

SMART

PA SYSTEM (MODEL-MCS III)

(CENTRAL AMPLIFIER DESIGN CONCEPT).

SMART INDUSTRIAL PA SYSTEM MCS-III Central Amplifier Design Concept INDUSTRIAL PA SYSTEM has unique feature of Single button Loudspeaker Paging and Private Talkback with dial keypad for Selective Calling. The system has two separate channels viz Single Common Loudspeaker Page Channel and Multiple Private Intercom channels. Loudspeaker page Channel allows for locating individuals anywhere in the plant. Two-way private communication then occurs by using the Multiple Private Intercom Channel feature. The PLANT EPABX Interface allows user to make and receive telephone calls to and from the outside world.

SMART INDUSTRIAL PA SYSTEM MCS-III is essential for growing organizations because of its unique features, flexibility and compatibility with PLANT EPABX (The backbone of every establishment communication.)



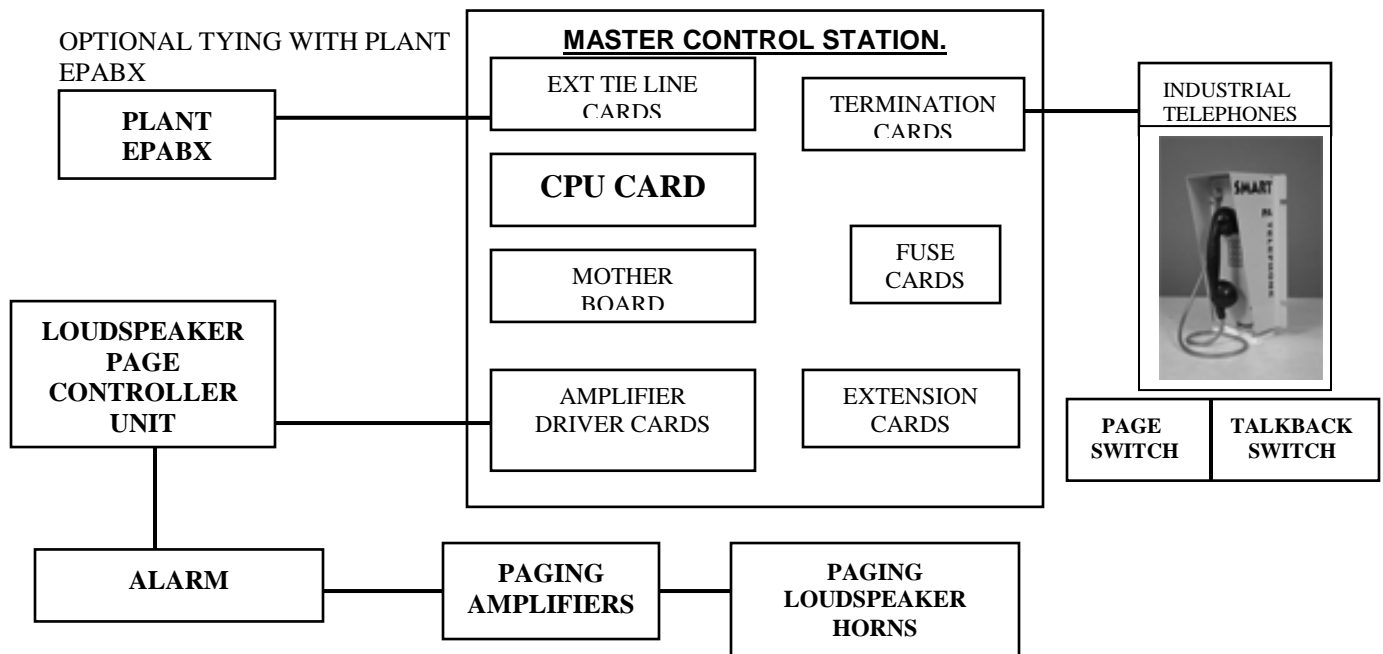
LOUD SPEAKER PAGE CHANNEL:

- LOUD SPEAKER PAGING.
- Locating and contacting people in a zone or all over the plant by press of a button with ease.
- The loudspeakers in parallel line are formed as zones.
- Individual Zone's or all Zones can be contacted by press of a button from OC.
- ALWAYS ALL CALL from field station by press of a button.

PRIVATE INTERCOM CHANNEL:

- Multi Channel point to point communication.
- Selective communication by dialing individual access code.
- Talkback during or after paging by called person in private mode by press of a button.

SYSTEM BLOCK DIAGRAM



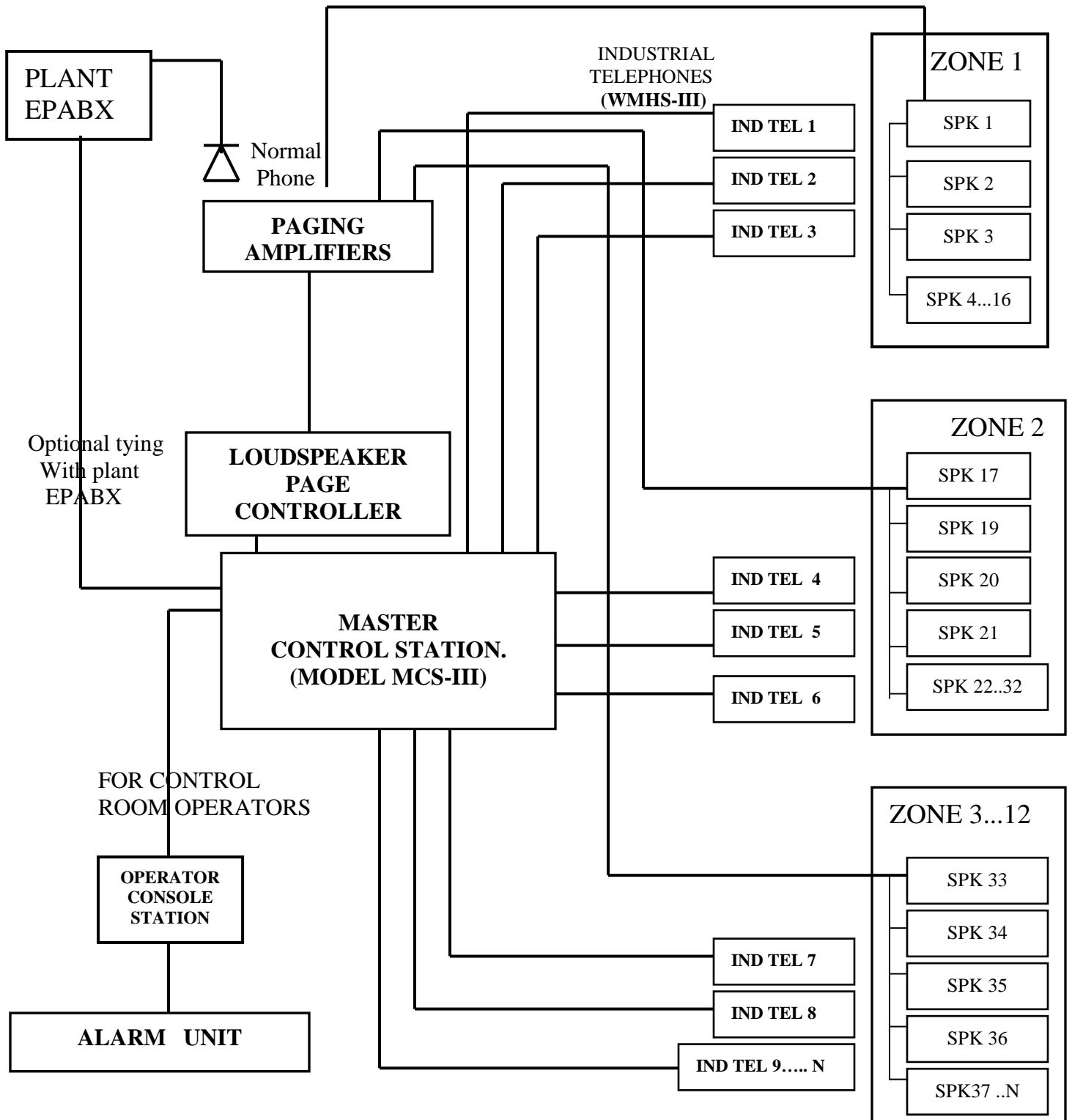
SMART CHOICE

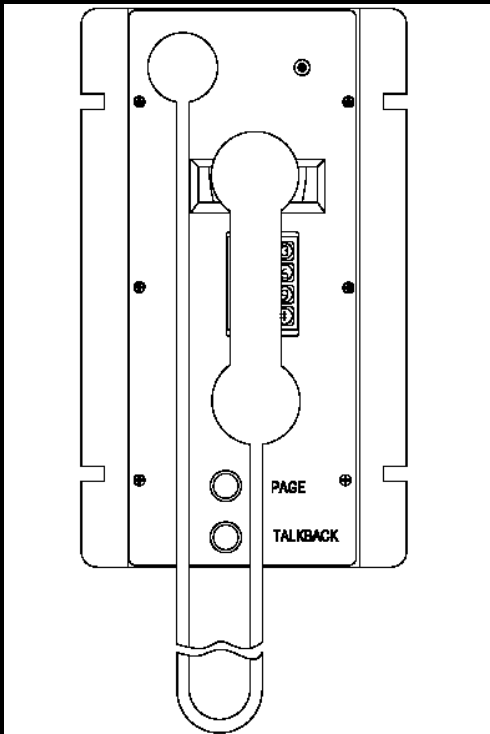
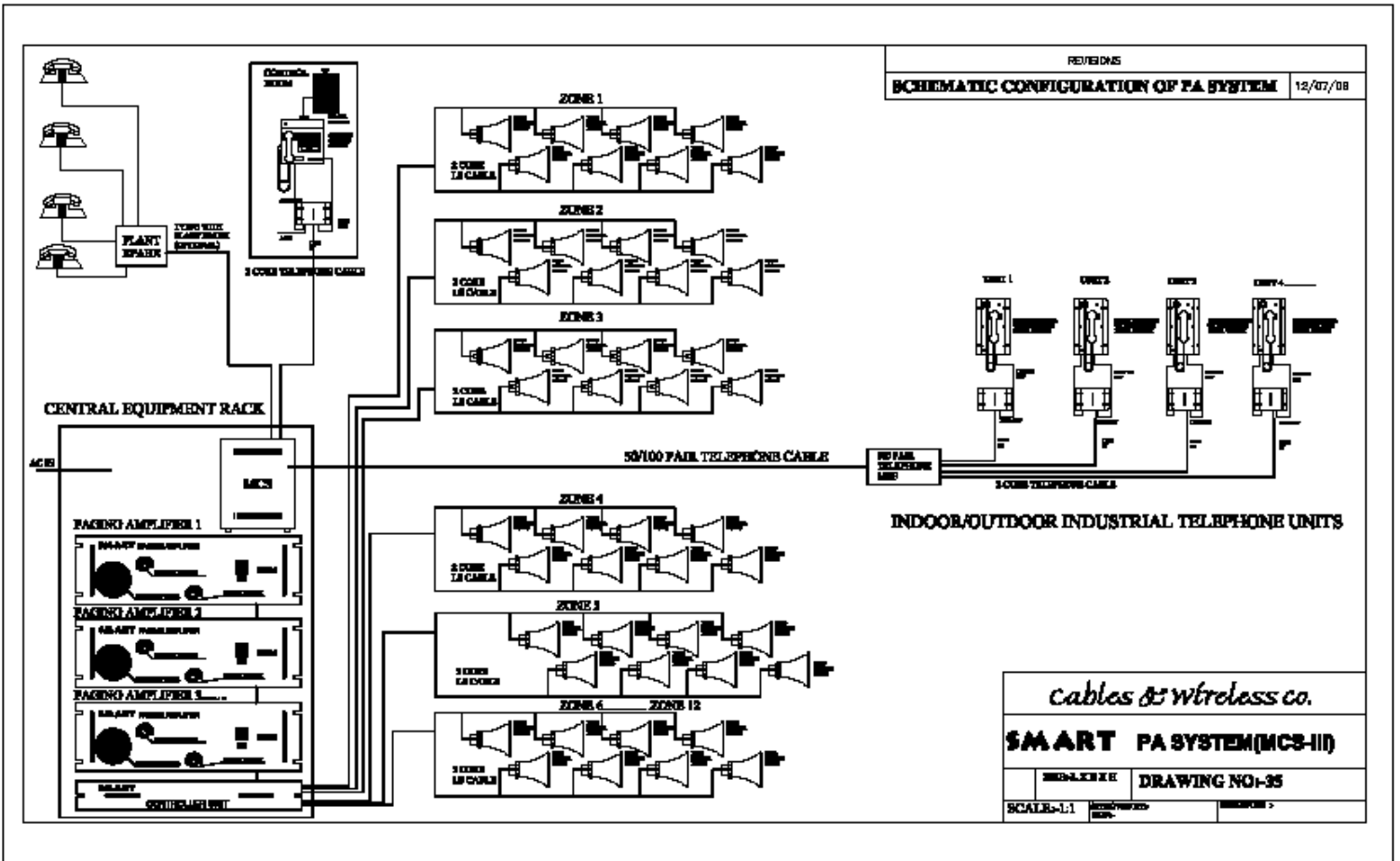
- **SINGLE LOUD SPEAKER PAGE CHANNEL.**
- **MULTIPLE PRIVATE INTERCOM Channel's.**
- SMART Industrial Telephone model **WMHS-IIPT, WMHF-IIPT** are used AS FIELD UNITS.
- SINGLE BUTTON ALL PAGE CALL FROM FIELD/OC
- SINGLE BUTTON PRIVATE INTERCOM COMMUNICATION DURING OR AFTER PAGE CALL FROM FIELD / OC.
- MULTI CHANNEL SELECTIVE CALLING using dial keypad.
- Direct access buttons for making LOUD SPEAKER page call from OC
- Any number of Loudspeaker's can be connected by using **SMART PAGING AMPLIFIERS.**
- System designed for UPTO 12 LOUDSPEAKER LINES (ZONES).
- 100 V LMT based Loudspeakers installed in field for long distance operation.
- **NO NEED OF PRE AMPLIFIERS.**
- **NO NEED OF BULKY RELAY BASED PAGE CONTROLLERS.**
- SMART MICROCONTROLLER BASED AMPLIFIERS AND LOUDSPEAKER CONTROLLERS.
- SMART AMPLIFIERS are always in off mode. Activates only during paging.
- Increase in the life of Amplifiers and SMARTER WAY to operate the system.
- **BI DIRECTIONAL paging calls** to all loudspeaker lines.
- **BI DIRECTIONAL paging call** to individual loud speaker line.
- **BI DIRECTIONAL call** to individual SMART INDUSTRIAL TELEPHONES.
- SMART INDUSTRIAL TELEPHONES operate on line voltage
- **SMART PA TELEPHONES** can also be installed with the SMART MCS giving all the Features of distributed amplifiers.

SMART OPTIONS:

- NON KEYPAD FRONT DIAL VERSION
- AUTO PAGE ON HANDSET LIFT
- SMART PA TELEPHONE WITH MINI SPEAKER AS FIELD STATION FOR INDIVIDUAL PAGE CALL

MCS (CENTRAL AMPLIFIER SYSTEM).
USER DESIGN BLOCK DIAGRAM.





**SMART INDUSTRIAL
TELEPHONES
(MODEL WMHS- IIPT)**



**SMART INDUSTRIAL
TELEPHONES
(MODEL WMHS- IIPT)**

WORKING PROTOCOL: -

CONTROL ROOM TO ALL PAGE CALL (ALL PAGE CALL): -

Lift the handset, Press ALL CALL BUTTON from OPERATOR CONSOLE of control room. All amplifiers get activated thus activating **all the loudspeakers**. Announcement made from handset of operator console is heard over all loudspeakers. The concerned person presses the TALKBACK switch from any of the nearest INDUSTRIAL TELEPHONE for private communication with the operator freeing the PAGE CHANNEL for next page call.

CONTROL ROOM TO ZONE (ZONE PAGE CALL): -

Lift the handset, Press any zone page call button i.e, ZONE 1/ZONE 2/ZONE 3 / ZONE 4/ZONE 12 BUTTON from OPERATOR CONSOLE unit. The amplifier of associated zone activates; thus activating all the **loudspeakers in that zone**. Announcement made from handset of the operator console is heard over all loudspeakers of that zone. The concerned person presses the TALKBACK switch from any of the nearest INDUSTRIAL TELEPHONE for private communication with the operator freeing the PAGE CHANNEL for next page call.

CONTROL ROOM TO ANY INDUSTRIAL TELEPHONE (SELECTIVE CALLING)

Dial the individual extension No of INDUSTRIAL TELEPHONE. An electronic ringer is initiated giving a ringer tone. Communication is established in private mode when called party lifts the handset of the called INDUSTRIAL TELEPHONE. Replacing the receiver on cradle will reset the INDUSTRIAL TELEPHONE. The communication is in the private mode.

INDUSTRIAL TELEPHONE TO ALL PAGE CALL (ALL PAGE CALL): -

From the any INDUSTRIAL TELEPHONE press the PAGE button. All amplifiers get activated there by activating all the loudspeakers. Announcement made from the mouthpiece of the handset of the INDUSTRIAL TELEPHONE UNIT, is heard over all loudspeakers. The concerned person presses the TALKBACK switch from any of the nearest INDUSTRIAL TELEPHONE for private communication freeing the PAGE CHANNEL for next call.

INDUSTRIAL TELEPHONE TO CONTROL ROOM (SELECTIVE CALLING)

Lift the handset of nearest INDUSTRIAL TELEPHONE dial the DIRECT ACCESS CODE (OR extension No) for control room operator console unit, Call hunting feature will give access to any of the free available line of operator console. (Feature available only when using more than one Operator Console's)

INDUSTRIAL TELEPHONE TO INDUSTRIAL TELEPHONE (SELECTIVE CALLING)

From any INDUSTRIAL TELEPHONE dial extension number of any other INDUSTRIAL TELEPHONE. An electronic ringer is initiated giving a ringer tone. Communication is established in private mode when called party lifts the handset of the called INDUSTRIAL TELEPHONE. Replacing the receiver on cradle will reset the INDUSTRIAL TELEPHONE. The communication is in the private mode.

CENTRAL EQUIPMENT RACK IS FITTED WITH:-

- SMART MASTER CONTROL STATION (MODEL MCS-III): -
- PAGING AMPLIFIER MODULES (MODEL EXA PA 250)
- LOUDSPEAKER PAGE CONTROLLER UNIT (MODEL PCU)

8.0 General features of Equipment's in the CENTRAL EQUIPMENT RACK

SMART MASTER CONTROL STATION (MODEL MCS-III): -

The Master Control Station is 100% non-blocking architecture and is based on TDM/PCM technology. With improved speech quality, minimum noise interference & the distortion. The software related to operation of the system and all features of the system are programmed in the MASTER CONTROL STATION. The system is designed for MINIMUM 24 ports.

FEATURES:-

- Main CPU card.
- Industrial telephone connection cards.
- Operator Console
- Main termination card.
- Motherboard card.
- PAGE CALL from field stations can be possible
- SELECTIVE CALL FACILITY.
- UPTO 12 Numbers of predefined Loud Speaker lines (zones)
- Minimum 24 industrial telephone ports Expandable Up to 112 ports
- Installation in multiple of 16 line TELEPHONE CARDS possible.
- Long loop supported covering large distance.
- Operates on 220 V AC/110 V AC (predefined).
- Line voltage 40 V
- Tone dialing
- Can be patched with the existing PLANT EPABX using TRUNK LINES OF plant EPABX.
- Up to 4 operator consoles can be connected

SMART PAGING AMPLIFIER MODULES (MODEL EXA PA 250):

The paging amplifiers are fully solid state type & is of high reliability with built in over load protection, short circuit protection, open circuit protection and inductive/capacitive loading circuitry. The Amplifier design eliminates the need of Pre Amplifier in the system.

Each amplifier module is of 250 watts (RMS). Each Amplifier is designed to handle Max 10 loudspeakers. The increase in speakers load can be handled by adding additional Amplifiers in the system. The system operates on a line voltage of 100 Volt to facilitate the use of loudspeaker at remote locations..

FEATURES:-

- Type: solid state design
- Short circuit protection & over load protection
- Power requirement: 220 V AC
- LMT based amplifiers
- 250 watt RMS output
- Fuse protection from overload
- Hot swappable connectors
- Power indications
- Volume controls (master and monitor)
- **NO NEED OF PRE AMPLIFIERS.**

LOUDSPEAKER PAGE CONTROLLER UNIT (MODEL PCU)

The SMART LOUDSPEAKER PAGE CONTROLLER UNIT is microprocessor based unit for controlling the operations of the Amplifiers and the Loudspeaker relays.

FEATURES;-

- Controls the switching of amplifiers
- Input from Alarm signals & broadcast through 100V line.
- Relay circuit to handle 100 V line feed to loudspeakers
- Operates on 220 / 110 V AC

SMART MASTER OPERATOR CONSOLE STATIONS (MODEL DTHS-III): -

The SMART MASTER OPERATOR CONSOLE STATION is digital desktop unit and is installed in the control room.

FEATURES;-

- ❑ OPERATING ON 220 V AC
- ❑ KEYPAD FOR INDIVIDUAL DIALING
- ❑ DIRECT ZONE ACCESS KEYPAD
- ❑ FULL DUPLEX COMMUNICATION
- ❑ HANDSET TYPE
- ❑ PAGING INDICATION LED
- ❑ TALK BACK SWITCH
- ❑ PRIORITY PAGE OVERRIDE SWITCH
- ❑ INTEGRATED ALARM UNIT WITH KEY LOCK SWITCH

OPERATOR CONSOLE BUILT IN ALARM UNIT

- Electronic filters are provided
- Alarm Push Button
- Keylock switch for alarm On & Off
- Predefined timer based Alarm tones.
- Different User Predefined Multiple Tones

SMART INDUSTRIAL TELEPHONE (MODEL WMHS-III PT):-

The SMART INDUSTRIAL TELEPHONES are column / wall mounted type with integrated canopy design and special noise canceling feature for harsh and noisy areas.

FEATURES:-

- Simple Installation.
- Simple Operation.
- Telephone line powered
- DIRECT PAGE & TALKBACK BUTTONS
- One piece waterproof non tactile keypad.
- Magnetic reed hook-switch reduces moving parts subject to wear.
- 16 gauge rugged steel powder coated construction.
- Environment Protected.
- Single PCB design for plug n play operation.
- Easy troubleshooting ensuring minimum downtime.
- EXTERNAL contact to CONNECT SMART LOUDRINGER/FLASHER.
- Heavy industrial handset & cord, equipped with noise canceling microphone to eliminate the acoustic feedback during paging.

SMART LOUDSPEAKERS (MODEL LSOD):-

SMART LOUDSPEAKER HORNS are Outdoor weatherproof loudspeaker horns for 25 Watts (RMS)

- Sound pressure level 107 dB
- Reentrant type loudspeakers
- ABS constructions
- 'C' clamp for Mounting
- Max power handling capacity :-25Watt (rms)

SMART INDOOR BOX SPEAKERS (MODEL LSIN):-

Indoor speaker box with metallic construction – 8 watts (RMS)

- Max power handling capacity:-10 W
- Sound pressure level ; -90 dB
- Fitted with the master calling stations
- 'L' clamp for Mounting.

9.0 PATCHING WITH PLANT EPABX

The SMART MCS-III can be patched with PLANT EPABX using trunk lines of PLANT EPABX connected to the extension of MCS

10 POWER RATINGS OF VARIOUS EQUIPMENTS FOR UPS LOAD;-

SMART MASTER CONSOLE STATION (MODEL MCS-III):-
POWER SUPPLY UNIT

MCS FOR 24 PORTS

160 VA (RMS) PEAK 240 VA

SMART OPERATOR CONSOLE STATION (MODEL DTHS-III) 20 VA (RMS) PEAK 25 VA

SMART PAGING AMPLIFIER MODULE(MODEL EXA PA 250) 320 VA (RMS) PEAK 450 VA

11.0 CABLING DETAILS

NON SPECIALITY, NON CRITICAL CABLES

SMART MASTER CONTROL STATION (MODEL MCS-III): -

- 0.5 mm, 1 PAIR, PVC insulated, TELEPHONE CABLE FROM MCS TO EACH LOCATION.

SMART INDUSTRIAL TELEPHONES (MODEL WMHS-IIPT): -

- 0.5 mm, 1 PAIR, PVC insulated, TELEPHONE CABLE for EACH SMART INDUSTRIAL TELEPHONES FROM MCS.

SMART MASTER OPERATOR CONSOLE STATION(MODEL DTHS-III) : -

- 0.5 mm, 2 PAIR, PVC insulated, TELEPHONE CABLE for SMART MASTER OPERATOR CONSOLE UNIT FROM MCS.
- 1.5 sq mm 3 CORE, ATC, PVC insulated, overall PVC sheathed POWER cable for SMART OPERATOR CONSOLE UNIT

SMART PAGING AMPLIFIERS (MODEL EXA PA 250) : -

- 0.75 mm, 2 core, ATC, PVC insulated, flexible cable for LOUDSPEAKER HORNS FROM SMART PAGING AMPLIFIERS.

TECHNICAL SPECIFICATIONS; ELECTRICAL, MECHANICAL & ENVIRONMENTAL

TECHNICAL SPECIFICATIONS (MCS): -

Electrical : -

Power Source	220 volts
TELEPHONE line	40 VOLTS.
Power consumption	< 100 Watts.
Insulation	600 v for 3 min between power source & Telephone line.
Ringer Voltage	50 VAC (100 V PP).

Mechanical Specifications : -

Dimensions	rack mounted
Weight	8.5 Kgs.
Construction	16 gauge Powder Coated Steel Body.
Standard mounting	Vertical wall / desktop.

Environmental : -

Moisture Resistance	0 to 95% humidity with PCB conformal coated.
Temperature Range	0 to +60C.

INDUSTRIAL TELEPHONE (MODEL WMHS-IIIPT): -

Electrical requirements

Ringer sensitivity	40 – 100 V @ 16 – 25 Hz.
Line voltage	24 – 56 VDC.
Loop current	20 - 120 mA.
Connection method	PCB terminal block.
FUSE	0.25 AMP 2AG FAST BLOW.

Environmental

Temperature	0 to +60 C.
Humidity	0 to 95% Rh non-condensing.
DUSTPROOF ENCLOSURE	FULLY GASKETTED.

Mechanical

Hook switch (magnetic reed) life	>1 000 000 operations.
Body construction	16 SWG steel, powder coated.
Dimensions	360 x 160 x 180 mm.
Net weight	5 kgs.
Handset material	High impact ABS.
Microphone	Noise reducing dynamic.
STANDARD MOUNTING	VERTICAL WALL.
Hardware material	Stainless steel.
Handset cord	Stainless steel.

MASTER OPERATOR CONSOLE STATION (MODEL DTHS-III): -

Electrical : -

Power Source	220 VAC.
Power consumption	< 5 Watts.
Insulation	600 v for 3 min between power source & Telephone line.
Microphone	Noise canceling dynamic (120 ohms)

Mechanical Specifications: -

Dimensions	280 X 200 X 90 (in mm).
Weight	2 Kgs.
Construction	18 gauge Powder Coated Steel Body.
Standard mounting	Vertical wall / panel.

Environmental: -

Moisture Resistance	0 to 95% humidity with PCB conformal coated.
Temperature Range	0 to +60C.
Dust resistance	Dustproof enclosure.

LOUDSPEAKER HORN (MODEL LSOD) :-

Electrical performance: -

Audible range frequency response 300 – 3400 Hz.
Audio output max 107 dB @ 1 meter.

Electrical specifications: -

Coil resistance. 6 Ohm.
Coil impedance@ 1 Khz 8 Ohm.
Rated output watt RMS 25 Watts.
Sound level@ 30 watt RMS 70 dB.

Environmental: -

Temperature 0 to +60 C.
Humidity 0 to 95% Rh non-condensing.
Enclosure Dustproof fully gasketed.

Mechanical: -

Body ABS.
Dimensions 240 x 170 x 250 mm.
Net weight kgs .8 KGS.
Standard mounting 'C' Clamp Type.

PAGING AMPLIFIER MODULE (MODEL EXA PA 250) :-

ELECTRICAL REQUIREMENT :-

Power Source 220 volts / 110 volts AC (SWITCH ABLE).
Power consumption 300 Watts.
Amplifier output 250 Watts (RMS).
Horn Speakers 60 watts, 8 ohms X 10 nos

ELECTRICAL SPECIFICATIONS: -

Output 100 Volt Audio line.
Isolation 1.5 KV between PRI & SEC for 15 Min.
Protection Input fuse (1A fast blow).

ENVIRONMENTAL: -

Temperature 0 to +60 C.
Humidity 0 to 95% Rh non-condensing.
Enclosure Dustproof fully gasketed.

MECHANICAL: -

Body 18 SWG steel.
SURFACE FINISH POWDER COATED.
Net weight 12 kgs.
Standard mounting Vertical wall.

INDUSTRIAL COMMUNICATIONS SIMPLIFIED .

cables & wireless co.

FF 75 RAJAT ARCADE, MIDC T-POINT,
AMRAWATI ROAD, WADI,
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“(Specifications and description subjected to change without prior notice)”