

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.)



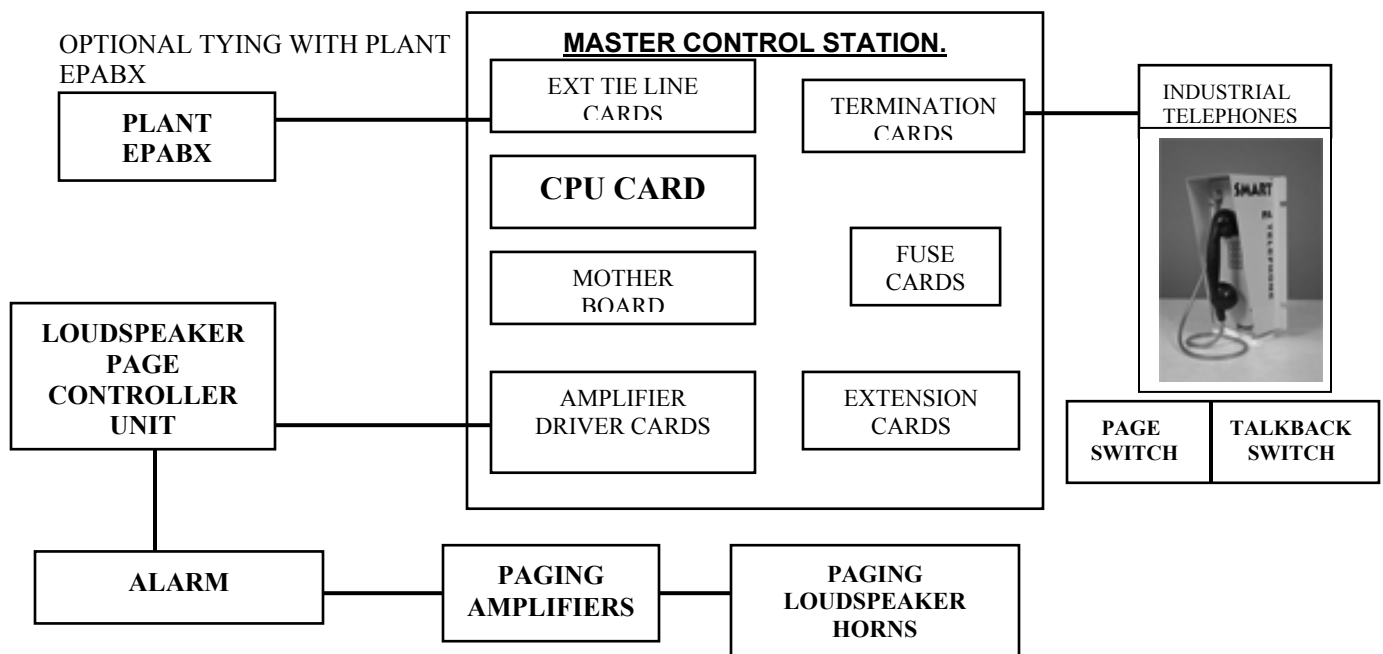
LOUD SPEAKER PAGE CHANNEL:

- 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



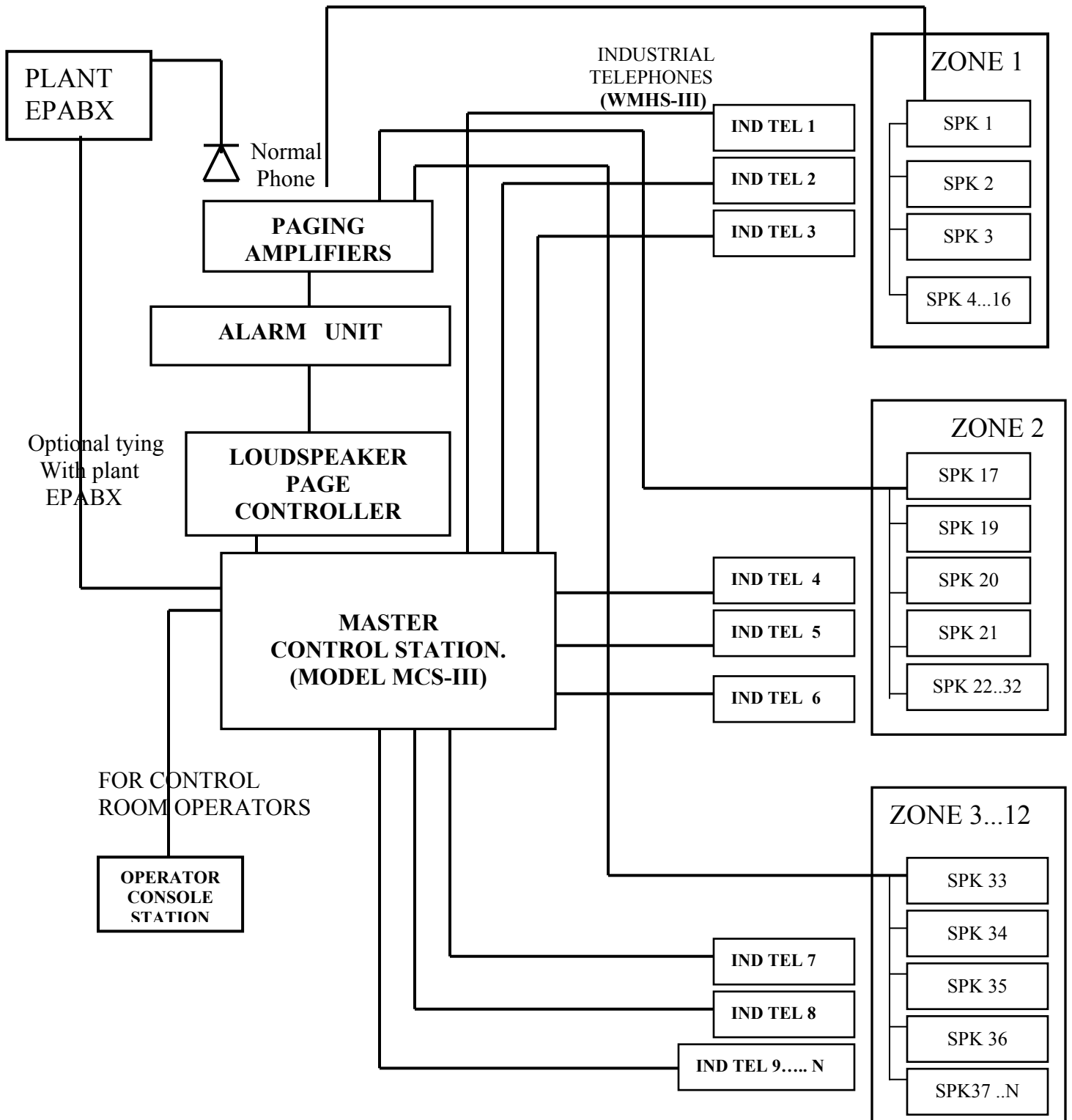
SMART CHOICE

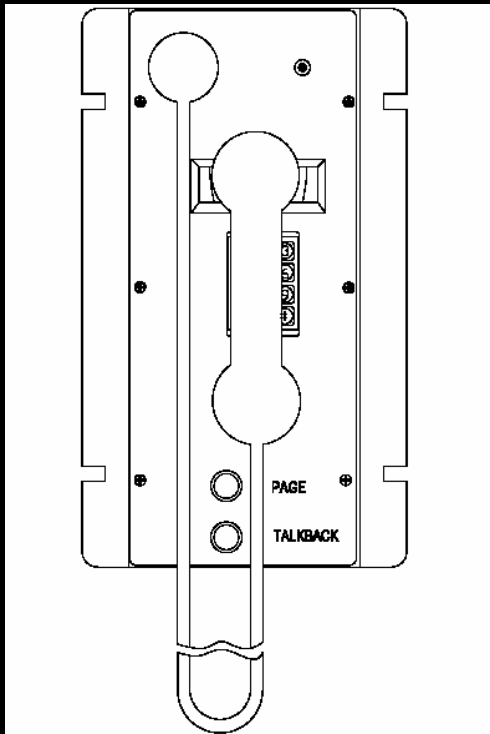
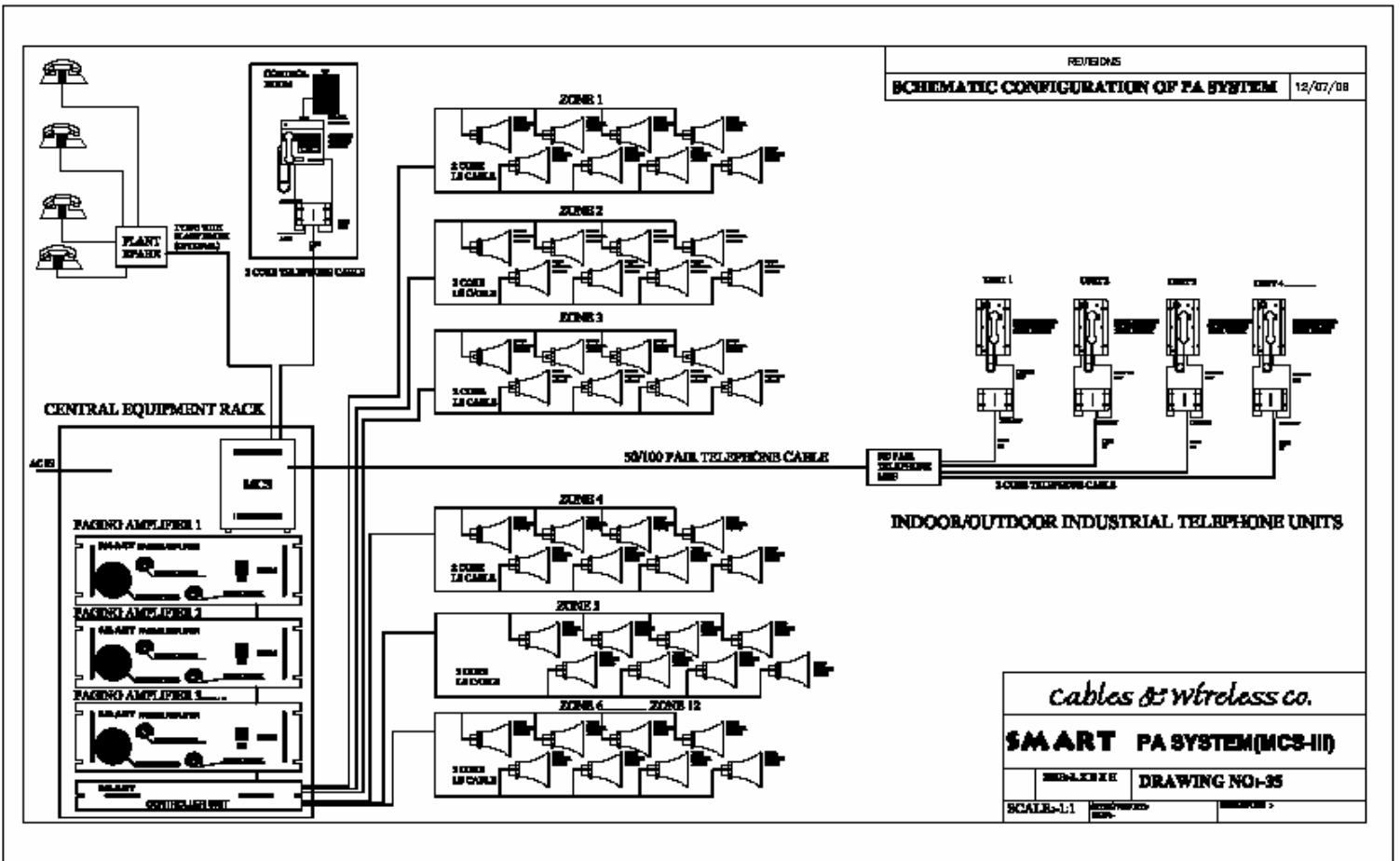
- **SINGLE LOUD SPEAKER PAGE CHANNEL.**
- **MULTIPLE PRIVATE INTERCOM Channel's.**
- SMART Industrial Telephone model **WMHS-III, WMHF-III** are used AS FIELD UNITS.
- SINGLE BUTTON ALL PAGE CALL FROM FIELD/OC
- SINGLE BUTTON PRIVATE INTERCOM COMMUNICATION DURING OR AFTER PAGE CALL FROM FIELD / OC.
- 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 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
- USER DEFINED ZONES AND AMPLIFIER RATINGS

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





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



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

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 ZONE PAGE CALL (ZONE PAGE CALL): -

From the any INDUSTRIAL TELEPHONE dial the CODE for zone call. The associated amplifier gets activated there by activating all the loudspeakers connected to the amplifier. Announcement made from the mouthpiece of the handset of the INDUSTRIAL TELEPHONE UNIT, is heard over all loudspeakers. The concerned person dials the TALKBACK code from any of the nearest INDUSTRIAL TELEPHONE of that zone for private communication even while or after paging is ongoing.

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.

19" 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 CPU)
- POWER PANEL
- ALARM UNIT (MODEL AU)

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 & tie line card
- Main termination card.
- Motherboard card.
- PAGE CALL from field stations can be possible
- SELECTIVE CALL FACILITY.
- 12 Numbers of predefined Loud Speaker lines (zones)
- Minimum 16 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 12 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 CPU):-

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

POWER PANEL

The Power supply panel is provided for providing supply to equipments which is fitted in the 19" central equipment rack with

FEATURES:-

- 220 V AC in from MAINS/UPS(optional)
- Short circuit protection
- AC out to
 - MCS
 - Paging Controller Unit
 - Alarm Unit
 - Paging Amplifier modules

SMART ALARM UNIT (MODEL AU):-

The SMART ALARM UNIT is fully solid state & equipped with plug in module connected to the power amplifiers which generates different types of tones & alarms of different frequencies operating for a predefined time with auto cutoff feature.

FEATURES:-

- Operates on 220 V AC
- Output signal of 20-40kHz(adjustable frequency levels)
- Electronic filters are provided
- Different tones between 400-5000 Hz
- Alarm Initiate button
- Alarm cancel button
- Priority control (predefined)

SMART OPERATOR CONSOLE STATIONS (MODEL DTHS-II): -

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

FEATURES:-

- Noise canceling type ABS Handset for communication.
- 12 ZONE Page call switches
- All CALL page switch
- One-piece waterproof non-tactile keys for paging & selective calling
- Connect ,release & flash button to initiate communication
- Talkback button for point to point communication
- Full duplex telephony type communication
- In built amplifier
- Volume controller pot

SMART INDUSTRIAL TELEPHONE (MODEL WMHS-III):-

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
- 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/LSIN):-

SMART LOUDSPEAKER HORNS (MODEL LSOD):-Outdoor weatherproof loudspeaker horns with built in LMT for 60 Watts (RMS)

- 100 V operation
- Built in transformer based design
- Sound pressure level 107 dB
- Reentrant type loudspeakers
- ABS constructions
- 'C' clamp for Mounting
- Max power handling capacity :-60Watt (rms)

SMART INDOOR BOX SPEAKERS (MODEL LSIN):-Indoor speaker box with metallic construction – 10 watts (RMS)

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

SMART JUNCTION BOX (MODEL JB-I): -

SMART JUNCTION BOXES are meant to be connected with SMART PA SYSTEM WITH MCS-III it has single PCB based design with built in surge protection.

- 16 gauge rugged steel powder coated construction
- Integrated Canopy design for weather protection
- Single PCB design
- Wall mountable type

PATCHING WITH PLANT EPABX

The SMART MCS-III can be patched with PLANT EPABX using trunk lines of PLANT EPABX

UPS LOAD;-

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

MCS FOR 24 PORTS

60 VA (RMS) PEAK 170 VA

MCS FOR 112 PORTS

140 VA (RMS) PEAK 200 VA

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

SMART PAGING AMPLIFIER

320 VA (RMS) PEAK 450 VA

SPECIFICATIONS (SMART MCS): -

Electrical Requirement :-

Power Source:.....	220 Volts AC.
PA Telephone line:.....	40 VOLTS.
Power consumption:.....	< 35 Watts.
Stand by consumption:.....	< 5 Watts.
Insulation:.....	600 v for 3 min between power source & Telephone line.
Ringer Voltage:	50 VAC (100 V PP).

Mechanical Specifications: -

Dimensions:.....	320 X 380 X 200 (in mm).
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.

SMART CABLING

NON SPECIALITY, NON CRITICAL CABLES

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

- 0.5 mm, 1 PAIR, PVC insulated, TELEPHONE CABLE FORM MCS TO EACH LOCATION.
- 1.5 sq mm 3 CORE, ATC, PVC insulated, overall PVC sheathed POWER cable for POWER SUPPLY UNIT OF MCS

SMART INDUSTRIAL TELEPHONES (MODEL WMHS-III): -

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

SMART OPERATOR CONSOLE (MODEL DTHS-II) : -

- 0.5 mm, 1 PAIR, PVC insulated, TELEPHONE CABLE for SMART 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.

INDUSTRIAL COMMUNICATIONS SIMPLIFIED .

Cables & Wireless Co.

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“(Specifications and description subjected to change without prior notice)”