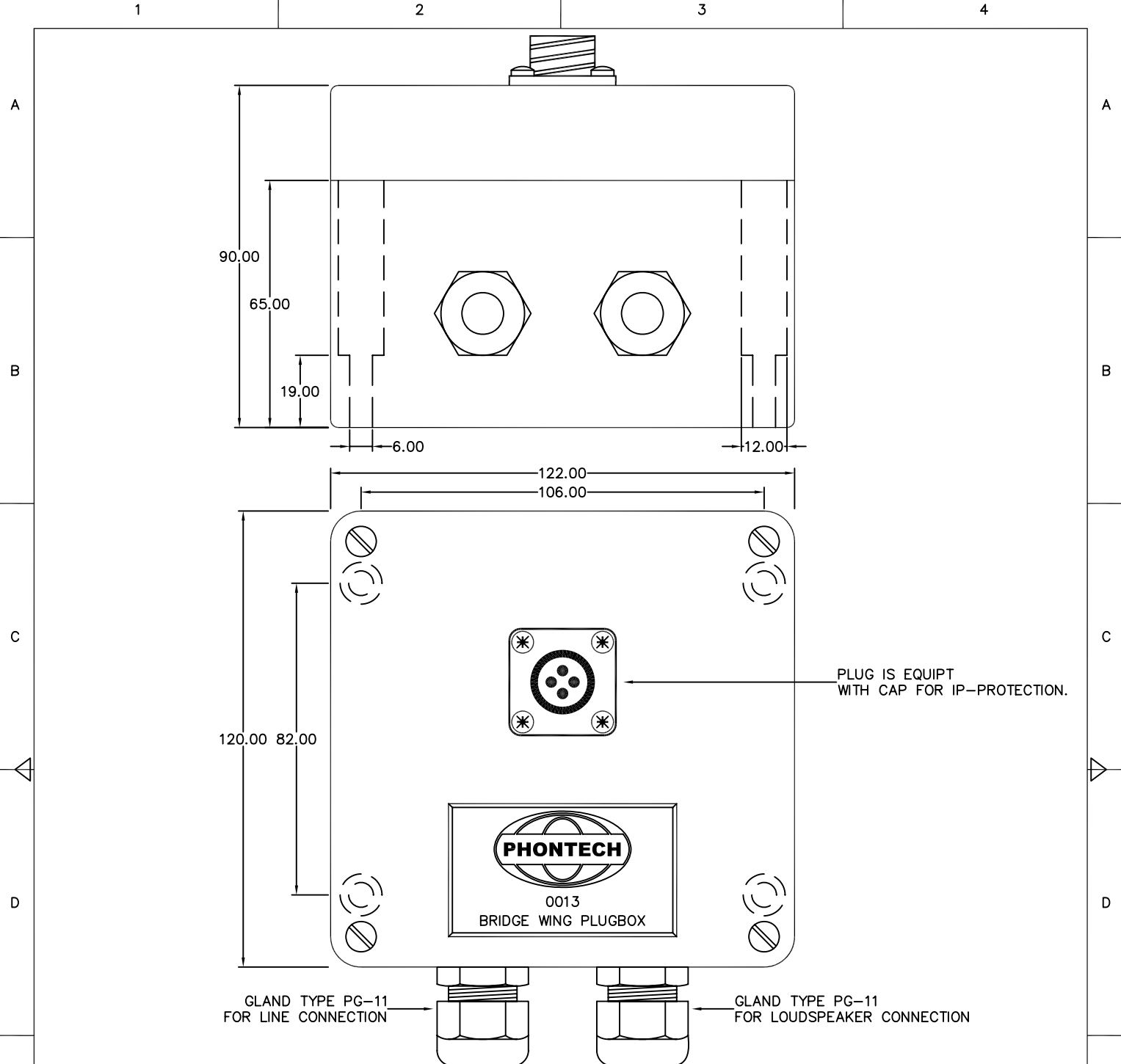
SIZE:	A4	UED No:	27/161
DOC. No:	97900-000-IW		
FILE NAME:	97900-000-IW.DWG		

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GLAND TYPE PG-11
FOR LINE CONNECTION

GLAND TYPE PG-11
FOR LOUDSPEAKER CONNECTION

EQUIPMENT DATA:

MANUFACTURER : PHONTECH AS.	FIXING DETAILS : 4pcs. M4 BOLT.
MODEL/TYPE : PLUGBOX, 0013.	ACCESS : FRONT.
RACK/BOX SUPPL. : ROSE.	CABLE ENTRY : BOTTOM.
RACK/BOX TYPE : 12.12.09.	GLAND TYPE : 2pcs. SKINTOP.
MATERIAL : GRP.	PROTECTION IP : IP-65.
COLOUR : RAL 7001.	POWER SUPPLY : NA.
WEIGHT OF UNIT : APP. 3,00Kg.	POWER CONSUMP. : NA.
MOUNTING : TO WALL.	HEAT DISSIPATION : NA.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	2000.10.02	CHANGE ORDER No.795	R.F.	TLy	P.A.
0	88.02.16	AS BUILT.	R.F.	TLy	JHB



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TITLE: BRIDGE WING PLUGBOX FOR MIC./L.S.
TYPE 0013.
MECHANICAL LAYOUT.

SIZE: A3 UED No:
DOC. No: 87000-036-ML
FILE NAME: 87000-036-ML.DWG

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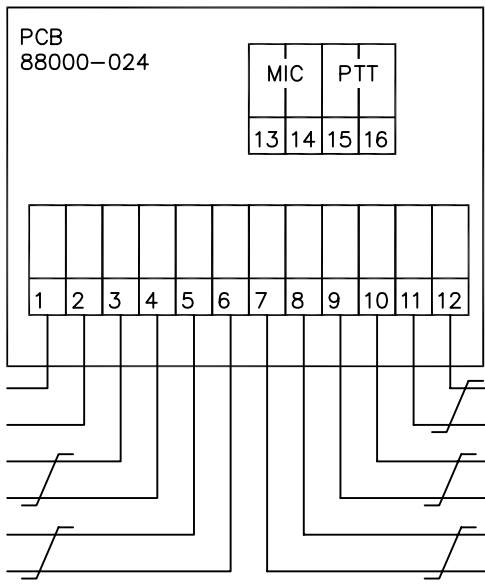
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0	16.02.1988	AS BUILT.	R.F.	TLy	ASK
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED



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TITLE: BRIDGE WING UNIT, 0013.
EXTERNAL CONNECTION.

SIZE:	A4	UED No:	
DOC. No:	87000-036-EC		
FILE NAME:	87000-036-EC.DWG		

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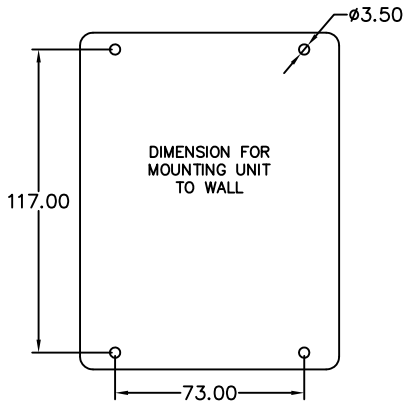
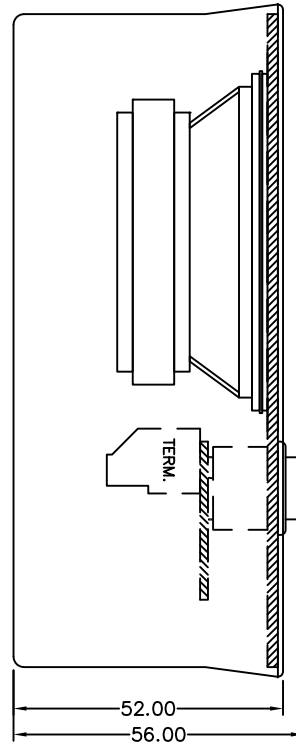
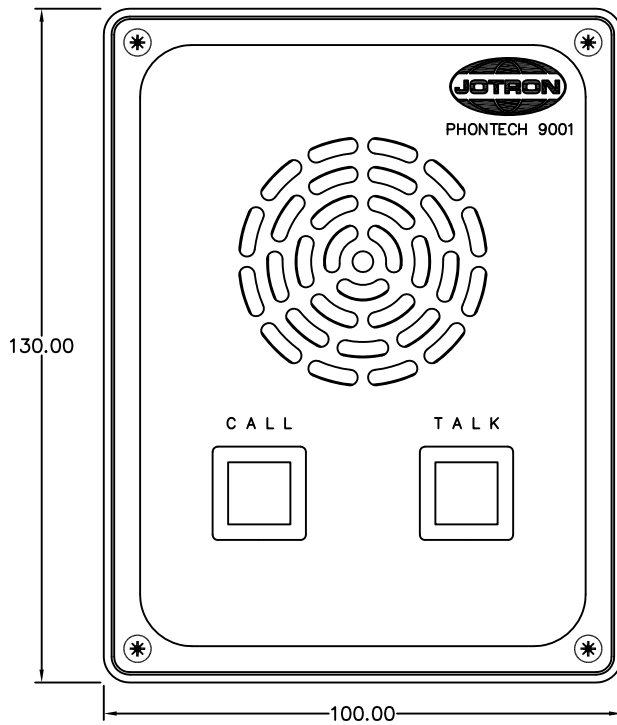
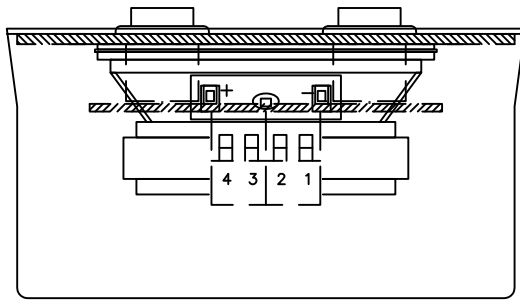
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EQUIPMENT DATA:

MANUFACTURER	: JOTRON PHONTECH AS.	FIXING DETAILS	: SEE INSIDE BOX.
MODEL/TYPE	: SUBSTATION.	ACCESS	: FRONT.
RACK/BOX SUPPL.	: JOTRON PHONTECH AS.	CABLE ENTRY	: BOTTOM/REAR.
RACK/BOX TYPE	: NA.	GLAND TYPE	: YARD SUPPLY.
MATERIAL	: PC/ABS BLEND, ABS.	PROTECTION IP	: IP-31
COLOUR	: RAL 9005/9006.	POWER SUPPLY	: NA.
WEIGHT OF UNIT	: 0,3Kg.	POWER CONSUMP.	: NA.
MOUNTING	: TO WALL.	HEAT DISSIPATION	: NA.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.22	DVM COMPLETION	ASK	ASK	
B	2010.05.07	DVM REVISION	ASK	ASK	
A	2010.04.19	DEVELOPMENT	CD	CD	



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TITLE: 9001, ABS – CABIN SUBSTATION
MECHANICAL LAYOUT.

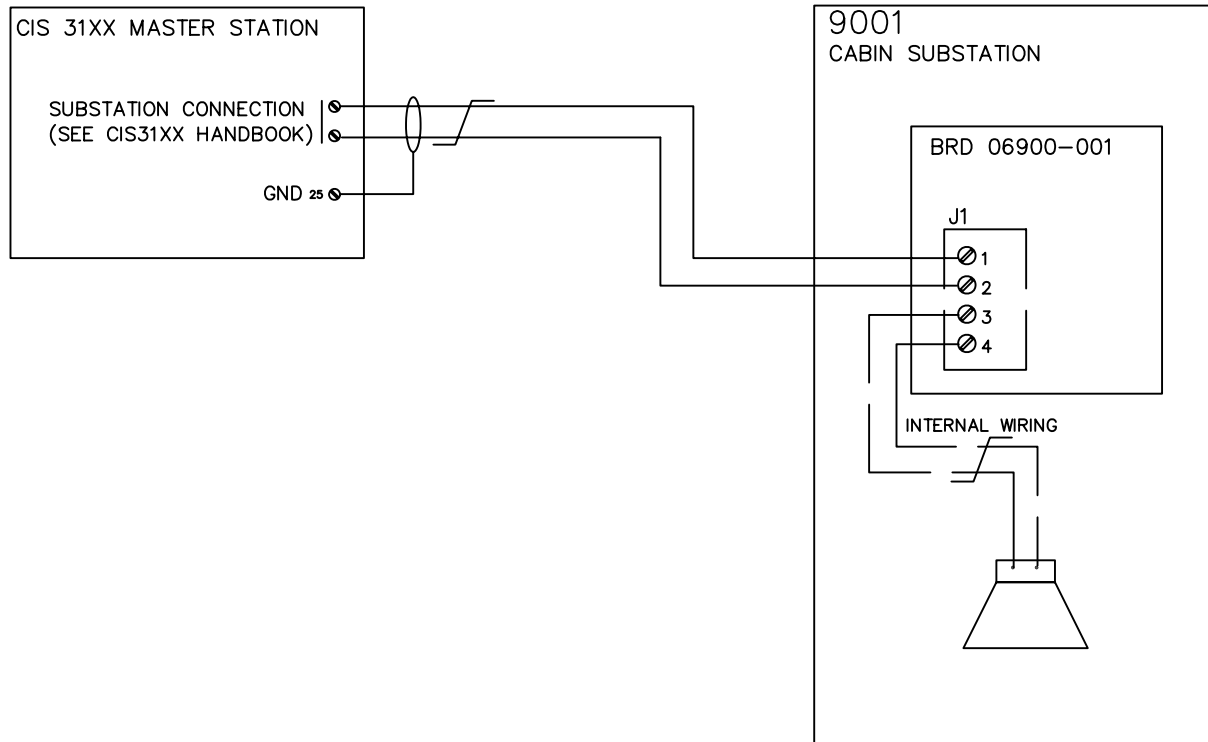
SIZE:	A3	PAGE:	
DRAWING No:	09908-001-ML		
FILE NAME:	09908-001-ML.DWG		

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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.23	DVM COMPLETION	ASK		ASK
A	2010.04.23	DEVELOPMENT.	ASK		ASK



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TITLE: 9001, ABS – CABIN SUBSTATION
EXTERNAL CONNECTION

SIZE: A4 UED No:
DOC. No: 09908-001-EC
FILE NAME: 09908-001-EC.DWG

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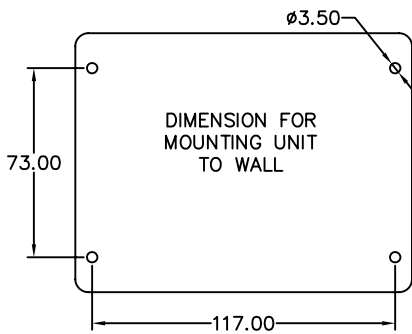
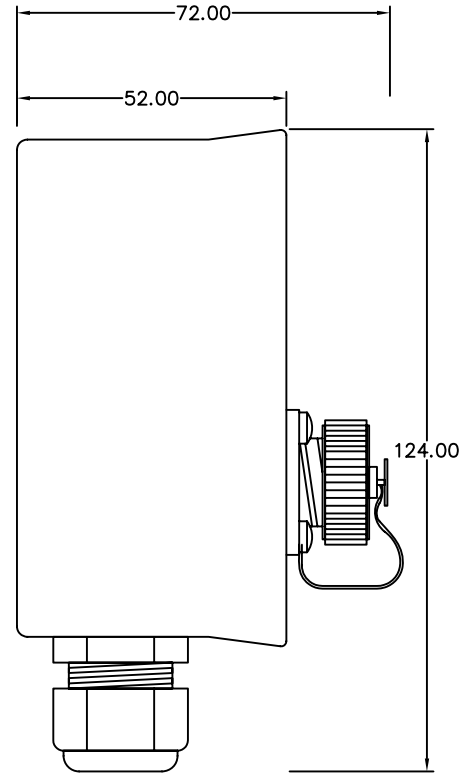
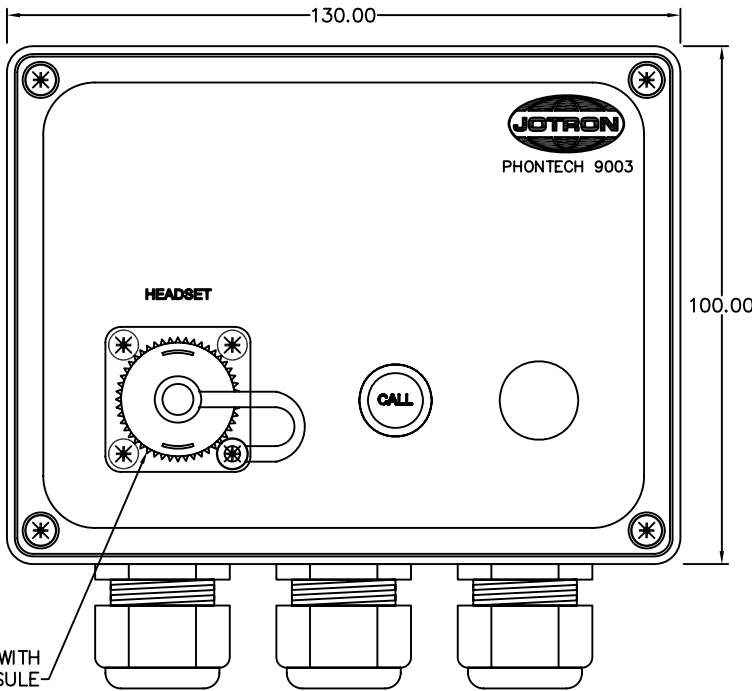
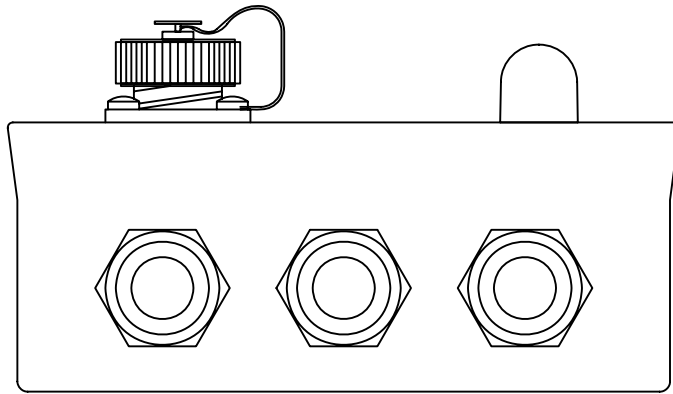
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EQUIPMENT DATA:

MANUFACTURER : JOTRON PHONTECH AS
 MODEL/TYPE : CALL/PLUGBOX.
 RACK/BOX SUPPL. : JOTRON PHONTECH AS.
 RACK/BOX TYPE : NA.
 MATERIAL : PC/ABS BLEND, ABS.
 COLOUR : RAL 9005/9006.
 WEIGHT OF UNIT : 0,3Kg.
 MOUNTING : TO WALL.

FIXING DETAILS : SEE INSIDE BOX.
 ACCESS : FRONT.
 CABLE ENTRY : BOTTOM.
 GLAND TYPE : 3pcs. M20.
 PROTECTION IP : IP-56
 POWER SUPPLY : FROM CENTRAL.
 POWER CONSUMP. : NA.
 HEAT DISSIPATION : NA.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.29	DVM COMPLETION	ASK		ASK
A	2010.06.21	DEVELOPMENT	CD		CD



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TITLE: 9003, ABS - SUBSTATION FOR HEADSET
 MECHANICAL LAYOUT

SIZE: A3	PAGE:
DRAWING No: 09908-011-ML	
FILE NAME: 09908-011-ML.DWG	

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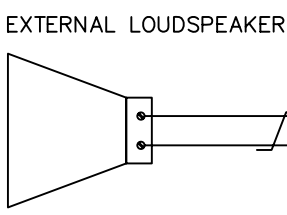
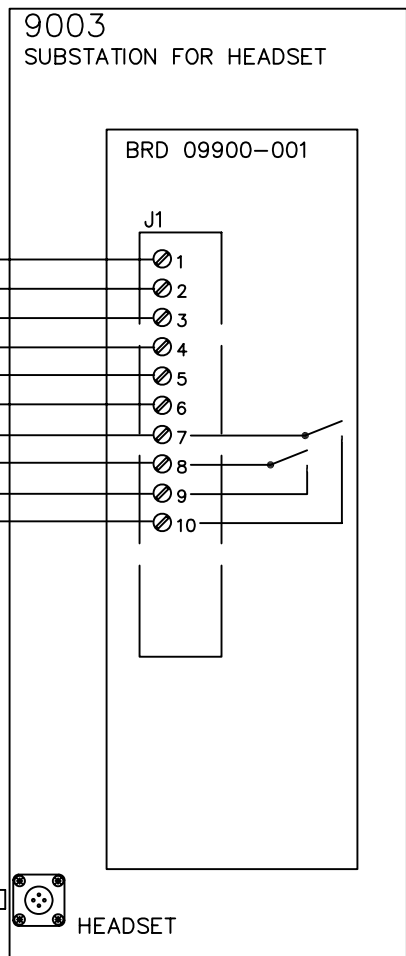
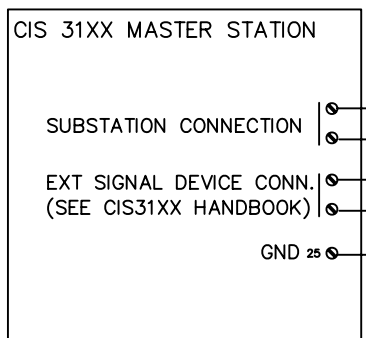
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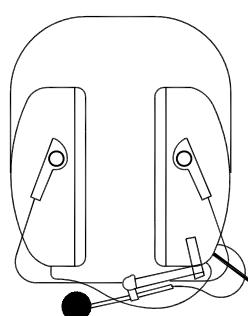
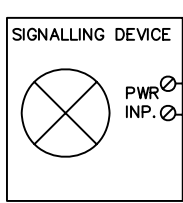
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RATED POWER FOR THE
SIGNALLING DEVICE:
90-240 VAC / 5-48VDC
8 A



REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.29	DVM COMPLETION	ASK		ASK
A	2010.06.21	DEVELOPMENT.	ASK		ASK



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TITLE: 9003, ABS - SUBSTATION FOR HEADSET
EXTERNAL CONNECTION

SIZE: A4 UED No:
DOC. No: 09908-011-EC
FILE NAME: 09908-011-EC.DWG

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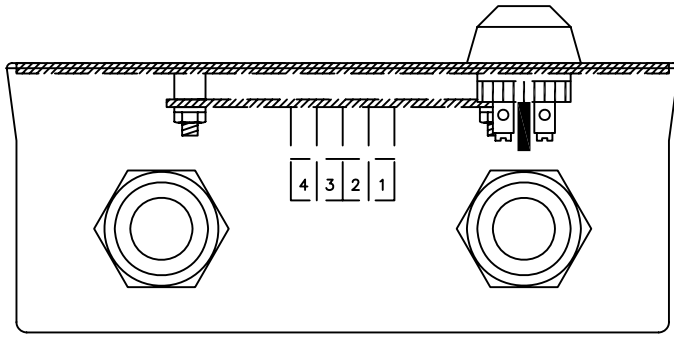
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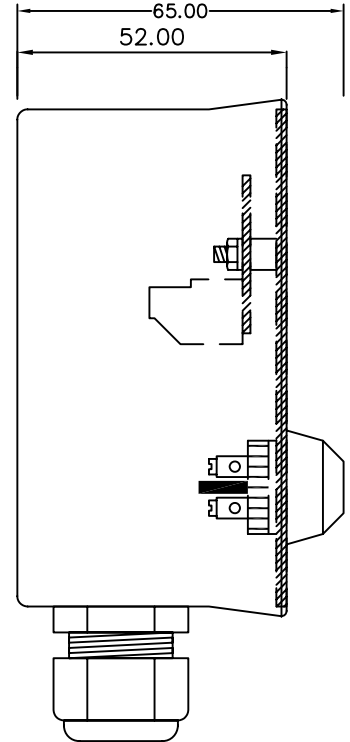
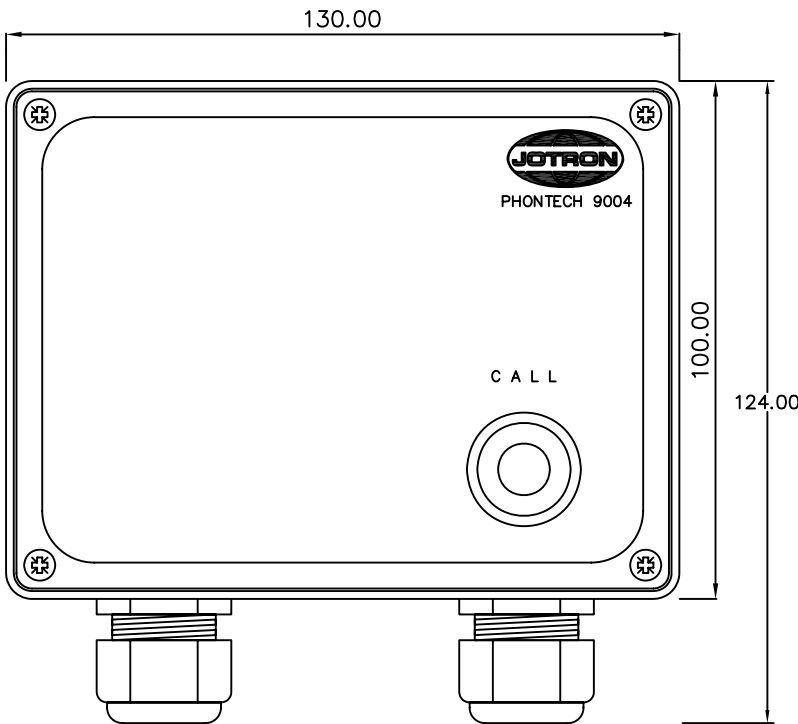
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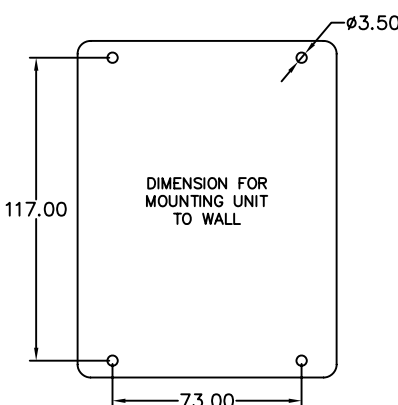
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EQUIPMENT DATA:

MANUFACTURER	: JOTRON PHONTECH AS	FIXING DETAILS	: SEE INSIDE BOX
MODEL/TYPE	: CALL UNIT	ACCESS	: FRONT
RACK/BOX SUPPL.	: JOTRON PHONTECH AS	CABLE ENTRY	: BOTTOM
RACK/BOX TYPE	: NA.	GLAND TYPE	: 2pcs. M20
MATERIAL	: PC/ABS BLEND	PROTECTION IP	: IP-56
COLOUR	: RAL 9005/9006	POWER SUPPLY	: NA.
WEIGHT OF UNIT	: 0,3Kg.	POWER CONSUMP.	: NA.
MOUNTING	: TO WALL	HEAT DISSIPATION	: NA.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.23	DVM COMPLETION	ASK		ASK
B	2010.05.07	DVM REVISION	ASK		ASK
A	2010.04.27	DEVELOPMENT	CD		CD



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TITLE: 9004, ABS – CALL UNIT
MECHANICAL LAYOUT.

SIZE:	A3	UED No:	
DOC. No:	09908-003-ML		
FILE NAME:	09908-003-ML.DWG		

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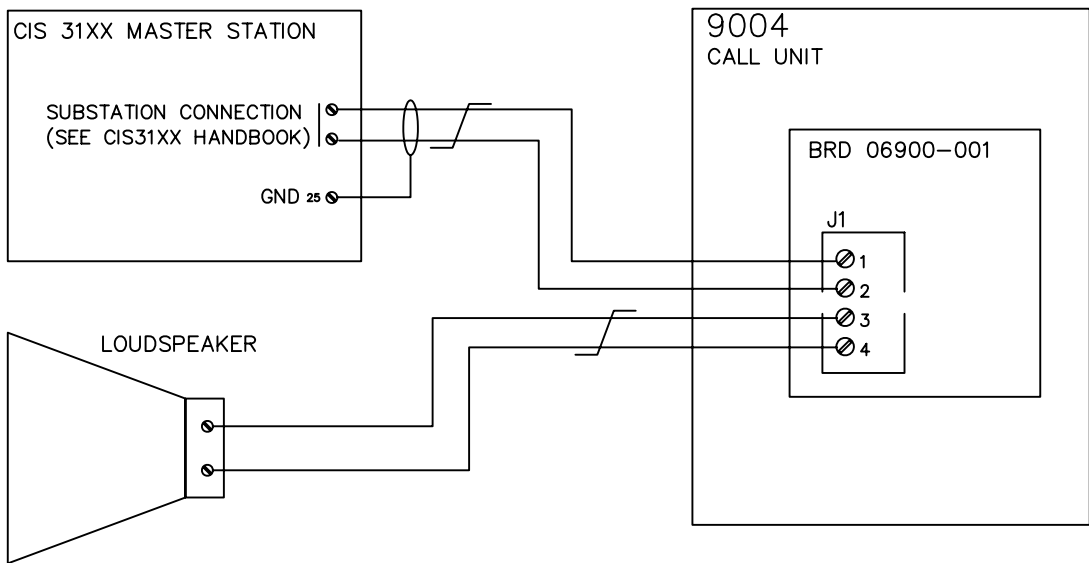
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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.23	DVM COMPLETION	ASK		ASK
A	2010.04.27	DEVELOPMENT.	ASK		ASK



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TITLE: 9004, ABS - CALL UNIT
EXTERNAL CONNECTION

SIZE: A4 UED No:
DOC. No: 09908-003-EC
FILE NAME: 09908-003-EC.DWG

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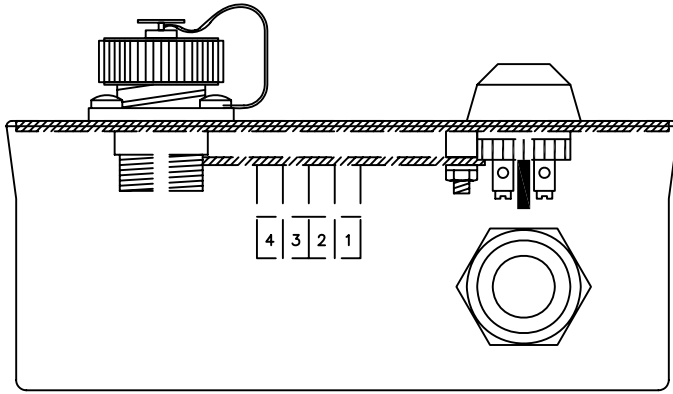
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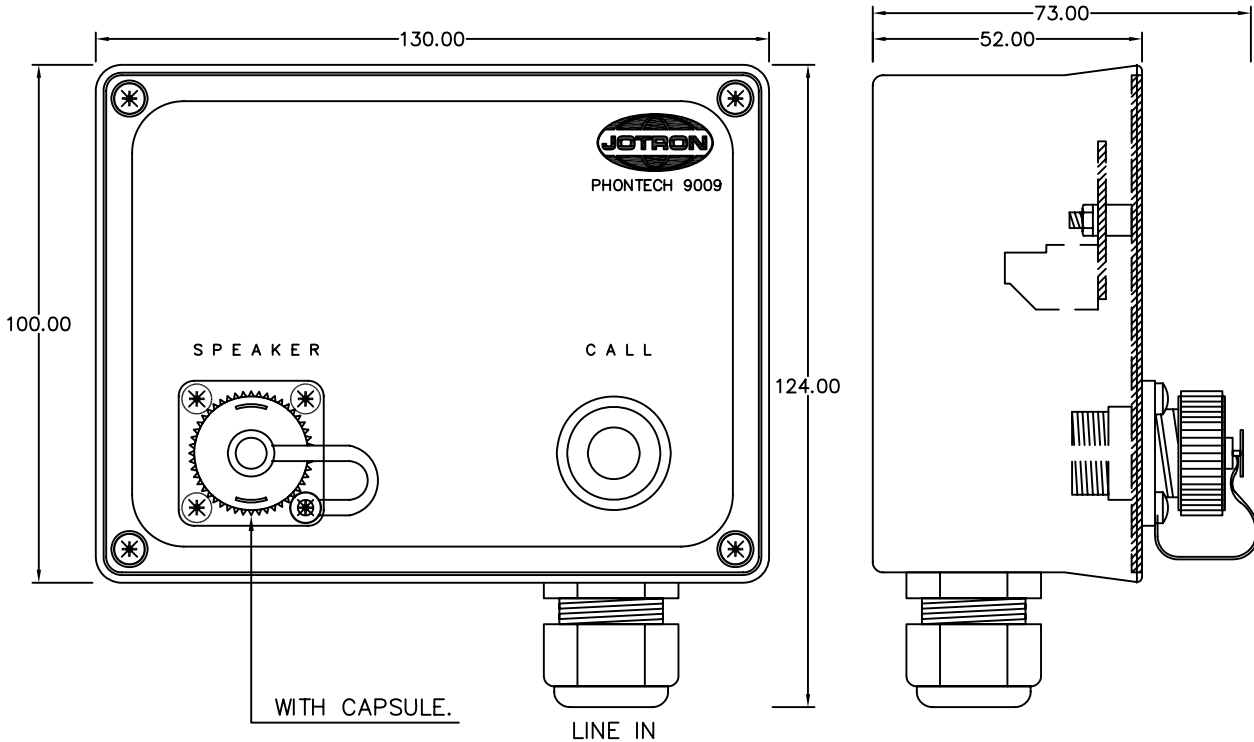
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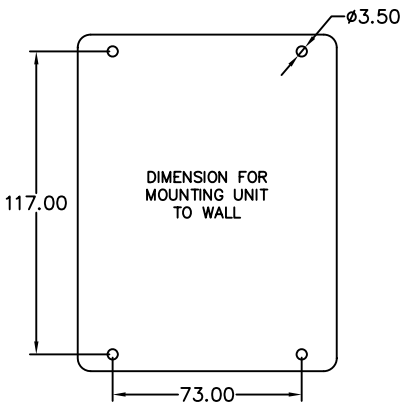
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EQUIPMENT DATA:

MANUFACTURER	: JOTRON PHONTECH AS.	FIXING DETAILS	: SEE INSIDE BOX.
MODEL/TYPE	: CALL/PLUGBOX.	ACCESS	: FRONT.
RACK/BOX SUPPL.	: JOTRON PHONTECH AS.	CABLE ENTRY	: BOTTOM.
RACK/BOX TYPE	: NA.	GLAND TYPE	: 1pcs. M20.
MATERIAL	: PC/ABS BLEND, ABS.	PROTECTION IP	: IP-56.
COLOUR	: RAL 9005/NATUR.	POWER SUPPLY	: FROM CENTRAL.
WEIGHT OF UNIT	: 0,3Kg.	POWER CONSUMP.	: NA.
MOUNTING	: TO WALL.	HEAT DISSIPATION	: NA.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.07.23	DVM COMPLETION	ASK		ASK
A	2010.05.10	DEVELOPMENT.	CD		CD

TITLE: 9009, ABS – SUBSTATION.
MECHANICAL LAYOUT.



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SIZE:	A3	UED No:	
DOC. No:	09908-004-ML		
FILE NAME:	09908-004-ML.DWG		

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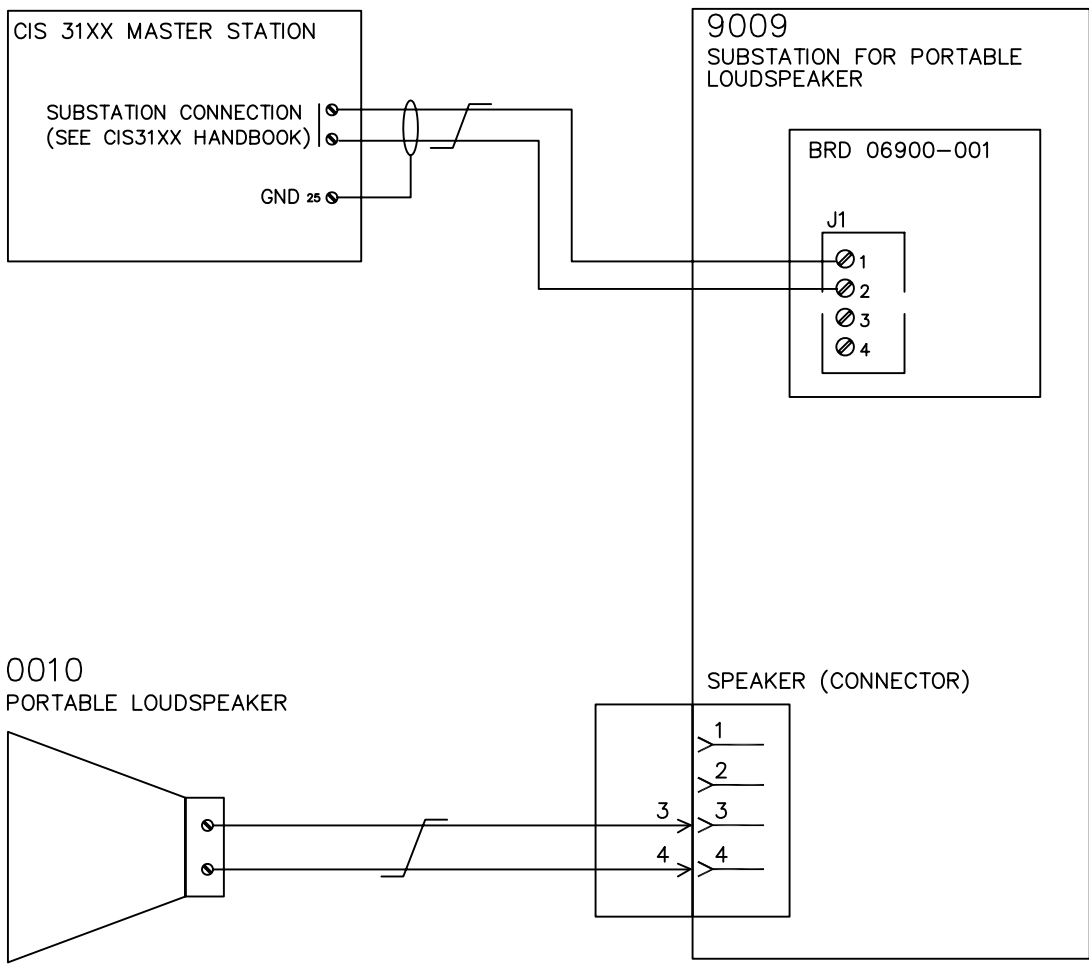
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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.24	DVM COMPLETION	ASK		ASK
A	2010.04.27	DEVELOPMENT.	ASK		ASK



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TITLE: 9009, ABS – SUBSTATION FOR PORTABLE LOUDSPEAKER
EXTERNAL CONNECTION

SIZE: A4 UED No:
DOC. No: 09908-004-EC
FILE NAME: 09908-004-EC.DWG

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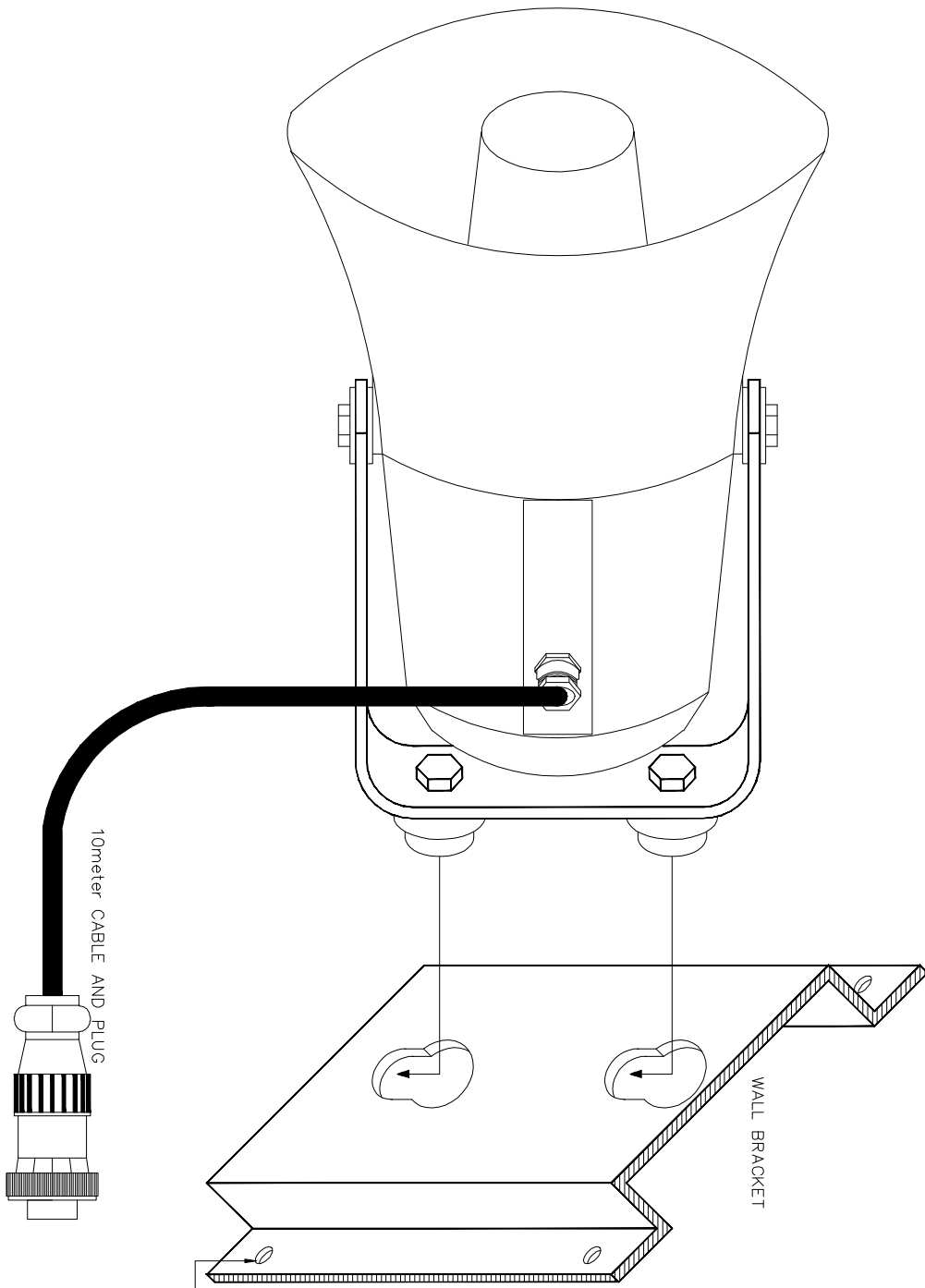
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10meter CABLE AND PLUG

WALL BRACKET

Ø6,00mm
FOR MOUNTING
TO WALL.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	98.11.09	REVISION, EM 713.	R.F.	TBA	ASK
0	90.11.23	AS BUILT.	R.F.	TBA	ASK



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TITLE: PORTABLE LOUDSPEAKER W/BRACKET.
0010.
MECHANICAL LAYOUT.

SIZE: A3 UED No:
DOC. No: 87000-022-ML
FILE NAME: 87000-022-ML.DWG

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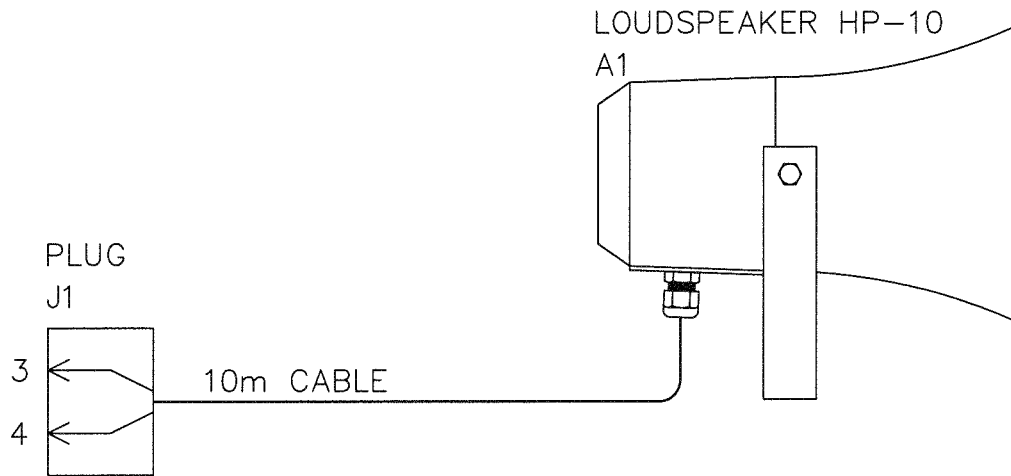
D

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NOTE:
 KRYMPESTRØMPE MED LIM MÅ BENYTTES PÅ PLUGGEN.
 2stk. ø8,00x30mm.
 1stk. ø15,00x30mm.
 1stk. ø23,00x55mm.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	2001.11.08	REVISION EM-891.	R.F.	P.A.	TBA
0	89.09.18	FINAL DOCUMENTATION.	R.F.	JHB	TBA



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TITLE: PORTABLE HORNSPEAKER 0010.
 INTERNAL WIRING.

SIZE: A4 UED No:
 DOC. No: 87000-022-IW
 FILE NAME: 87000-022-IW.DWG

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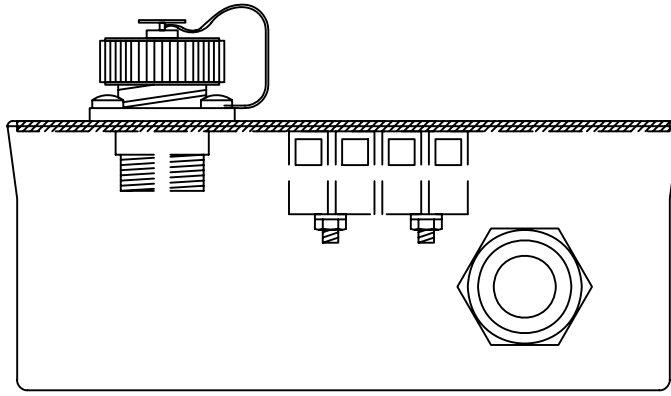
D

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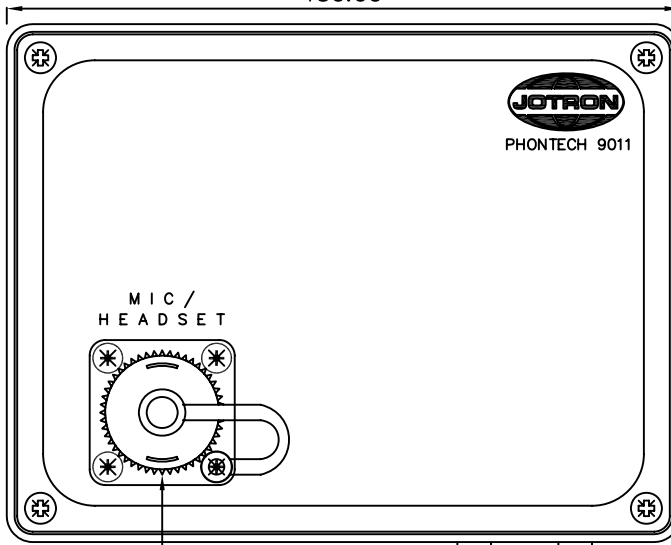
E

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130.00

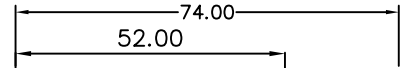


100.00

124.00

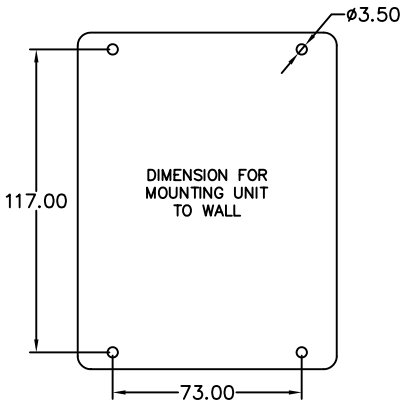
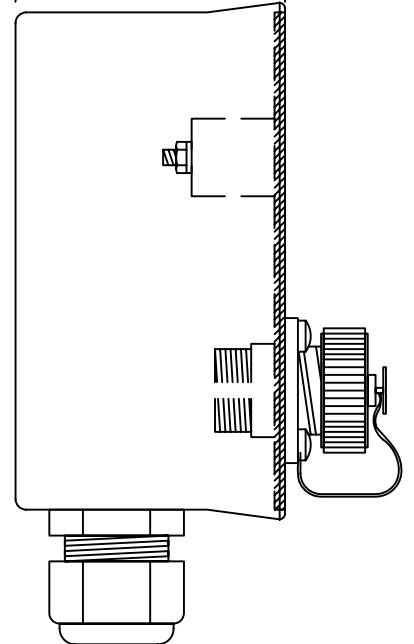
WITH CAPSULE.

LINE IN



74.00

52.00



EQUIPMENT DATA:

MANUFACTURER	: JOTRON PHONTECH AS.	FIXING DETAILS	: SEE INSIDE BOX.
MODEL/TYPE	: PLUGBOX.	ACCESS	: FRONT.
RACK/BOX SUPPL.	: JOTRON PHONTECH AS.	CABLE ENTRY	: BOTTOM.
RACK/BOX TYPE	: NA.	GLAND TYPE	: 1pcs. M20.
MATERIAL	: PC/ABS BLEND, ABS.	PROTECTION IP	: IP-56.
COLOUR	: RAL 9005/NATUR.	POWER SUPPLY	: FROM CENTRAL.
WEIGHT OF UNIT	: 0,3Kg.	POWER CONSUMP.	: NA.
MOUNTING	: TO WALL.	HEAT DISSIPATION	: NA.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.24	DVM COMPLETION	ASK		ASK
A	2010.05.10	DEVELOPMENT.	CD		CD

TITLE: 9011, ABS - PLUGBOX.

MECHANICAL LAYOUT.



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SIZE:	A3	UED No:	
DOC. No:	09908-005-ML		
FILE NAME:	09908-005-ML.DWG		

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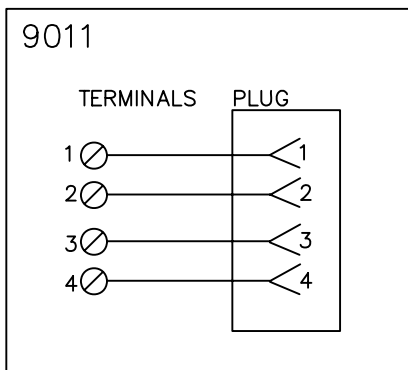
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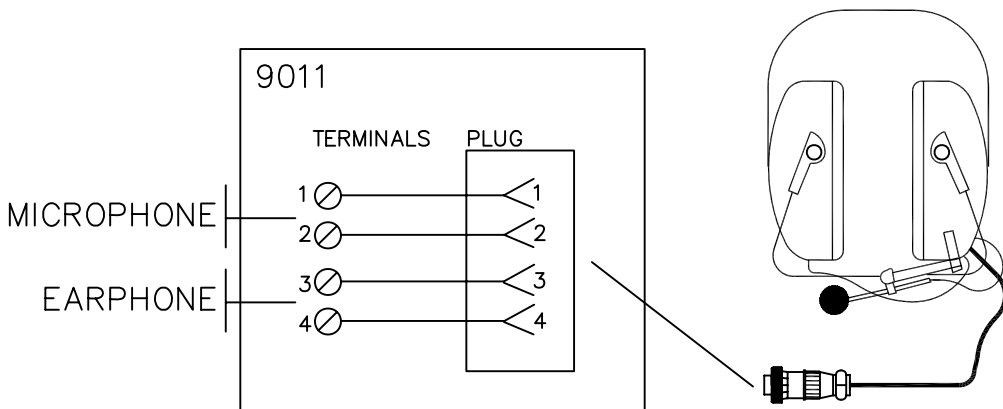
A

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GENERAL PURPOSE

B

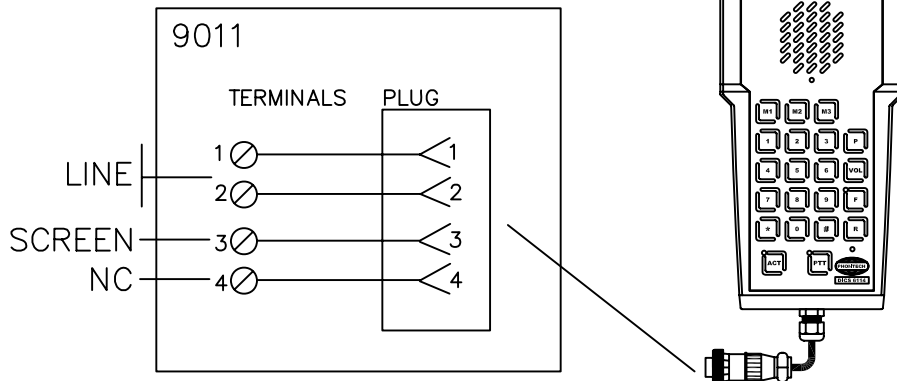
C



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HEADSET / MICROPHONE

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DICS 6114

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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.24	DVM COMPLETION	ASK		ASK
A	2010.05.07	DEVELOPMENT.	ASK		ASK

E



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F

TITLE: 9011, ABS – PLUGBOX WEATHERPROOF

EXTERNAL CONNECTION

F

SIZE: A4	UED No:
DOC. No: 09908-005-EC	
FILE NAME: 09908-005-EC.DWG	

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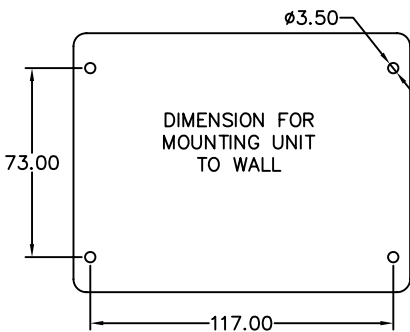
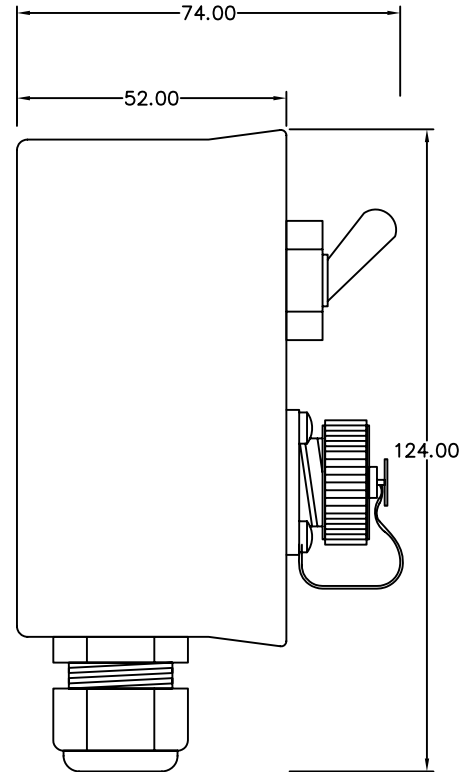
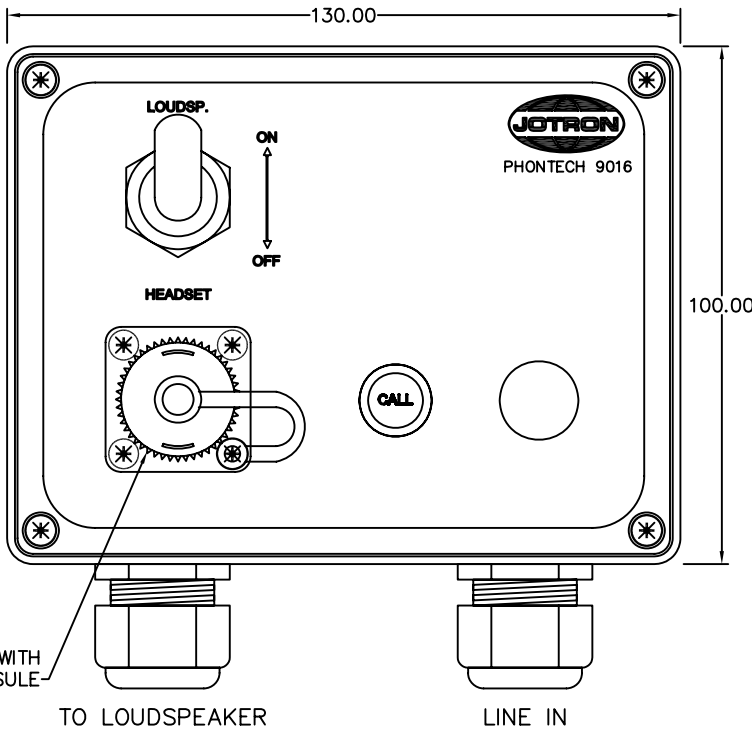
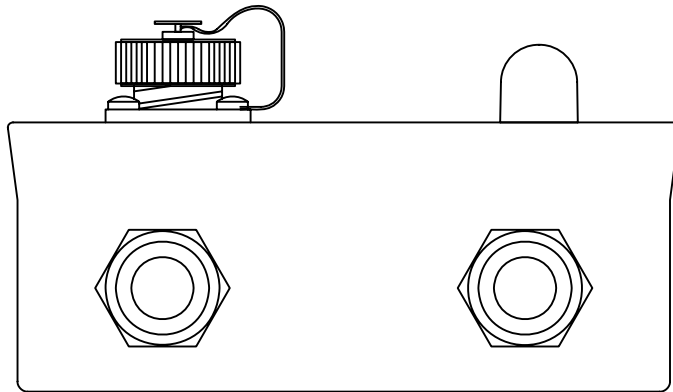
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EQUIPMENT DATA:

MANUFACTURER : JOTRON PHONTECH AS.	FIXING DETAILS : SEE INSIDE BOX.
MODEL/TYPE : CALL/PLUG BOX.	ACCESS : FRONT.
RACK/BOX SUPPL. : JOTRON PHONTECH AS.	CABLE ENTRY : BOTTOM.
RACK/BOX TYPE : NA.	GLAND TYPE : 2pcs. M20
MATERIAL : PC/ABS BLEND, ABS.	PROTECTION IP : IP-56.
COLOUR : RAL 9005/9006.	POWER SUPPLY : FROM CENTRAL.
WEIGHT OF UNIT : 0,3Kg.	POWER CONSUMP. : NA.
MOUNTING : TO WALL.	HEAT DISSIPATION : NA.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.29	DVM COMPLETION	ASK		ASK
A	2010.06.21	DEVELOPMENT	CD		CD

TITLE: 9016, ABS – SUBSTATION.

MECHANICAL LAYOUT



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SIZE: A3	PAGE:
DRAWING No: 09908-012-ML	
FILE NAME: 09908-012-ML.DWG	

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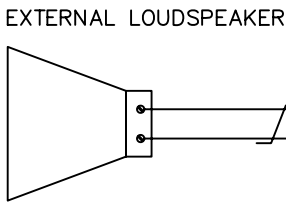
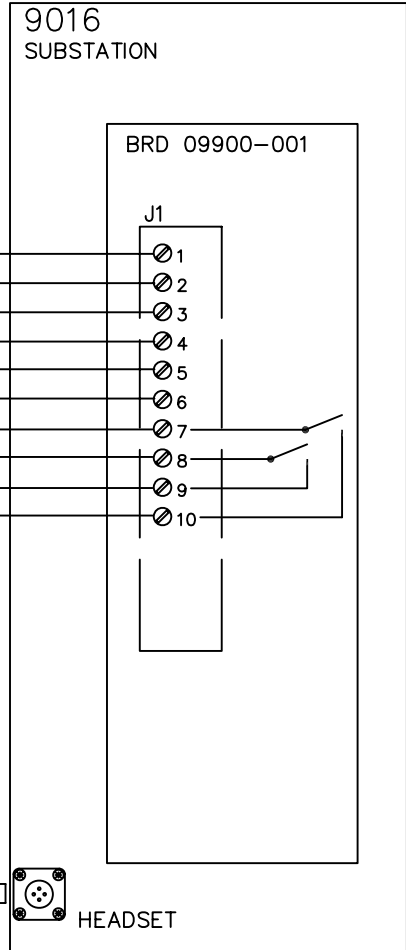
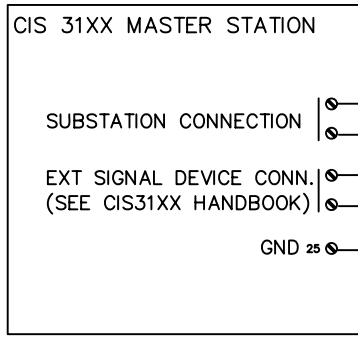
B

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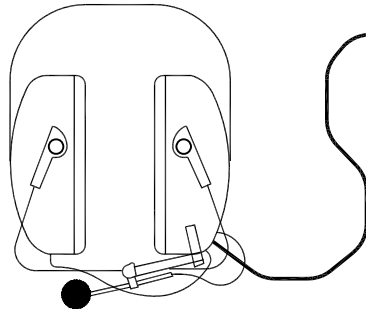
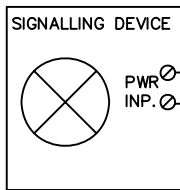
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RATED POWER FOR THE
SIGNALLING DEVICE:
90-240 VAC / 5-48VDC
8 A



0	2010.09.29	DVM COMPLETION	ASK		ASK
A	2010.06.21	DEVELOPMENT.	ASK		ASK
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED



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TITLE: 9016, ABS – SUBSTATION
EXTERNAL CONNECTION

SIZE: A4 UED No:
DOC. No: 09908-012-EC
FILE NAME: 09908-012-EC.DWG

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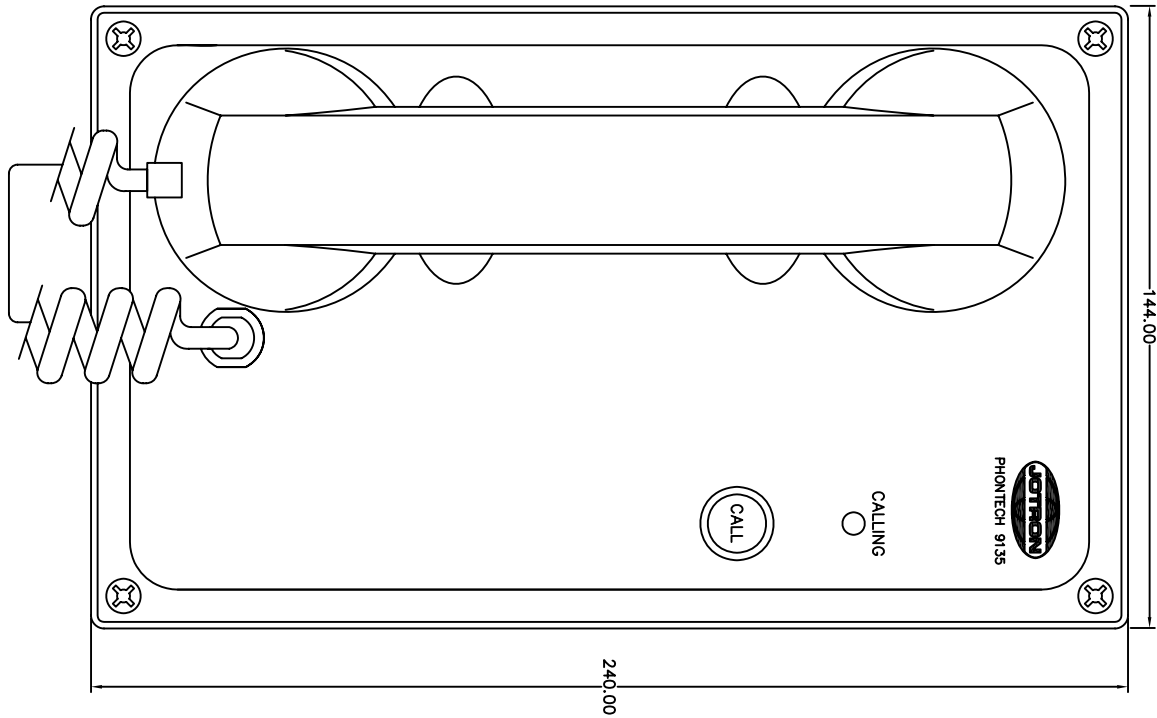
D

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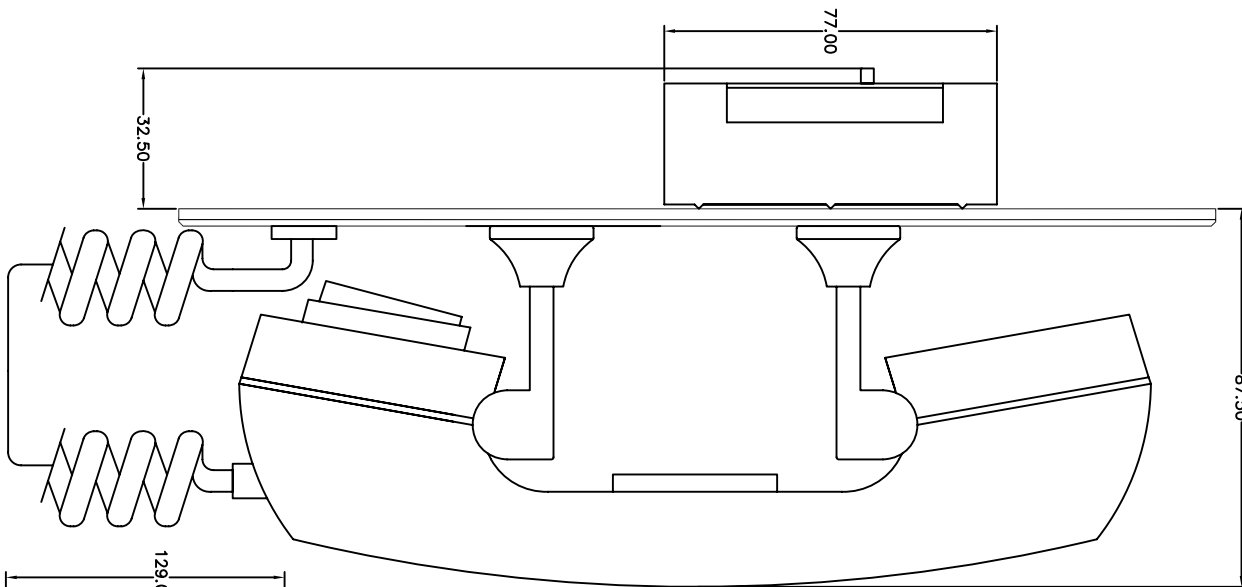
E

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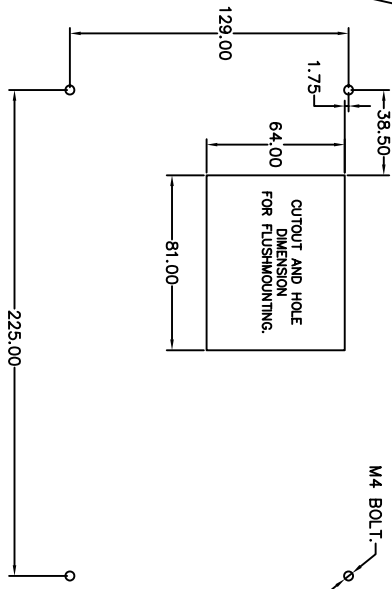
F



FRONT VIEW



SIDE VIEW



REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
2	20.09.2010	REVISION EM 1299.	CD	TBA	ASK
1	20.12.2009	REVISION EM 1246.	CD	TBA	ASK
0	21.04.2009	AS BUILT.	CD		

TITLE: HANDSET SUBSTATION w/RELAY
9135.
MECHANICAL LAYOUT.



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SIZE: A3	UED No:
DOC. No: 08900-001-ML	
FILE NAME: 08900-001-ML.dwg	

1

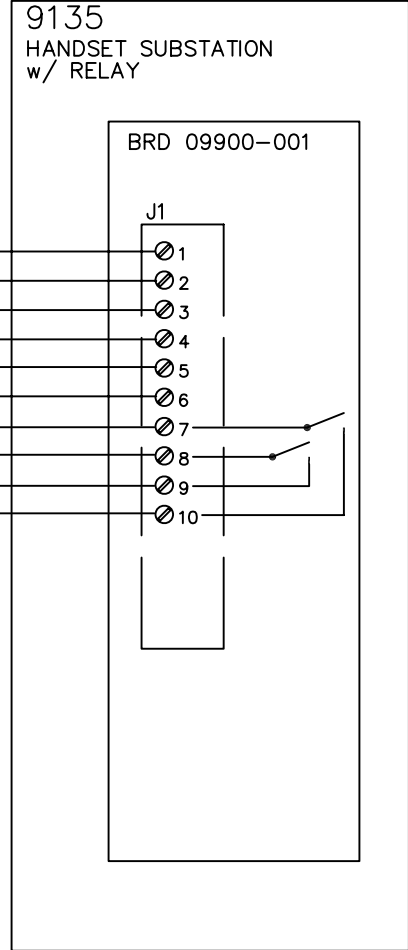
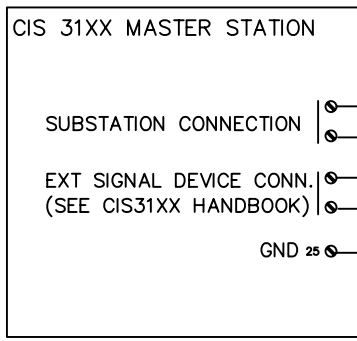
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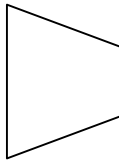
A



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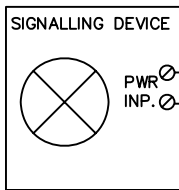
EXTERNAL LOUDSPEAKER



RATED POWER FOR THE
SIGNALLING DEVICE:
90-240 VAC / 5-48VDC
8 A

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0	2010.09.30	DVM COMPLETION	ASK		ASK
A	2010.05.10	DEVELOPMENT.	ASK		ASK
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED



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TITLE: 9135, HANDSET SUBSTATION
w/ RELAY
EXTERNAL CONNECTION

SIZE: A4 UED No:
DOC. No: 08900-001-EC
FILE NAME: 08900-001-EC.DWG

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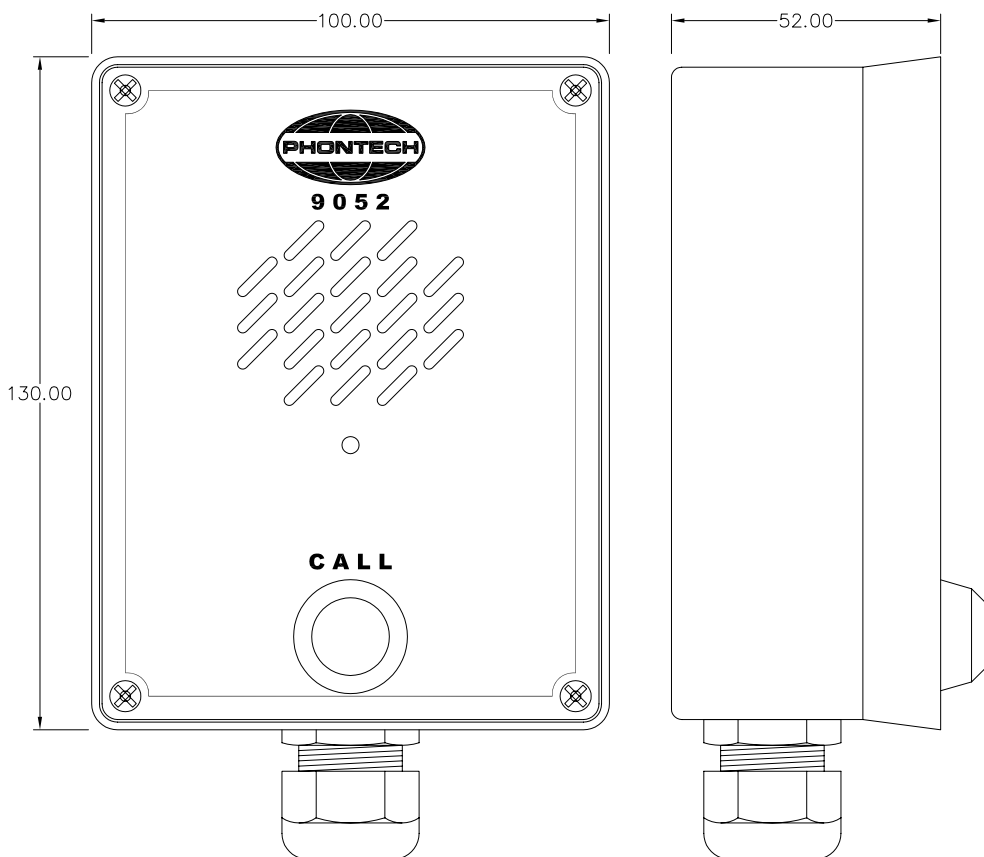
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EQUIPMENT DATA:

MANUFACTURER	: PHONTECH AS.	FIXING DETAILS	: SEE MOUNTING KIT.
MODEL/TYPE	: SUBSTATION.	ACCESS	: FRONT.
RACK/BOX SUPPL.	: PHONTECH AS.	CABLE ENTRY	: BOTTOM.
RACK/BOX TYPE	: UNIVERSAL.	GLAND TYPE	: PG-13,5.
MATERIAL	: BYBLEND/AISI 316.	PROTECTION IP	: IP-55.
COLOUR	: RAL 9005/NATUR.	POWER SUPPLY	: NA.
WEIGHT OF UNIT	: APP: 0.6 Kg.	POWER CONSUMP.	: NA.
MOUNTING	: TO WALL.	HEAT DISSIPATION	: NA.

0	2003.03.27	FINAL DOCUMENTATION	R.F.	TBA	ASK
REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED



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TITLE: SUBSTATION 9052.
WATER TIGHT
MECHANICAL LAYOUT.

SIZE:	A3	UED No:	M032
DOC. No:	02900-005-ML		
FILE NAME:	02900-005-ML.DWG		

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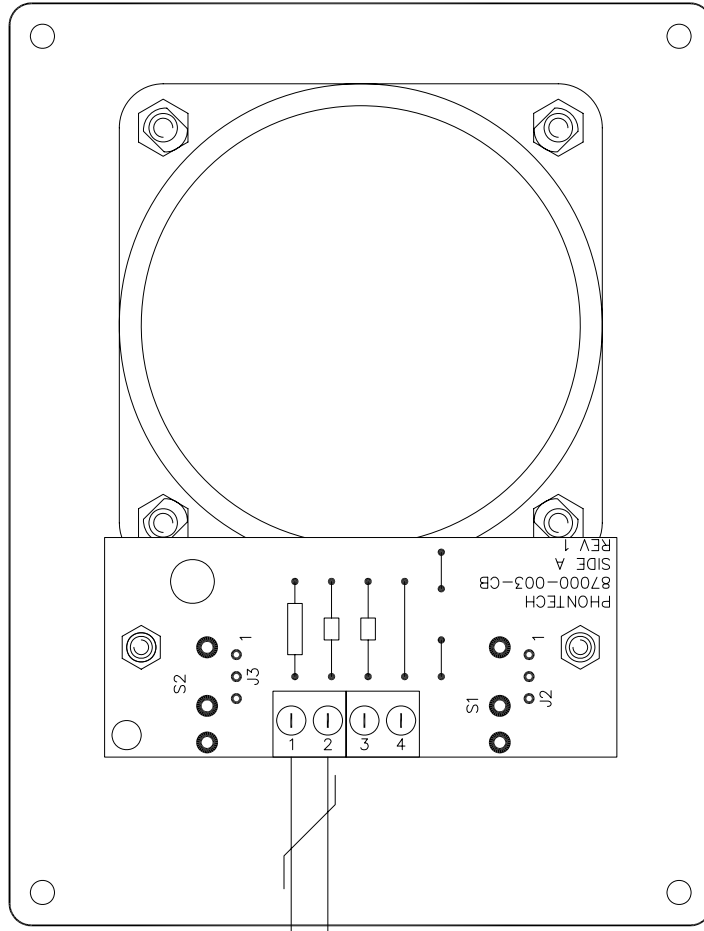
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LINE IN
FROM
CIS-31XX SYSTEM

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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2003.05.06	FINAL DOCUMENTATION	R.F.	TBA	ASK



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TITLE: SUBSTATION 9052.
WATER TIGHT
EXTERNAL CONNECTION.

SIZE: A4	UED No: M032
DOC. No: 02900-005-EC	
FILE NAME: 02900-005-EC.DWG	

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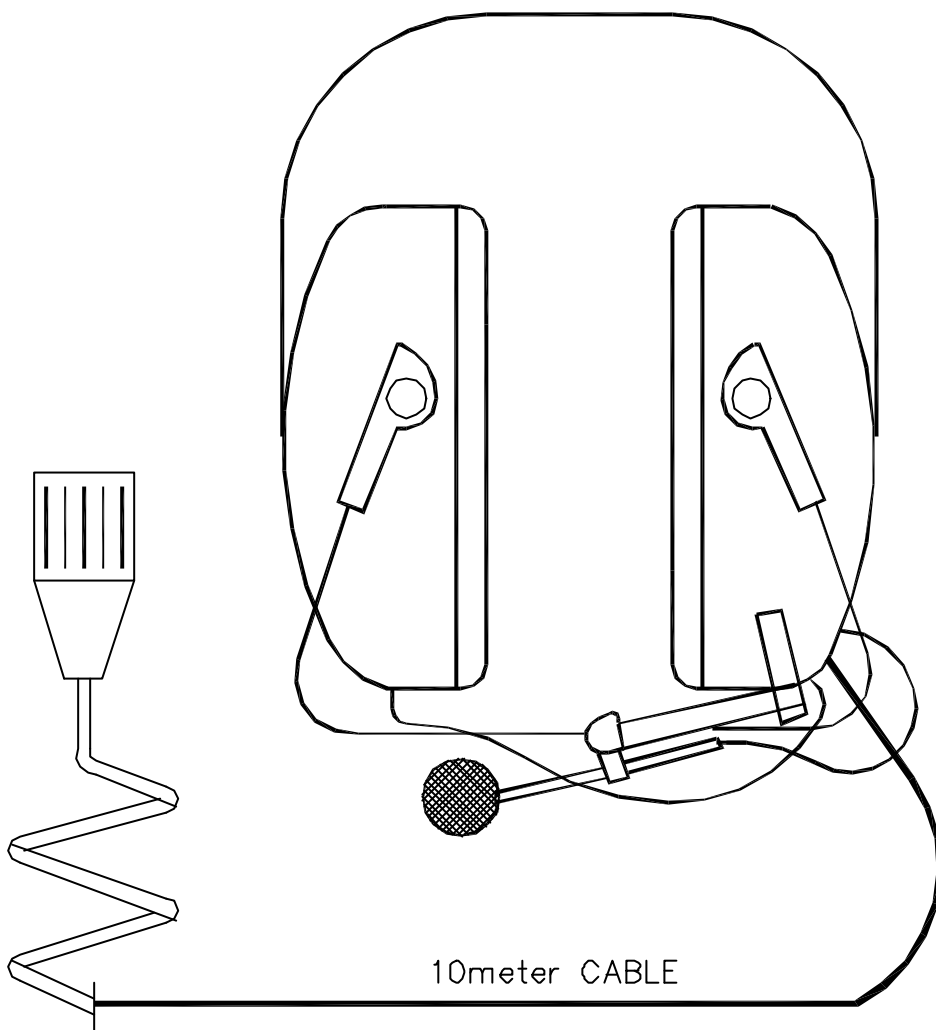
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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	87.10.19	AS BUILT.	R.F.	JHB	JHB



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TITLE: HEADSET.
0005.
MECHANICAL LAYOUT.

SIZE: A4 UED No:
DOC. No: 87000-027-ML
FILE NAME: 0005-ML.DWG

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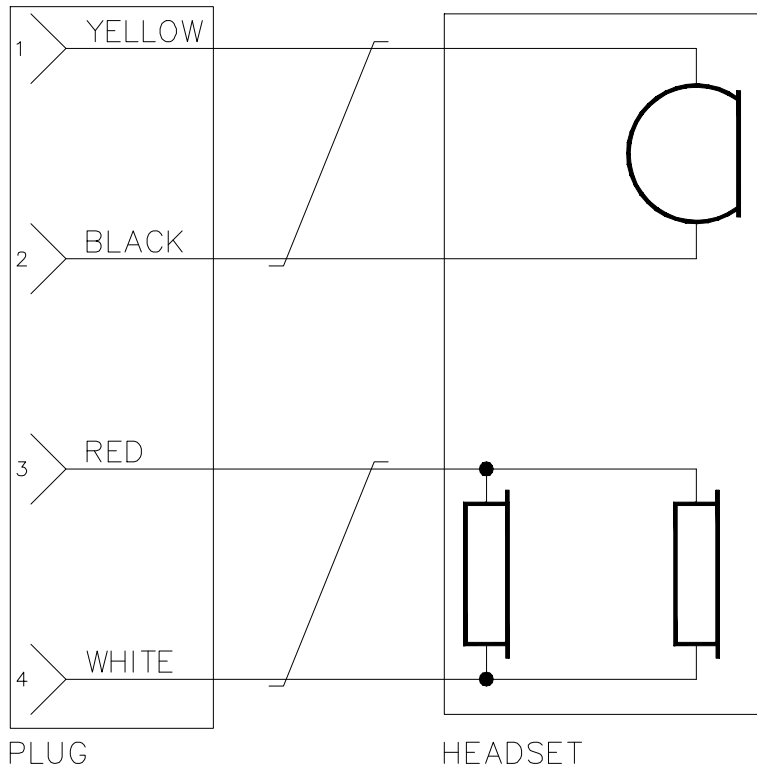
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NOTE: 10meter CABLE.

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	89.01.30	CHANGE ORDER No.139	R.F.	JHB	JHB
0	87.10.19	AS BUILT.	R.F.	JHB	JHB



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TITLE: HEADSET.
0005.
INTERNAL WIRING.

SIZE: A4
DOC. No: 87000-027-IW
FILE NAME: 0005-IW.DWG

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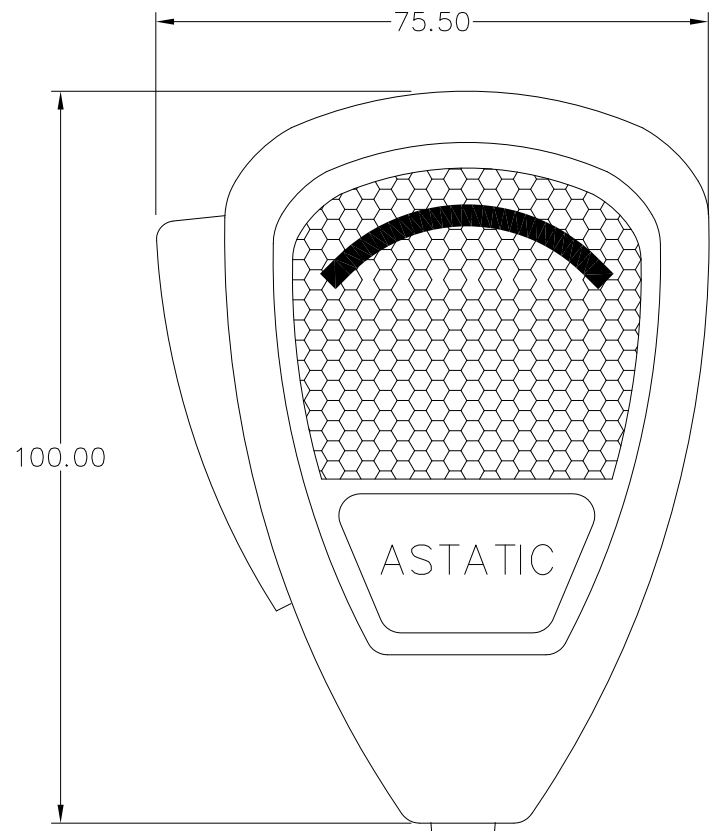
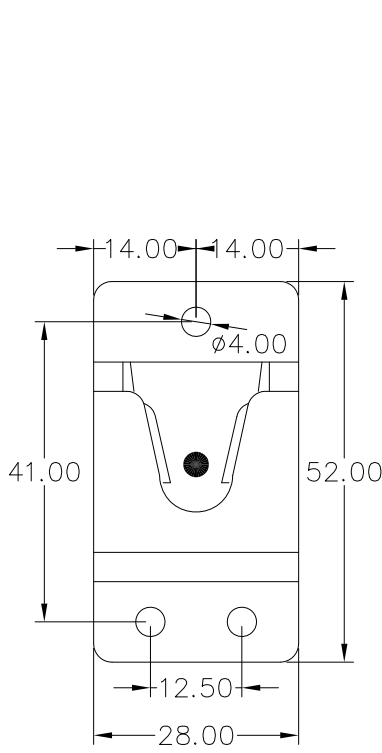
D

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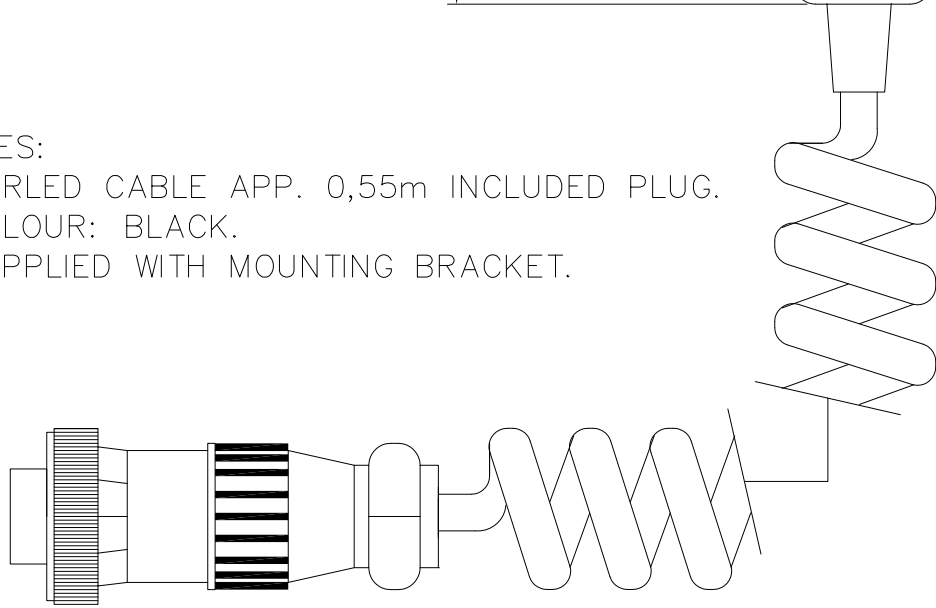
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- NOTES:
 - CURLED CABLE APP. 0,55m INCLUDED PLUG.
 - COLOUR: BLACK.
 - SUPPLIED WITH MOUNTING BRACKET.



REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	16.02.2007	REVISION, EM 1082	ASk	TBA	ASk
0	98.01.20	AS BUILT.	R.F.	TBA	A.I.



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TITLE: HANDHELD MICROPHONE WITH PLUG.
 9017.
 MECHANICAL LAYOUT.

SIZE: A4
 UED No:
 DOC. No: 96900-017-ML
 FILE NAME: 96900-017-ML.dwg

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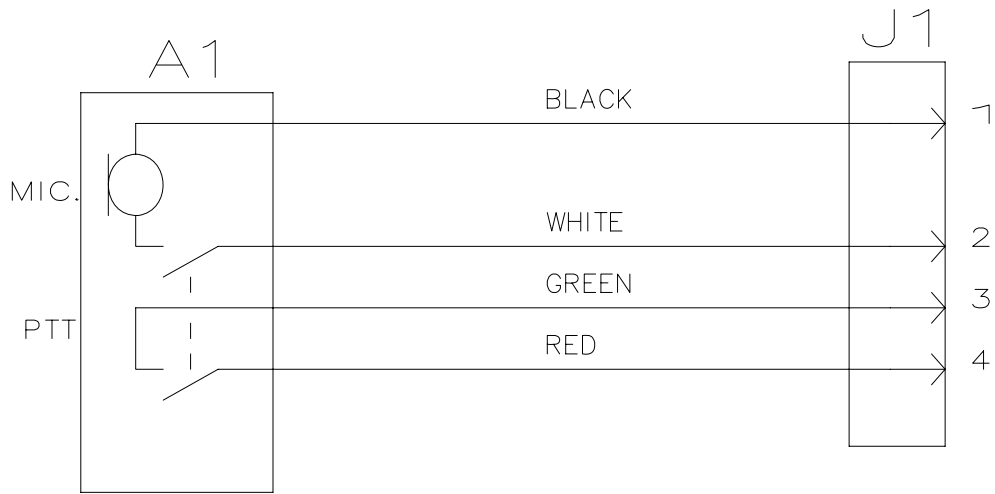
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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	16.02.2007	REVISION, EM 1082	ASk	TBA	ASk
0	98.01.20	AS BUILT.	R.F.	TBA	A.I.



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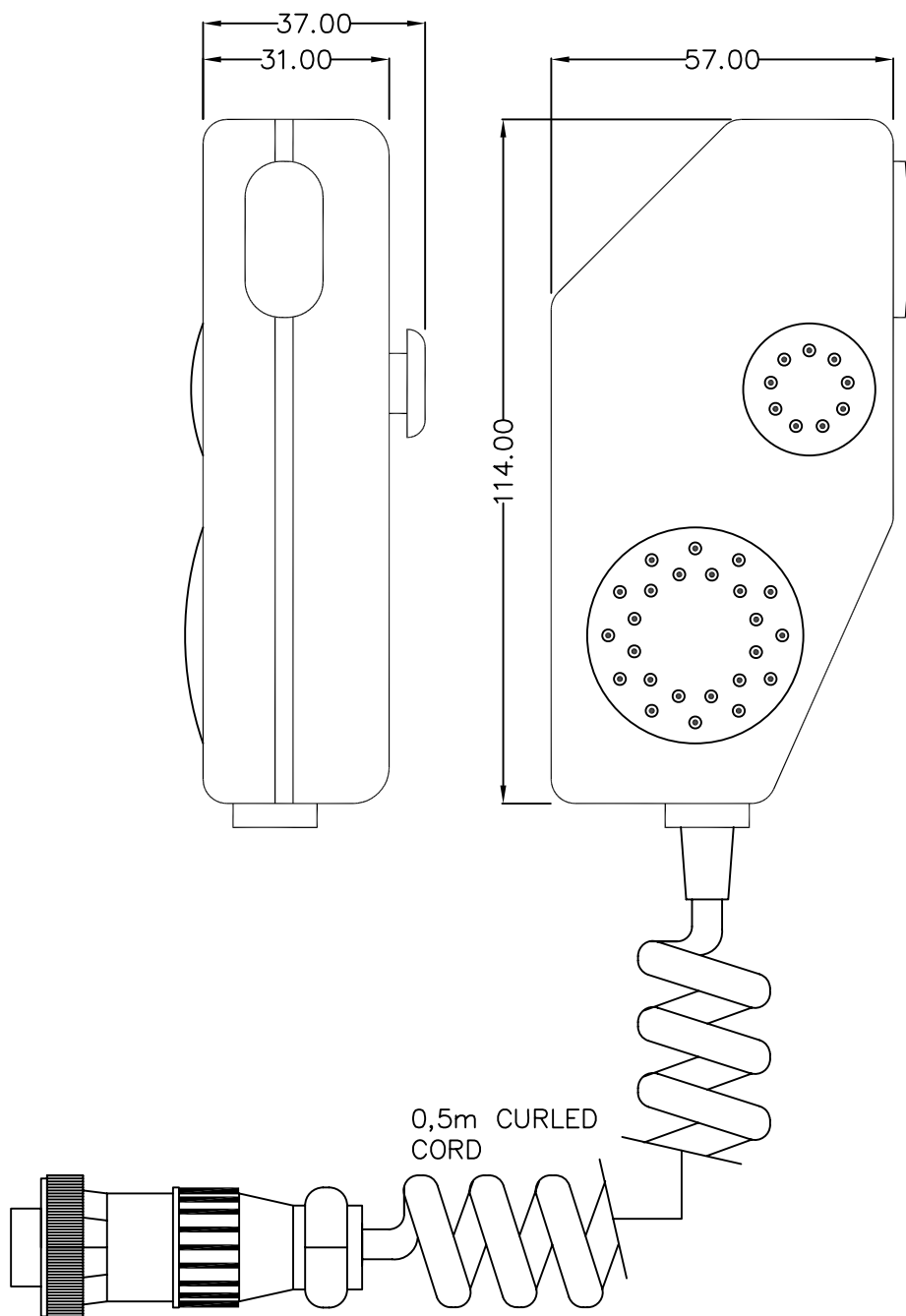
TITLE: HANDHELD MICROPHONE WITH PLUG.
9017.
INTERNAL WIRING.

SIZE: A4 UED No:
DOC. No: 96900-017-IW
FILE NAME: 96900-017-IW.dwg

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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	29.04.2011	REVISION, EM 1374	ASK	TBA	ASK
0	12.04.1999	AS BUILT	R.F	ASK	R.F.



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TITLE: 9117 - 2 WAY MICROPHONE FOR BRIDGE WING
MECHANICAL LAYOUT

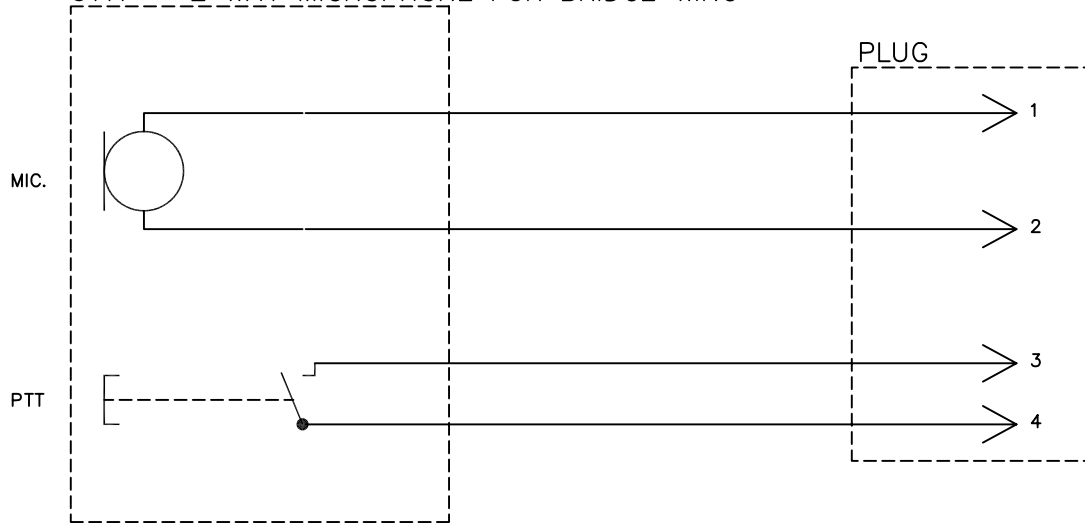
SIZE: A4 PAGE: --
DRAWING No: 96900-018-ML
FILE NAME: 96900-018-ML.DWG

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9117 - 2 WAY MICROPHONE FOR BRIDGE WING



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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	03.05.2011	AS BUILT	ASK	TBA	ASK



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TITLE: 9117 - 2 WAY MICROPHONE FOR BRIDGE WING

EXTERNAL CONNECTION

SIZE: A4	PAGE: --
DRAWING No: 96900-018-EC	
FILE NAME: 96900-018-EC.DWG	

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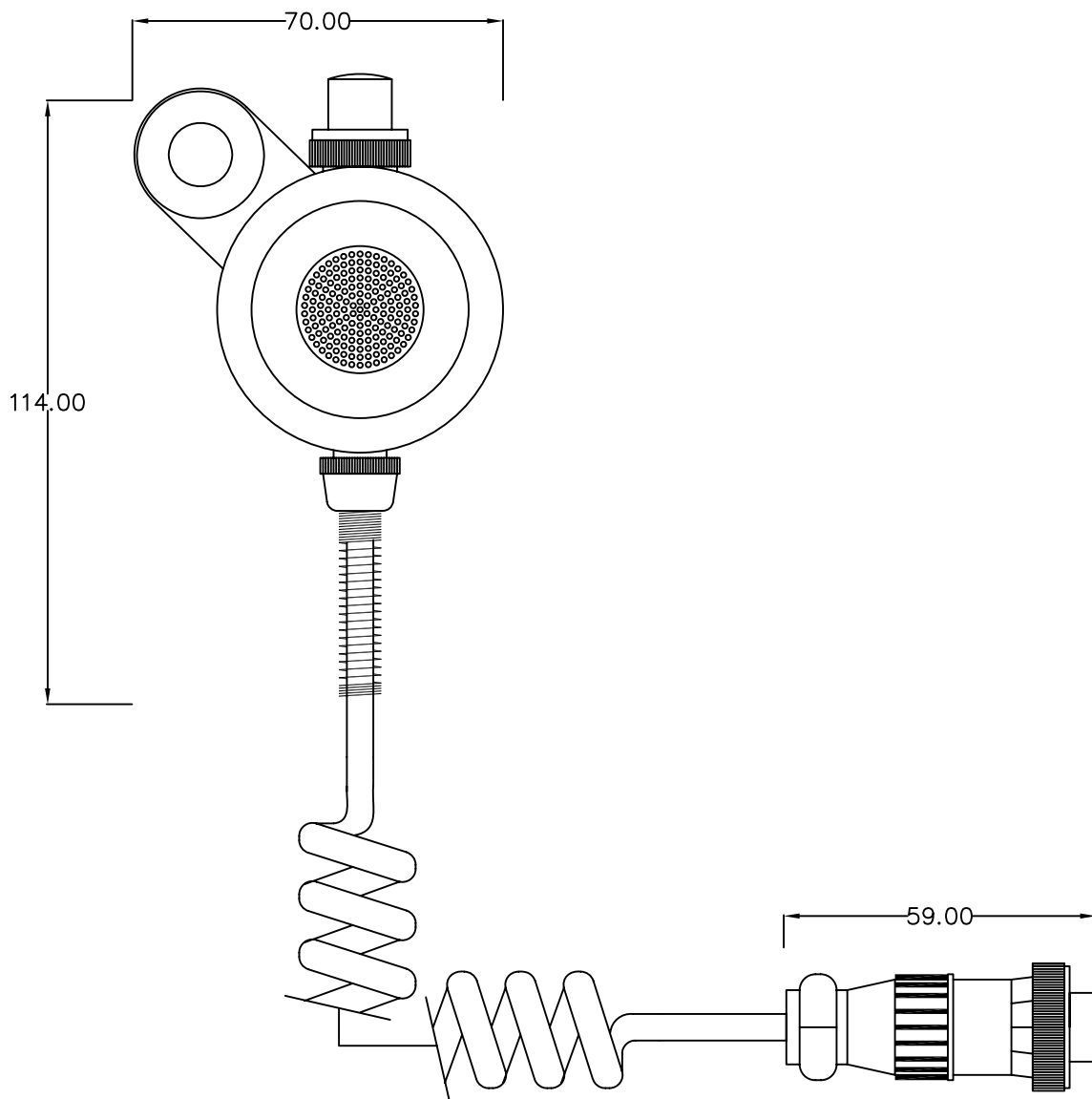
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REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	03.05.2011	REVISION, EM 1376	ASK	TBA	ASK
0	20.02.1998	AS BUILT	R.F	P.A.	R.F.



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TITLE: 9217 – WATERPROOF HAND–HELD MICROPHONE
MECHANICAL LAYOUT

SIZE: A4	PAGE: --
DRAWING No: 96900–019–ML	
FILE NAME: 96900–019–ML.DWG	

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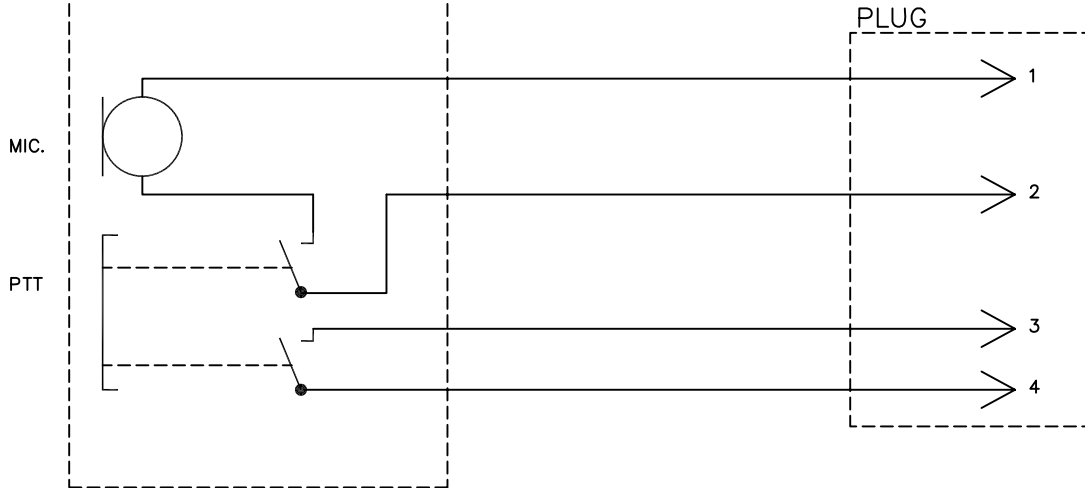
E

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9217 - WATERPROOF HAND-HELD MICROPHONE



REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	04.05.2011	AS BUILT	ASK	TBA	ASK



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TITLE: 9217 - WATERPROOF HAND-HELD MICROPHONE
MECHANICAL LAYOUT

SIZE: A4 PAGE: --
DRAWING No: 96900-019-EC
FILE NAME: 96900-019-EC.DWG



DNH^{AS}

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NORWAY**
 Phone: (47) 35 98 56 00
 Fax: (47) 35 98 56 10
 E-mail: dnh@dnh.no
 Web-site: www.dnh.no

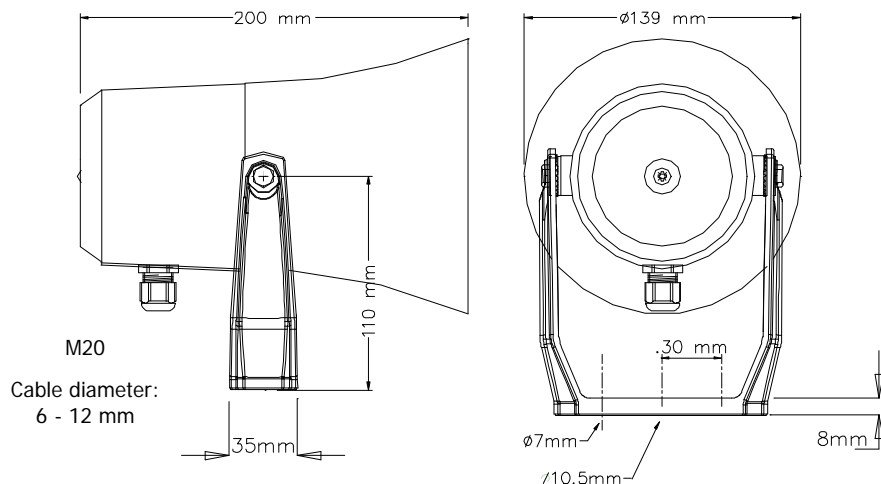
**DNH WW Ltd.
England** Phone:.....(44) 1908 275 000
 Fax:.....(44) 1908 275 100
 E-mail:.....dnh@dnh.co.uk

**DNH
France** Phone:.....(33) 1 5380 0276
 Fax:.....(33) 1 4588 1594
 E-mail:.....etienne@dnh.no

**DNH GmbH
Germany** Phone:.....(49) 040 6569 30-0
 Fax:.....(49) 040 6569 30-30
 E-mail:.....dnh@dnh.de

**DNH
Speakers Inc.
USA** Phone:.....(1) 484 494 5790
 Fax:.....(1) 484 494 5793
 E-mail:.....dnh@dnhspeakers.com

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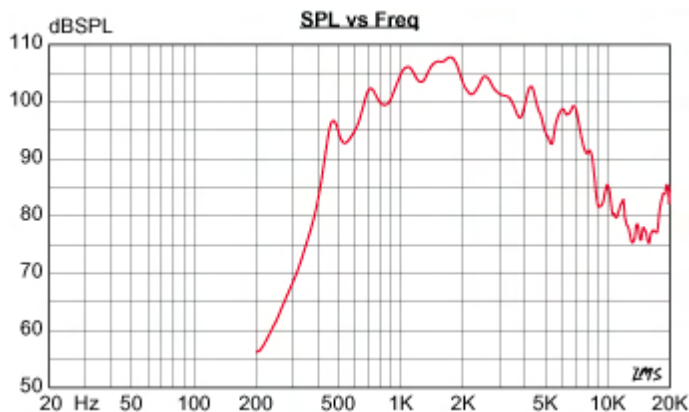


70/100 volt Combined
Transformer:

Primary connections:
 5 : 7 70 Volt line
 5 : 8 100 Volt line

Secondary nominal
tappings:
 1 : 4 10,0 W
 1 : 3 5,0 W
 2 : 4 3,5 W
 1 : 2 2,5 W
 3 : 4 1,5 W
 2 : 3 0,8 W

Sound pressure levels at different frequencies at 1W/1m sine wave.



Material / Color ABS / RAL 7035
 Mounting Bracket
 Termination Internal screw connections
 Weight (2,9 lb) 1,3 kg
 IP-rating (UL equivalent) (12 & 4X) 56
 Max / min amb temp 90 °C / -50 °C
 Rated / max. power 10 W / 15 W
 SPL 1W/1m 106 dB
 SPL rated power 116 dB
 Effective freq. range 410 – 8000 Hz
 Dispersion (-6dB) 1kHz / 4kHz 150° / 45°
 Directivity factor, Q (2kHz) 7,4
 Options Impedances, colors, labels

Installation, Operation and Maintenance Procedures

- When mounting the loudspeaker please ensure that it is re-assembled in the same manner in which it was received. Fasten the bracket with 1-3 screws and ensure to use all washers in the intended position to assure the IP rating.
- To change the position of the loudspeaker, please adjust the bracket (by loosening / tightening the screws) as required.
- For optimum performance, always use the correct voltage / power and operate within the frequency limits as stated.
- Do not open loudspeaker when energized.
- Fasten lid with a torque of 1 - 2 Nm.
- This loudspeaker is supplied with a 2 year warranty against defective materials and workmanship.





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NORWAY**
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Web-site: www.dnh.no

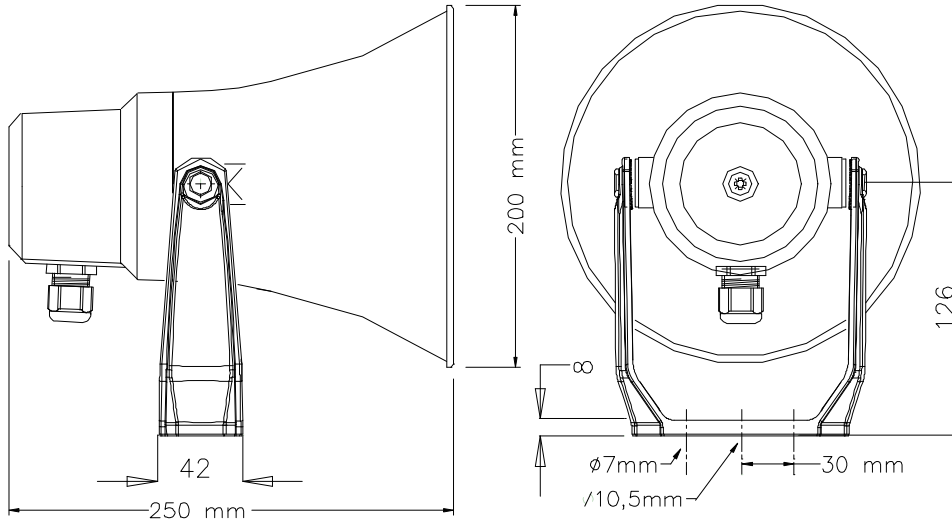
**DNH WW Ltd.
England** Phone:.....(44) 1908 275 000
Fax:.....(44) 1908 275 100
E-mail:.....dnh@dnh.co.uk

**DNH
France** Phone:.....(33) 1 5380 0276
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Fax:.....(49) 040 6569 30-30
E-mail:.....dnh@dnh.de

**DNH
Speakers Inc.
USA** Phone:.....(1) 484 494 5790
Fax:.....(1) 484 494 5793
E-mail:.....dnh@dnhspeakers.com

HP-15(T)



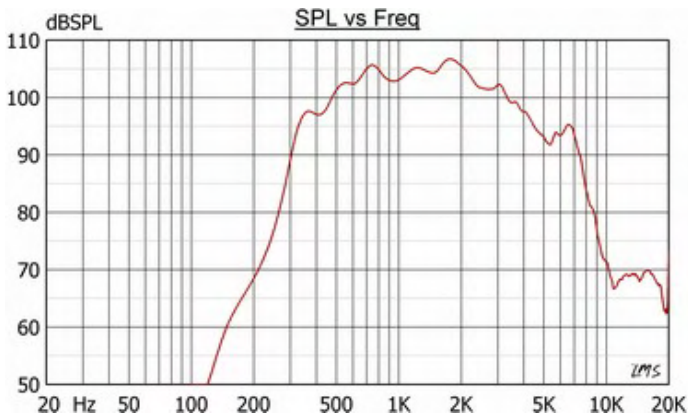
50/100 volt Combined
Transformer:

Primary connections:
5 : 6 50 Volt line
5 : 8 100 Volt line

Secondary nominal
tappings:

1 : 4	15,0 W
1 : 3	7,5 W
2 : 4	5,0 W
1 : 2	4,0 W
3 : 4	2,0 W
2 : 3	0,8 W

Sound pressure levels at different frequencies at 1W/1m sine wave



Material / Color ASA / RAL 7035
Mounting Bracket
Termination Inside screw connections
Weight 1,7 kg
IP-rating 56
Max. / min. amb. temp 90 °C / -50 °C
Rated / max. power 15 W / 20 W
SPL 1W/1m 108 dB
SPL rated power 118 dB
Effective freq. range 330 – 8000 Hz
Dispersion (-6dB) 1kHz / 4kHz 130° / 35°
Directivity factor, Q (2kHz) 8,3
Options Impedances, colors, labels

Installation, Operation and Maintenance Procedures

- When mounting the loudspeaker please ensure that it is re-assembled in the same manner in which it was received. Fasten the bracket with 1-3 screws and ensure to use all washers in the intended position to assure the IP rating.
- To change the position of the loudspeaker please adjust the bracket (by loosening / tightening the screws) as required.
- For optimum performance, always use the correct voltage / power and operate within the frequency limits as stated.
- Do not open loudspeaker when energized.
- Fasten lid with a torque of 1 - 2 Nm.
- This loudspeaker is supplied with a 2 year warranty against defective workmanship.





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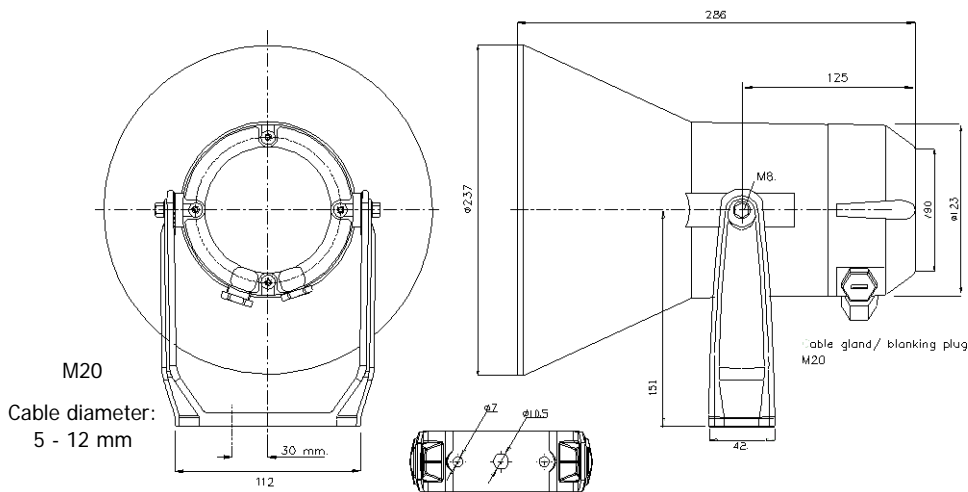
**N-3770 Kragerø
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 Phone: (47) 35 98 56 00
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 E-mail: dnh@dnh.no
 Web-site: www.dnh.no

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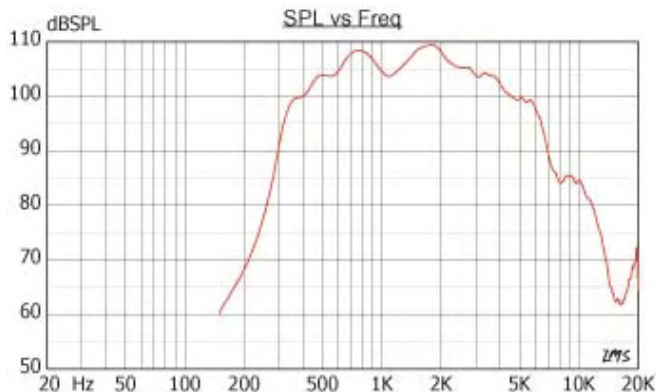
50/70/100 volt
 Combined Transformer:

Primary connections:
 6 : 7 50 Volt line
 6 : 8 70 Volt line
 6 : 9 100 Volt line

Secondary nominal
 tapings:
 1 : 4 20,0 W
 1 : 3 10,0 W
 2 : 4 6,0 W
 1 : 2 5,0 W
 3 : 4 2,0 W
 2 : 3 1,5 W

6 = White, 8= Green,
 9 = Red

1W/1m sine wave smooth 1/3 octave



Material / ColorPolyamide / RAL 7035
 Mounting.....Bracket
 Termination..... Inside screw connections
 Weight 2,5 kg
 IP-rating.....67
 Max. / min. amb. temp 150 °C / -50 °C
 Rated / max. power 20 W / 25 W
 SPL 1W/1m 110 dB
 SPL rated power 122 dB
 Effective freq. range..... 310 – 8000 Hz
 Dispersion (-6dB) 1kHz / 4kHz..... 115° / 30°
 Directivity factor, Q (2kHz).....9,3
 Options.....impedances, colors, labels

Installation, Operation and Maintenance Procedures

- When mounting the loudspeaker please ensure that it is re-assembled in the same manner in which it was received. Fasten bracket with 1-3 screws.
- To change the position of the loudspeaker please adjust the bracket (by loosening / tightening the screws) as required.
- For optimum performance, always use the correct voltage / power and operate within the frequency limits as stated.
- Do not open loudspeaker when energized.
- Fasten lid with a torque of 2 - 3 Nm.
- This loudspeaker is supplied with a 2 year warranty against defective workmanship.

1

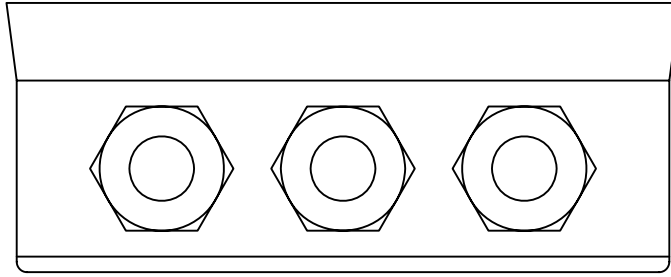
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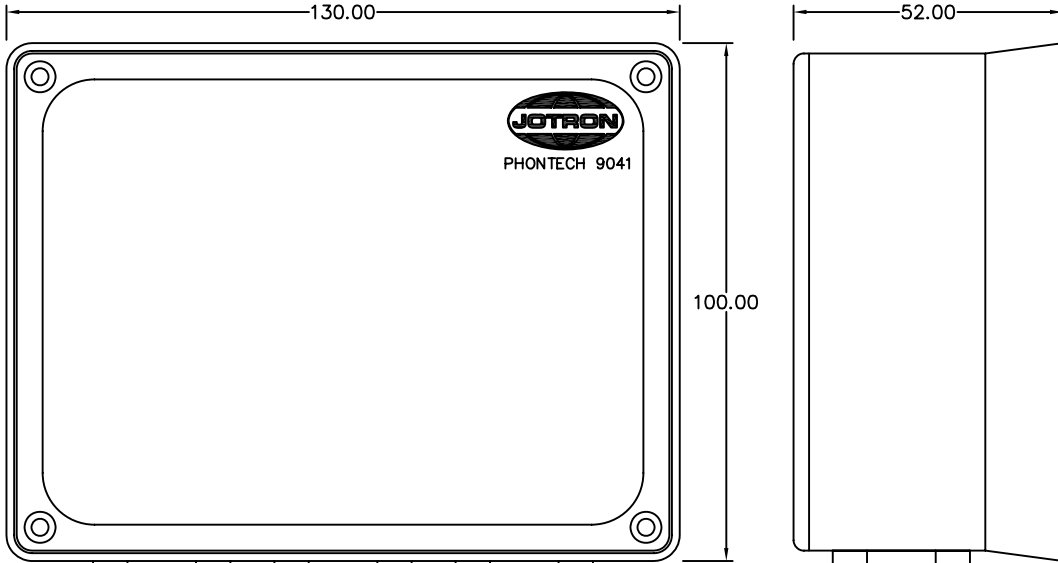
A

A



B

B

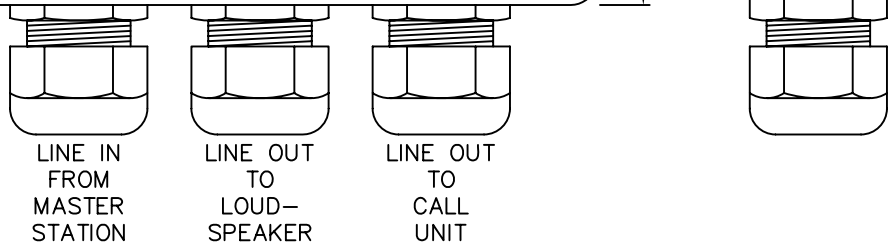


C

C

D

D



E

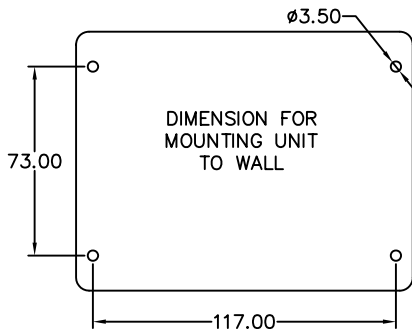
E

EQUIPMENT DATA:

MANUFACTURER : JOTRON PHONTECH AS	FIXING DETAILS : SEE INSIDE BOX
MODEL/TYPE : EX INTERFACE UNIT	ACCESS : FRONT
RACK/BOX SUPPL. : JOTRON PHONTECH AS	CABLE ENTRY : BOTTOM
RACK/BOX TYPE : NA.	GLAND TYPE : 3pcs. M20
MATERIAL : PC/ABS BLEND, ABS	PROTECTION IP : IP-56
COLOUR : RAL 9005/9006	POWER SUPPLY : FROM CENTRAL
WEIGHT OF UNIT : 0,30Kg.	POWER CONSUMP. : NA.
MOUNTING : TO WALL	HEAT DISSIPATION : NA.

F

F



REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.27	DVM COMPLETION	ASK		ASK
B	2010.05.07	DVM REVISION	ASK		ASK
A	2010.04.21	DEVELOPMENT	CD		CD



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TITLE: 9041, ABS - EX INTERFACE UNIT FOR SUBSTATIONS
MECHANICAL LAYOUT.

SIZE: A3	PAGE:
DRAWING No: 09908-006-ML	
FILE NAME: 09908-006-ML.DWG	

1

2

3

4

1

2

3

A

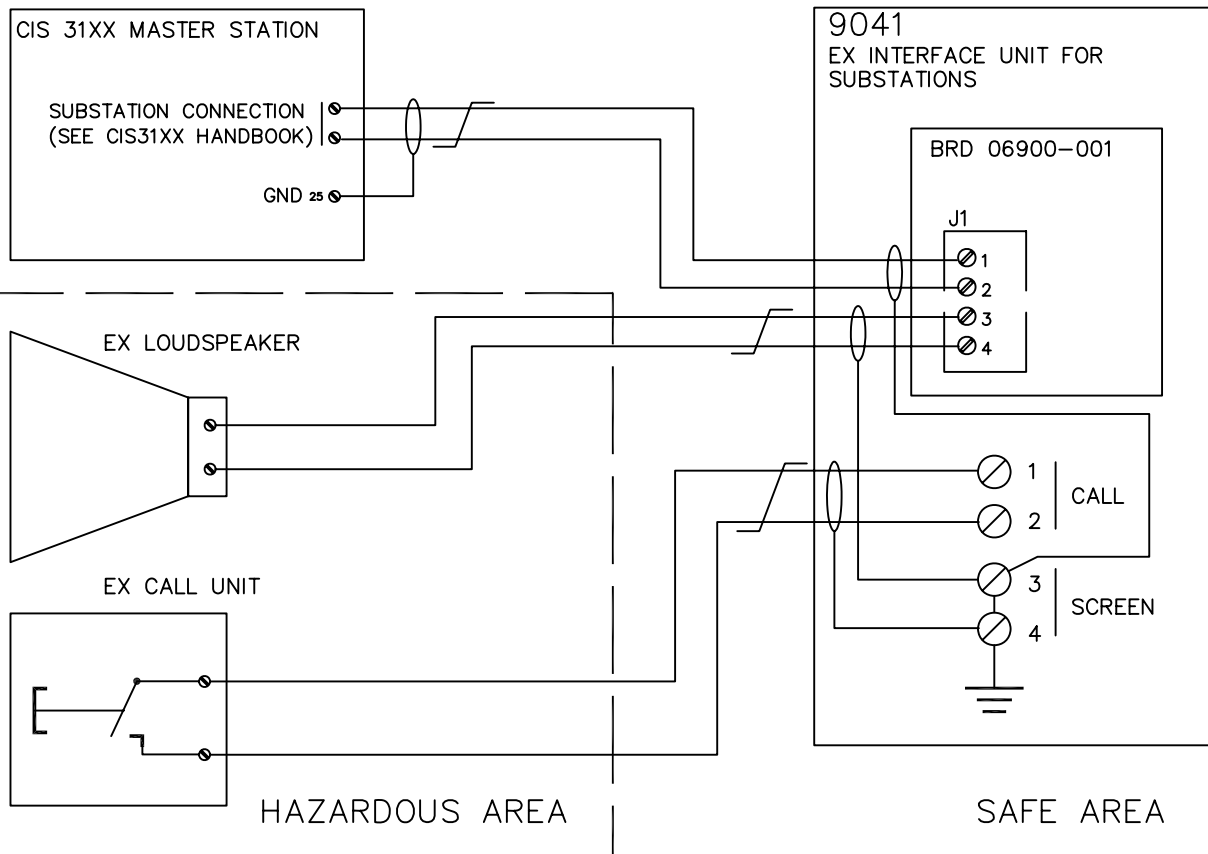
A

B

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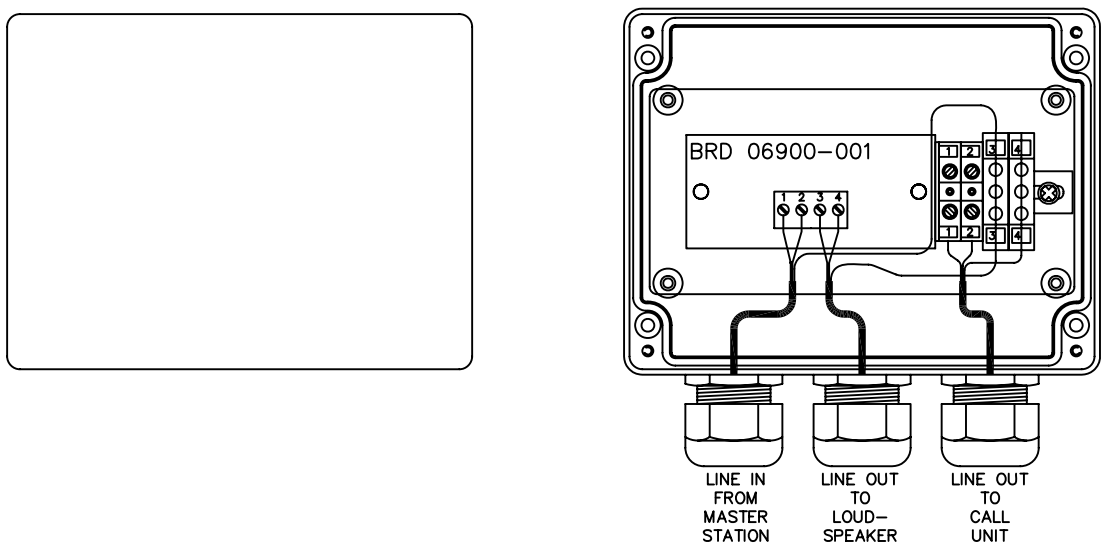
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C



D

D



E

E

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
0	2010.09.27	DVM COMPLETION	ASK		ASK
B	2010.09.22	DVM REVISION	ASK		ASK
A	2010.04.20	DEVELOPMENT.	ASK		ASK



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F

F

TITLE: 9041, ABS – EX INTERFACE UNIT FOR SUBSTATIONS
EXTERNAL CONNECTION

SIZE: A4 UED No:
DOC. No: 09908-006-EC
FILE NAME: 09908-006-EC.DWG

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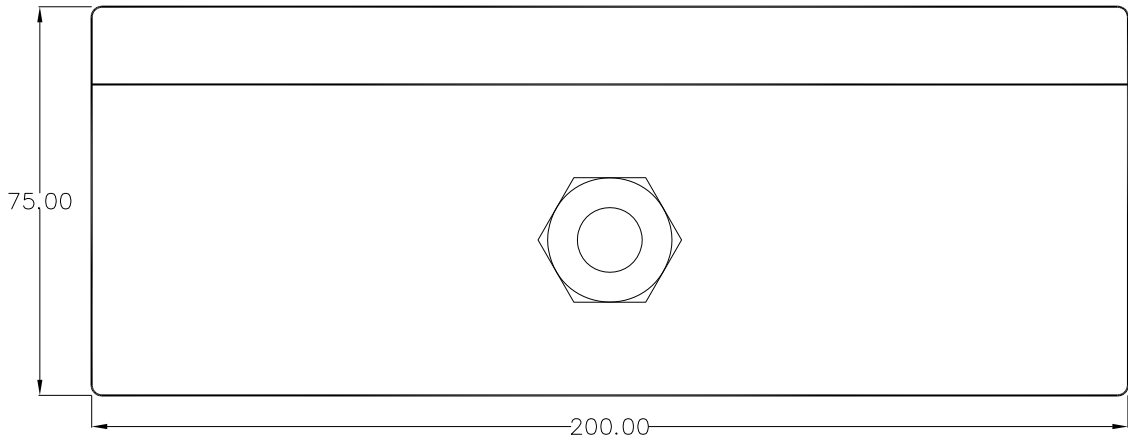
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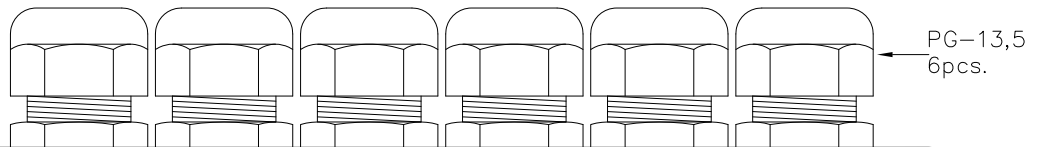
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1 2 3 4

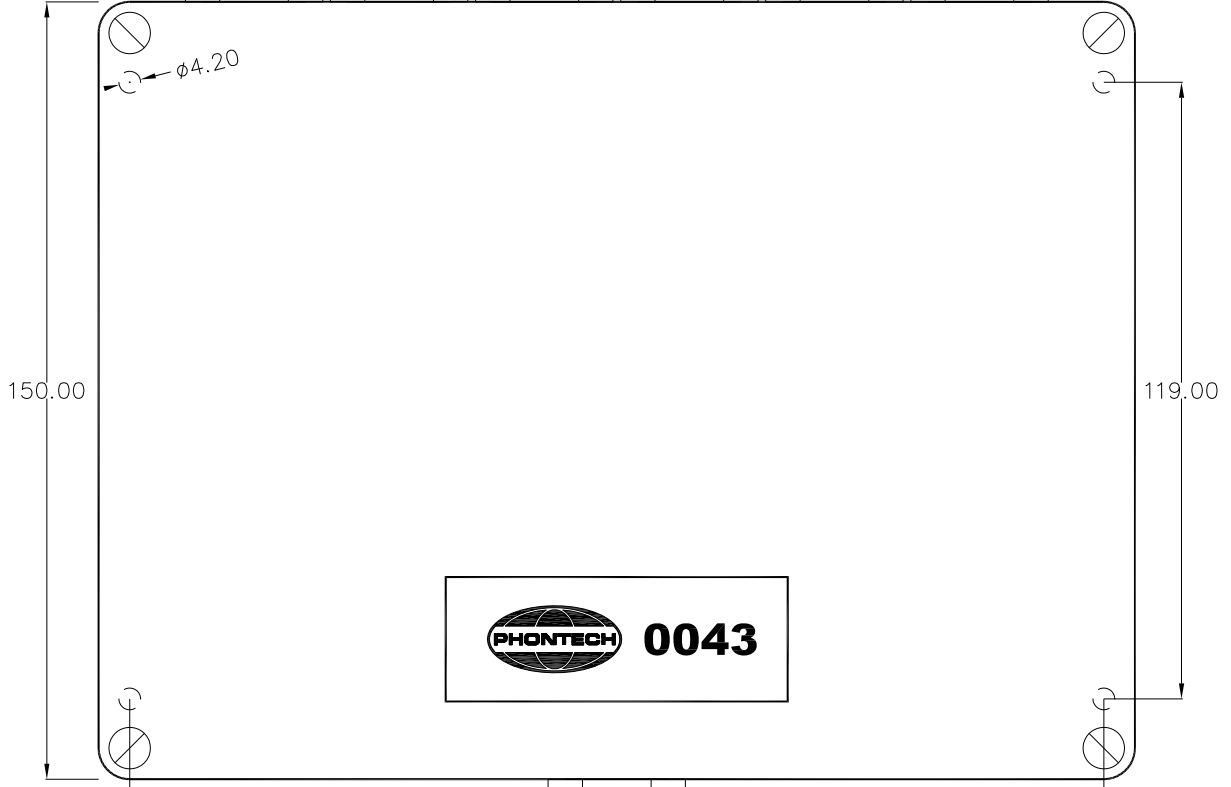
A



B



C



D

E

F

REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	03.10.2000	CHANGE ORDER No.798	R.F.	AHJ	AHJ
0	11.02.1994	AS BUILT.	R.F.	ASk	AHJ

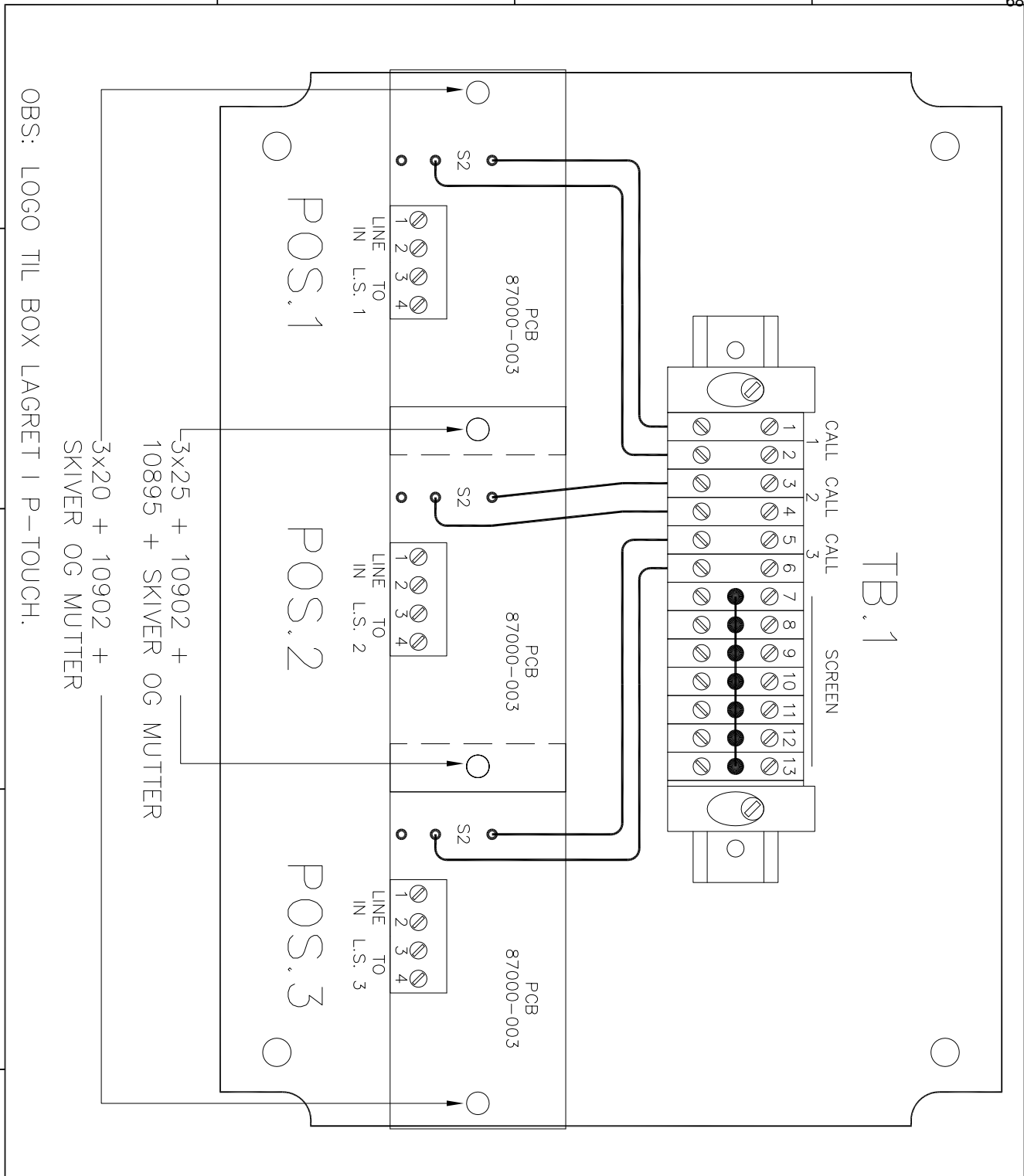


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TITLE: EXTERNAL LOUDSPEAKER INTERFACE.
0043.
MECHANICAL LAYOUT.

SIZE:	A3	UED No:	
DOC. No:	94000-003-ML		
FILE NAME:	94000-003-ML.DWG		

1 2 3 4



REV No.	ISSUE DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
1	03.10.2000	CHANGE ORDER No.798	R.F.	AHJ	AHJ
0	11.02.1994	AS BUILT.	R.F.	ASk	AHJ



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TITLE: EXTERNAL LOUDSPEAKER INTERFACE.
0043.
INTERNAL WIRING.

SIZE: A4 UED No:
DOC. No: 94000-003-IW
FILE NAME: 94000-003-IW.DWG



DNH^{AS}

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**DNH WW Ltd.
England**

Phone:.....(44) 1908 275 000
Fax:.....(44) 1908 275 100
E-mail:.....dnh@dnh.co.uk

DSP-15 EExmN(T)

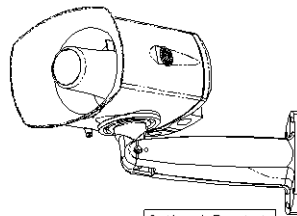
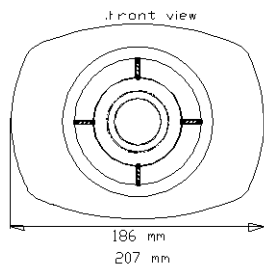
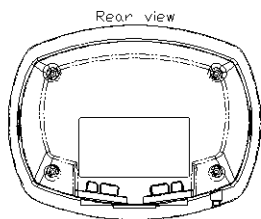
**DNH GmbH
Germany**

Phone:.....(49) 040 6569 30-0
Fax:.....(49) 040 6569 30-30
E-mail:.....dnh@dnh.de

**DNH
Speakers Inc.
USA**

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Fax:.....(1) 484 494 5793
E-mail:.....dnh@dnhspeakers.com

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Optional Bracket
Antistatic plastic

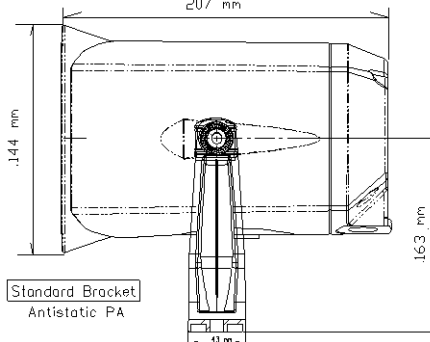
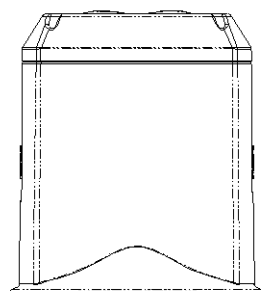
Transformer:
100 V line

Primary nominal tapings:
Cores in cable are no. 1-4

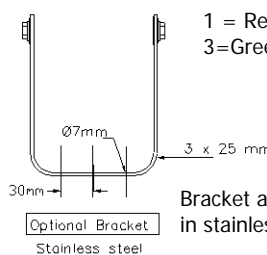
1 : 2	15,0 W
2 : 3	8,0 W
3 : 4	4,0 W
1 : 3	3,0 W
2 : 4	1,5 W
1 : 4	0,8 W

1 = Red, 2=Yellow
3=Green, 4 = Blue

1 x M20 IECEx approved cable gland and 1 x IECEx approved blind plug.



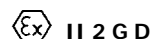
Standard Bracket
Antistatic PA



Optional Bracket
Stainless steel

Bracket and all outside nuts and screws in stainless steel.

Certified by/ Certification Code/ Number: NEMKO / Ex dema IIB + H2 T4 / IECEx NEM 05.0005
Certified by/ Certification code/ Number: NEMKO / Ex dema IIC T4 / IECEx NEM 05.0005



1W/1m sine wave smooth 1/3 octave IIB+H₂ version



	IIB	IIC
Material / Color	Anti-static PA / Black	
Mounting	Bracket	
Termination	e-chamber, screw terminals	
Weight w/ transformer	2,2 kg	
IP-rating	67	
Max / min amb temp	55°C / -50°C	
Rated / max. power	15 W / 15 W	
SPL 1W/1m	105 dB	102 dB
SPL rated power	116 dB	113 dB
Effective freq range	410 – 7000 Hz	500-6000
Dispersion (-6dB) 1kHz / 4kHz	200° / 50°	105° / 35°
Options	Impedances, colors, labels	

Installation, Operation and Maintenance Procedures

- When mounting the loudspeaker please ensure that it is re-assembled in the same manner in which it was received. Fasten bracket with 1-3 screws.
- To change the position of the loudspeaker, please adjust the standard bracket (by loosening / tightening the screws) as required.
- DSP-15 EExmN/T IECEx can be supplied with 3 different bracket systems, according to customer requirements.
- DSP-15EExmN/T IECEx can be delivered as 25W version with transformer.
- For optimum performance, always use the correct voltage / power and operate within the frequency limits as stated.
- Use only certified/specified cable glands and blanking plugs.
- Do not open loudspeaker when energized.
- Fasten lid with a torque of 2 - 3 Nm.
- This loudspeaker is supplied with a 2 year warranty against defective materials and workmanship.



Jotron AS
Jotron UK Ltd.
Jotron Phontech AS
Jotron Consultas AS
Jotron Asia Pte. Ltd.
Jotron USA, Inc.
UAB Jotron



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