RUST INDUSTRIAL CO.

PACKAGED REMOTE CONTROL

For Commercial Broadcast Transmitters

AM — FM

NOW

positive

transmitter

control

. . . from any convenient control point

RUST SYSTEM:

- Meets all FCC requirements
- A *complete* system, tailored to your needs
- Full control provided for all desired adjustments
- Ample reserve capacity for future requirements

the rust industrial company, inc.

608 WILLOW STREET — MANCHESTER N H

RUST INDUSTRIAL CO.

SIMPLE · ECONOMICAL · DEPENDABLE

RUST SYSTEM PAYS FOR ITSELF IN SHORT ORDER!

Rust Remote Control lets you situate your studio and transmitter in ideal sites for each . . . the studio in the business center . . . the transmitter where real estate costs are low and transmitting conditions ideal. In fact, in past installations, the Rust System has proved it can pay for itself in as little as ten weeks!

Rust Remote Control assures both more efficient station operation and more effective use of personnel. No longer need an operator be on duty at the transmitter. He can now be used to better advantage in more productive work.

Standard Transmitter Unit
Type RI-108-1

Standard Monitor Preamplifier
Type RI-108-14

All components fully guaranteed

All components are of the highest quality. They are fully guaranteed for one year. The design is simple and functional. No vacuum tubes are used except in the RF (monitor) amplifier.

RUST
INDUSTRIAL CO.

RUST INDUSTRIAL CO.
608 WILLOW ST. MANCHESTER, N. H.

BEFORE YOU BUY A REMOTE CONTROL SYSTEM -- INVESTIGATE! COMPARE!

YOU SHOULD KNOW THE FOLLOWING FACTS ABOUT THE RUST SYSTEM:

...The RUST SYSTEM is PROVEN in operation! 2½ years actual commercial use. Already installed in dozens of stations...actually DOING the job!

...When you buy RUST there are no "if's" or "buts". You GET DELIVERY in a month or less. When you buy RUST you are following the lead of Collins Radio, Columbia Broadcasting System, and some of the nation's top station operators who have compared and bought RUST!

...Compare! RUST alone reads up to 9 meters plus monitor meters - performs 11 tuning or control operations. Can be tailor-made to what YOU want and are not a preconceived inflexible idea of a manufacturer. You get what you pay for - and you pay for no more.

...Dual operation? RUST can easily control 2 transmitters...sometimes even 3, using its spare capacity. This can save an AM-FM operator real money.

...RUST can be installed by the station. Just follow the detailed manual. Or expert supervision can be made immediately available on a per diem basis.

...RUST is compact! Years of design experience enable RUST to economize on space. The control unit is only 8-3/4" high and mounts in any rack. It plugs into 115 volts, has 4 terminals connected to the phone lines. One voltage regulator tube, otherwise no vacuum tubes to break down or wear out.

...Includes preamplifier to operate both monitors at the control point. It's as compact and highly efficient as the control and transmitter units. And it's easily installed, too.

...RUST is flexible! Will remotely control any transmitter...any vintage. More control, more compactness, more versatility, no more money!

...It's simple! Uses DC circuits. No audio tones that require phone lines costing up to 50% more per month...for life!

...RUST is economical, too! The total equipment for an average installation costs only $2475. A dual installation (AM-FM, AM-Auxiliary, etc.) costs about $3350, using full capacity.

RUST REMOTE CONTROL SYSTEMS GIVE YOU MORE...FOR NO MORE MONEY!!

General Specifications -- RI-108 Remote Control System

RUST INDUSTRIAL CO.

RI-108-0 Studio Unit

Mounting----- 19" relay rack - RMA slotting
Overall size- 19" wide by 7" high by 9" deep
Power-------- 100-130 volts 50/60 cycle, 65 watts

RI-108-1 Transmitter Unit

Mounting----- 19" relay rack - RMA slotting
Overall size- 19" wide by 8-3/4" high by 11" deep
Power-------- 100-130 volts 50/60 cycle, 25 watts

RI-108-14 (AM) and RI-108-15 (FM) Monitor Preamplifier Unit

Mounting----- 19" relay rack - RMA slotting
Overall size- 19" wide by 8-3/4" high by 10" deep
Power-------- 100-130 volts 60 cycle, 75 watts
Tuning------- factory adjusted to customers frequency
Output power- approximately 2 watts (sufficient to operate any commercial FM Monitor or AM Frequency and Modulation Monitor)
Input-------- Small antenna as required

Miscellaneous Units

The system includes a variety of standardized auxiliary units operated by the Transmitter Unit and mounted within the customer's transmitter or externally, including the following:

Antenna current unit
Latching relay unit
Momentary relay unit
Tower lighting unit
AC potential unit
AC current unit
DC potential unit
DC current unit

Motor driven rotary actuator, reversible -- with built in overtravel clutch. Used for tuning and other applications requiring rotation of a shaft.

Motor driven linear actuator, reversible -- with built in overtravel clutch. Used for operating and resetting Heinemann type overload circuit breakers and other purposes.

Auxiliary meter panel -- For remote indication of frequency and/or modulation monitor meters. (Not recommended except in special cases when monitors must remain at transmitter).

Telephone Line Requirements

Two telephone circuits are required between transmitter and remote control unit. The metering circuit requires a normal telephone pair but the control circuit may be either a normal pair, a simplex (ground return) circuit or a "phantom" circuit. Both telephone circuits must provide a DC path and thus must be free of amplifiers or transformers. The total resistance of each pair should not exceed 2000 ohms DC.

WHAT STATIONS NEED RUST REMOTE CONTROL SYSTEMS?

A new station can locate its transmitter on "cheap land" at an ideal technical site with a very small transmitter house at the tower base. Studios and offices can be centrally located "downtown", a great convenience for the staff and for efficient business operation, without the usual higher operating cost of a two-location station.

Established Stations with separate transmitter buildings can eliminate the duplication of technicians. Other stations in compromise combination buildings may often relocate either studio or transmitter for more efficient operation.

WHAT DOES THE FCC REQUIRE FOR REMOTE CONTROL OPERATION?

The broadcast licensee must file a routine application for a remote control construction permit. The minimum FCC requirements are that the remote control system shall accurately indicate final stage plate current, final stage plate voltage, antenna current, tower light operation, frequency deviation and percentage modulation. "Fail-safe" means must also be provided to turn the transmitter on and off and adjust the ouput power.

HOW DOES THE RUST SYSTEM INDICATE FREQUENCY DEVIATION AND MODULATION PERCENTAGE AT THE REMOTE CONTROL POINT?

A special radio-frequency amplifier is provided to operate the station's frequency and modulation monitors off-the-air from a small antenna at the remote control point. The standard approved monitors are not modified in any way.

DOES THE RUST SYSTEM MEET ALL FCC REQUIREMENTS?

In addition to meeting all FCC requirements, the Rust System can provide five extra meter readings and six additional control operations for any of the following purposes----tune the final stage, read and adjust line voltage, read and adjust filament voltage, Conelrad switching, control an emergency transmitter, simultaneously control an AM and FM transmitter at the same site, reset overload breakers, operate any power contactor; read any pressure, temperature or electrical value; turn any shaft and indicate its angular position, etc. This extra system capacity provides more protection for your transmitter, less chance of loss of broadcast time, and room for future needs.

WILL THE TWO UNITS PICTURED IN YOUR RECENT ADVERTISEMENTS DO ALL THESE JOBS?

The basic units, types RI-108-0 and RI-108-1 have the switching capacity to read nine meters and simultaneously perform nine controlling operations. Each of the eighteen possible operations will require a small additional auxiliary unit such as a tuning-motor, power contactor or metering element connected to the transmitter. The cost of the complete installation will vary with the number and type of auxiliary elements desired. The two major units, which represent a substantial part of the total equipment cost, are identical for every installation, so the system has a high degree of flexibility and can be readily modified in the field, or even moved to a new transmitter with a minimum of cost and field labor.

IS THE SYSTEM COMPLICATED?

The design is simple and functional. No vacuum tubes are used except in the RF (monitor) amplifier. All relays and components are of the highest quality. The reliability equals that of everyday dial telephone equipment. Anyone can easily learn to operate the system.

INTRODUCTION

The basic Rust remote control system consists of two synchronized units connected by two telephone lines. Remote Control Unit MI-100-0 is mounted at the studio and Control Unit MI-100-1 is mounted at the transmitter. The equipment is capable of controlling any AM or FM broadcast transmitter. Up to nine meter readings can be obtained and ten tuning or switching operations performed by simply dialing the desired function. Transmitter adjustment is made while simultaneously observing readings of the appropriate meter at the remote control point.

The transmitter can be connected to any one of a number of auxiliary tuning motors or contactors used for transmitter tuning, indicating plate voltage, plate current, antenna current, tower light current, line voltage, frequency deviation or modulation percentage. In addition, it is possible to control an emergency transmitter, control an AM and FM transmitter simultaneously at the same site, reset overload breakers, operate power contactors, read any pressure, temperature or electrical value, turn any shaft and indicate its angular position, and also control sequential switching.

The system includes the following standardized auxiliary units operated by the transmitter unit and mounted either within the transmitter or externally.

Unit No.	Unit Name
MI-100-2	Studio Auxiliary Relay Unit
MI-100-3	Antenna Current Unit
MI-100-4	15 amp. Latching Relay Unit
MI-100-4B	20 amp. Latching Relay Unit
MI-100-5	25 Amp Tower Light Unit

Unit No.	Unit Name
RI-108-6	AC Potential Unit 115/230 V.
RI-108-7	AC Current Unit
RI-108-8A	0-2000 V. DC Metering Unit
RI-108-8B	2250-4000 V. DC Range Extension Unit
RI-108-8C	1 MA Meter Sampling Resistor Unit
RI-108-9A	300 MA DC Current Unit
RI-108-9B	500 MA DC Current Unit
RI-108-9C	1000 MA DC Current Unit
RI-108-10	Rotary Meter Unit
RI-108-11	Linear Meter Unit
RI-108-12	Auxiliary Meter Panel (1 meter)
RI-108-13	Auxiliary Meter Panel (2 meters)
RI-108-14	AM Monitor Preamplifier Unit
RI-108-15	FM Monitor Preamplifier Unit
RI-108-16	Diplexing Units
RI-108-17	Time Delay Units
RI-108-18	10A Momentary Relay Unit
RI-108-19	RCA Actuator
RI-108-20	Collins 300? Adapter

DESCRIPTION OF UNITS

a. Transmitter Remote Control Unit RI-108-0

Remote Control Unit RI-108-0 is a compact unit designed for mounting in a standard 19" rack panel. The unit operates from a 100/130 volt 50/60 cps. source of supply. Power consumption is approximately 65 watts. Its electrical circuits consist of a metering circuit, control circuit, a voltage regulated one-half wave power supply circuit and an unregulated

one-half wave power supply circuit.

A telephone type dial is mounted on the front panel to select and place in operation those circuits necessary to operate the desired function. Dialing a specific number selects one of ten indicator lamps to show which circuit has been dialed. An indicating meter is also mounted on the front panel to record data required by FCC and give a visual indication of transmitter adjustments, filament, plate and antenna voltages and currents, in addition to tower light control, frequency deviation and modulation percentage. A Lower-Raise switch is utilized to turn the transmitter motors in a clockwise or counterclockwise direction or to act as an On-off switch. A red pilot lamp lights when AC voltage is applied to the unit.

b. Transmitter Control Unit RI-103-1

Control Unit RI-103-1 is designed for mounting on a standard 19" rack panel. The unit operates from a 100/130 volt 50/60 cps source of supply. Power consumption is approximately 25 watts. Its electrical circuits consist of a metering circuit, control circuit, and an unregulated full-wave power supply.

The RI-103-1 is connected to the transmitter control circuits which, in turn, are connected with the studio via telephone lines. Ten indicator lamps are mounted on the front panel to indicate the function dialed at the control point. Nine calibration controls are also front-panel mounted to provide a means of

[illegible] the indicator meter of Unit [illegible]. Use of various shunts and multipliers permits the metering of several circuits at the remote control point. Any failure of the system immediately removes all power from the transmitter. A red pilot lamp lights when AC voltage is applied to the unit.

TELEPHONE LINE REQUIREMENTS

Two telephone circuits are required between the transmitter and the remote control units. The metering circuit requires a normal telephone pair but the control circuits may be either a normal pair, a simplex (ground return) circuit or a phantom circuit. Both telephone circuits must provide a DC path, i.e., must be free of amplifiers or transformers. The total resistance of each pair should not exceed 4[illegible] ohms DC.

MINIMUM FCC REQUIREMENTS -- REMOTE CONTROL

Meter Readings
- Frequency Deviation
- Percentage Modulation
- Final Stage Plate Current
- Final Stage Plate Voltage
- Antenna Current

Other Indications
- Tower Lighting Bulbs and Flasher Operation
- Temperature of Crystal Control Chamber (if Thermometer is used)

Control
- Transmitter "On-Off" (to be of "Fail Safe" type)
- Adjust Power Output

BASIC REMOTE CONTROL FUNCTIONS FOR A REMOTE CONTROL SYSTEM

Control Operations
- Tower Lights "On-Off"
- Filament Power "On-Off"
- Plate Power "On-off"
- Final Plate Tuning
- Output Control

Metering Operations
- Tower Lighting Current
- Line Voltage - After Fil. Switch
- Final Plate Voltage
- Final Plate Current
- Antenna Current

OTHER OPTIONAL AND SPECIAL PURPOSE REQUIREMENTS

- Reset Manual Overload Breakers
- Switch Program Lines
- Tone Link Receivers
- Control Dialing Equipment
- Conelrad Switching
- Switching and Roll Control of Emergency Transmitter
- Indicate Standing Wave Ratio
- Adjust Line or Filament Voltage
- Control AM and FM Transmitter at Same Site
- Read Any Pressure, Temperature or Electrical Value

REFERENCE DATA

RI-100-C Studio Unit

Mounting ..... 19" relay rack - EIA slotting

Overall Size ..... 19" wide by 7" high by 9" deep

Power..... 100-130 volts, 50/60 cycles, 25 watts

RI-150-I Transmitter Unit

Mounting ..... 19" relay rack - EIA slotting

Overall Size..... 19" wide by 5-3/4" high by 11" deep

Power ..... 100-130 volts, 50/60 cycles, 25 watts

THEORY OF OPERATION

2. TRANSMITTER REMOTE CONTROL UNIT RI-133-B

a. Power Supply

A.C. input to the RI-133-B is applied to the primary winding of isolation transformer T-1 through a 3 ampere fuse F-1, and the primary winding of isolation transformer T-2 through a 3 ampere fuse F-2. Selenium rectifier Y-1 is connected in a voltage regulated half-wave rectifier circuit. Voltage regulation is obtained by the use of voltage regulator Y-1, a type OA3 voltage regulator. Capacitors C-1 and C-2 are the regulated power supply filter capacitors. The output of selenium rectifier Y-2 is utilized as the energizing voltage for the steering system.

b. Voltage Divider and Selector

The regulated output of selenium rectifier Y-1 is connected through a voltage divider network composed of resistors R-2 through R-7. The voltage divider is tapped down at three different positions to provide raise, lower and pulse voltages of 40 volts, 20 volts and 10 volts, respectively, between the positive control line LJ and the negative control line LL, when the Raise-Lower switch S-2 is moved. Germanium diode Y-3 is connected in an "anti-hunt" circuit to prevent any current from returning through the voltage divider circuit when switch S-3 is moved from Lower to Raise.

c. Telephone Dial S-3

Telephone dial S-3 interrupts the pulse voltages with a number of high-speed impulses corresponding to the number dialed.

INSTALLATION

1. Unpacking

The RI-108-0 and RI-108-1 remote control units are packed in a single wooden box. To remove the units proceed as follows:

Step 1. Remove the top of the box using an ordinary claw hammer or nail-puller.

Step 2. To remove the units loosen and remove the wood screws securing the units to the box.

Step 3. Inspect the units carefully and note that the equipment has not been damaged during shipment.

All auxiliary accessory units are packed in a separate wooden box. These units are unpacked in the same manner as the RI-108-0 and RI-108-1 units.

2. Preliminary Requirements

a. Power

The RI-108-0 and RI-108-1 units operate from a 115 volt, 60 cps., single phase source of supply.

b. Telephone Lines

Two telephone circuits are required between the transmitter and remote control units. The metering circuit requires a normal telephone pair but the control circuit may be either a normal pair, a simplex (ground return) circuit or a phantom circuit.

4

b. Reset Selector Jumper

The HI-100 equipment is wired at the factory to complete five specific functions. A jumper is connected between terminals 6 and 10 of the reset selector to complete the circuit to X-1 in the HI-100-2 and to X-2 in the HI-100-1. If six positions are to be used, it will be necessary to cut the jumper between terminals 6 and 7. If seven positions are to be used, cut the jumper between 7 and 8. Follow the same procedure if positions 8 and 9 are to be used.

3. Interconnection

a. HI-100-2

Telephone line connections to the HI-100-2 are made on the 3 pin terminal board located at the rear of the unit. Using the rear of the unit make the connections to the following number:

1. Connect the positive metering line (+) to terminal 1.
2. Connect the negative metering line (-) to terminal 2.
3. Connect the positive ac ring line (+) to terminal 3.
4. Connect the negative ac ring line (-) to terminal 4.

R. RI-108-1

Telephone line connections to the RI-108-1 are made on the four connector terminal board located at the rear of the unit. Facing the rear of the unit make the connections in the following manner:

(1) Connect the positive metering line L1 to terminal 1 (reading from left to right).

(2) Connect the negative metering line L2 to terminal 2.

(3) Connect the positive control line L3 to terminal 3.

(4) Connect the negative control line L4 to terminal 4.

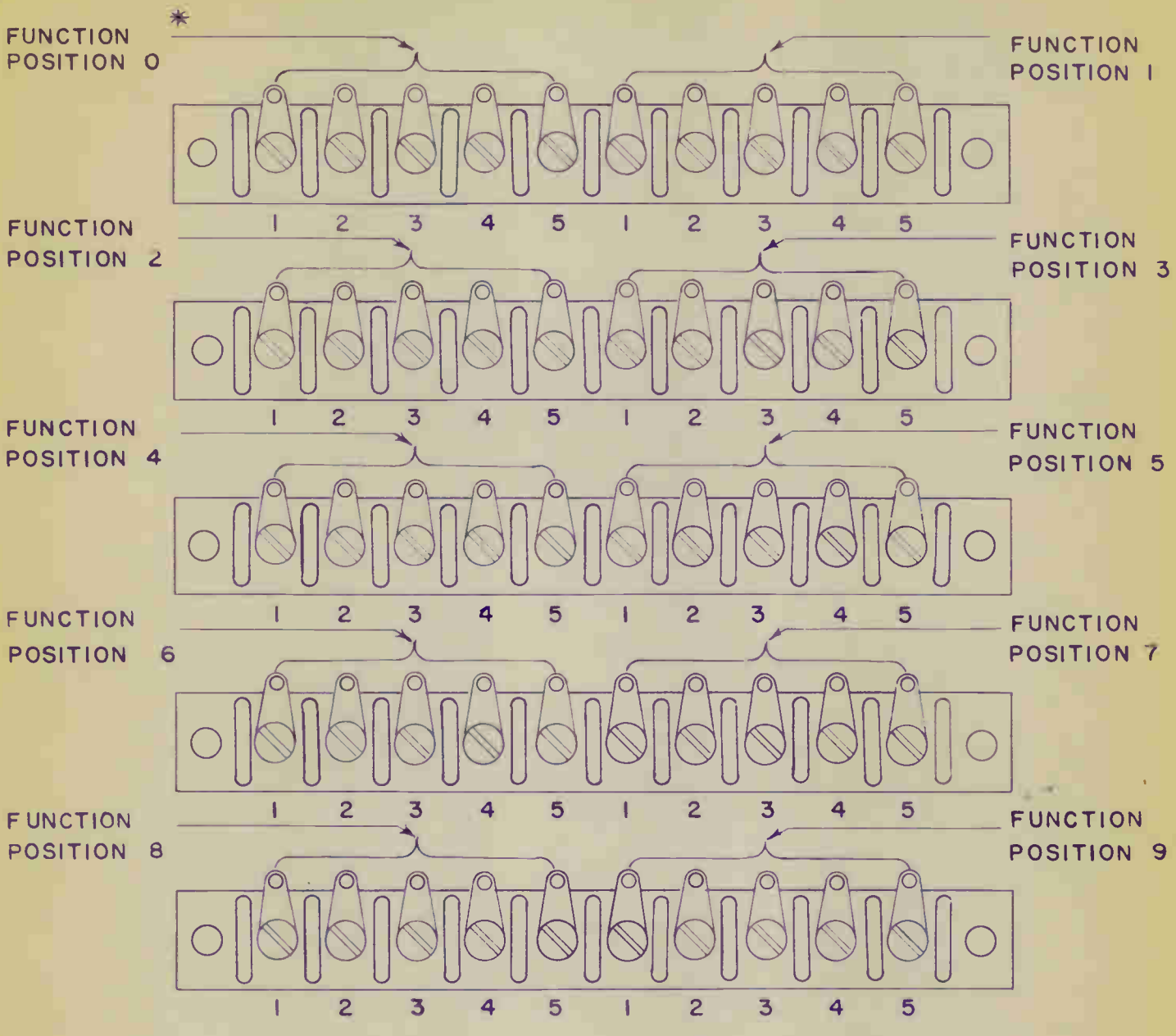
TERMINAL BOARD CONNECTIONS

Five terminal boards, each having 11 connectors are mounted at the rear of the unit. The terminal boards are divided into two sections, each consisting of five connectors. Facing the rear of the unit functional position 0, see Figure -6-, starts at the top left corner and continues for five connectors. The remaining functional positions continue consecutively from position 1 to position 9, reading from left to right, with position 9, at the bottom right hand end.

FIGURE 6, FUNCTIONAL POSITION LOCATIONS

TERMINAL BOARD

REAR OF UNIT RI—108—1



TERMINAL NO. 1 — PLUS METERING LINE
TERMINAL NO. 2 — MINUS METERING LINE
TERMINAL NO. 3 — RAISE LINE
TERMINAL NO 4 — LOWER LINE
TERMINAL NO. 5 — COMMON LINE

* TERMINALS NOS. 1, 2 — FAIL SAFE RELAY CONTACTS
TERMINAL NO. 5 — POWER SUPPLY HIGH VOLTAGE

OPERATION

Normal operation of the BI-108 remote control equipment is accomplished by means of the front panel mounted controls on the Remote Control Unit BI-108-A.

1. Controls

a. A.C. Power

The A.C. power switch is a single pole single throw toggle switch utilized to connect A.C. power into the BI-108-A. A red pilot light should ignite with the switch in the ON position.

b. Raise-Lower

By operation of the Raise-Lower switch, any one of nine external units consisting of reversible motors or contactors may be operated in the desired direction by the technician in the studio.

c. Set Meter

This control may be adjusted to obtain a standard meter deflection on position [illegible] so that for all meter readings compensation is made for variation in telephone line resistance due to temperature effects.

c. Read Meter

This is a push button switch which is used to complete the D.C. circuit to the front-panel indicating meter.

e. Telephone Dial

The telephone dial is utilized to select and place into operation those circuits necessary to operate a particular function.

2. Operation

NOTE

Before dialing any particular function, it is necessary to dial 0 in order to synchronize the RI-10R-0 unit at the studio and the RI-10R-I unit at the transmitter. A chart is mounted on the front-panel listing those functions available and their position on the dial.

Step 1.

Set the A.C. power switch at ON. Red pilot lamp should light. The transmitter filaments will light automatically unless the transmitter is equipped with Heinemann circuit breakers.

Step 2.

Dial 0 and then dial filament voltage position. Press Read Meter switch and read the transmitter filament voltage on the front-panel meter. If the transmitter is equipped with Heinemann circuit breakers, it will be necessary to set these at ON by holding the raise-lower switch in the raise position for several seconds.

Step 3.

Dial 7, meter calibrate position. Press Read-Meter switch and adjust the Set Meter control for full-scale deflection on the meter.

Step 4.

Wait a short period of time, approximately 30 seconds, for transmitter time delay switches to trip. Dial 0 and then dial plate ON-OFF position. Set the Raise-Lower switch at Raise to apply plate voltage to the transmitter. Press the Read Meter switch to read plate voltage.

Step 5.

Dial 0 and then dial the plate tuning position. Press the Read-Meter switch to read plate current and simultaneously adjust the plate tuning by actuating the Raise-Lower switch.

Step 6.

Dial 0 and then dial the output coupling position. Press the Read Meter switch to read antenna current and simultaneously adjust the output coupling by moving the Raise-Lower switch.

Step 7.

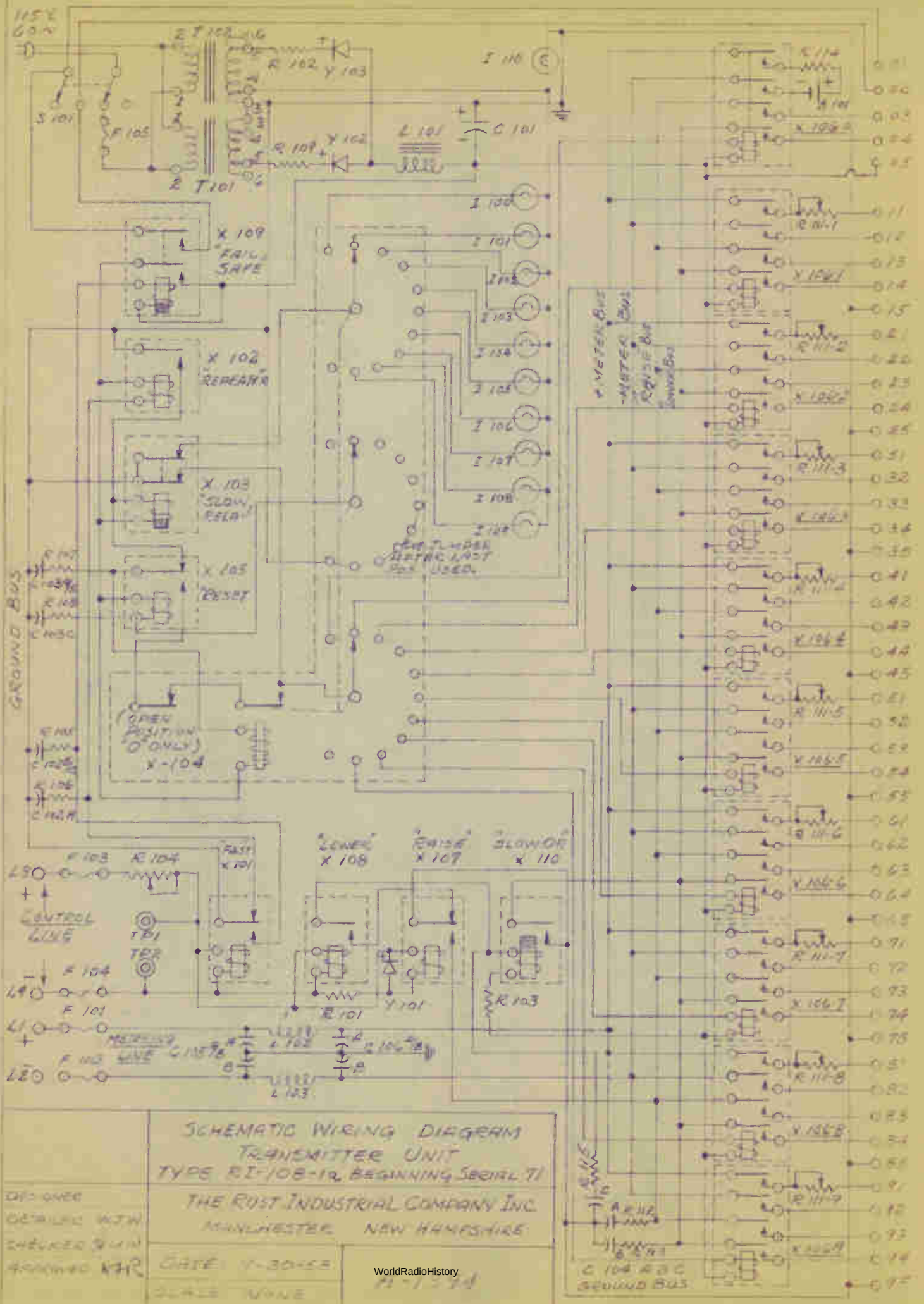
Dial 0. Dial tower light position. Tower lights may now be lighted by setting the Raise-Lower switch at Raise or turned-off by setting the Raise-Lower switch at Lower. Press Read Meter switch. Meter will indicate tower light current.

Step 8.

To turn the transmitter off, dial 0 and then dial the plate ON-OFF position. Set the Raise-Lower switch at Lower. Depress Read Meter switch and note that plate voltage is off.

Step 9.

To turn off the filament power, Dial 0, then dial the filament voltage position. Set the A.C. power switch on the RI-108-C at OFF. Red pilot light will go out. Depress the Read Meter switch and note that the filament voltage is off.

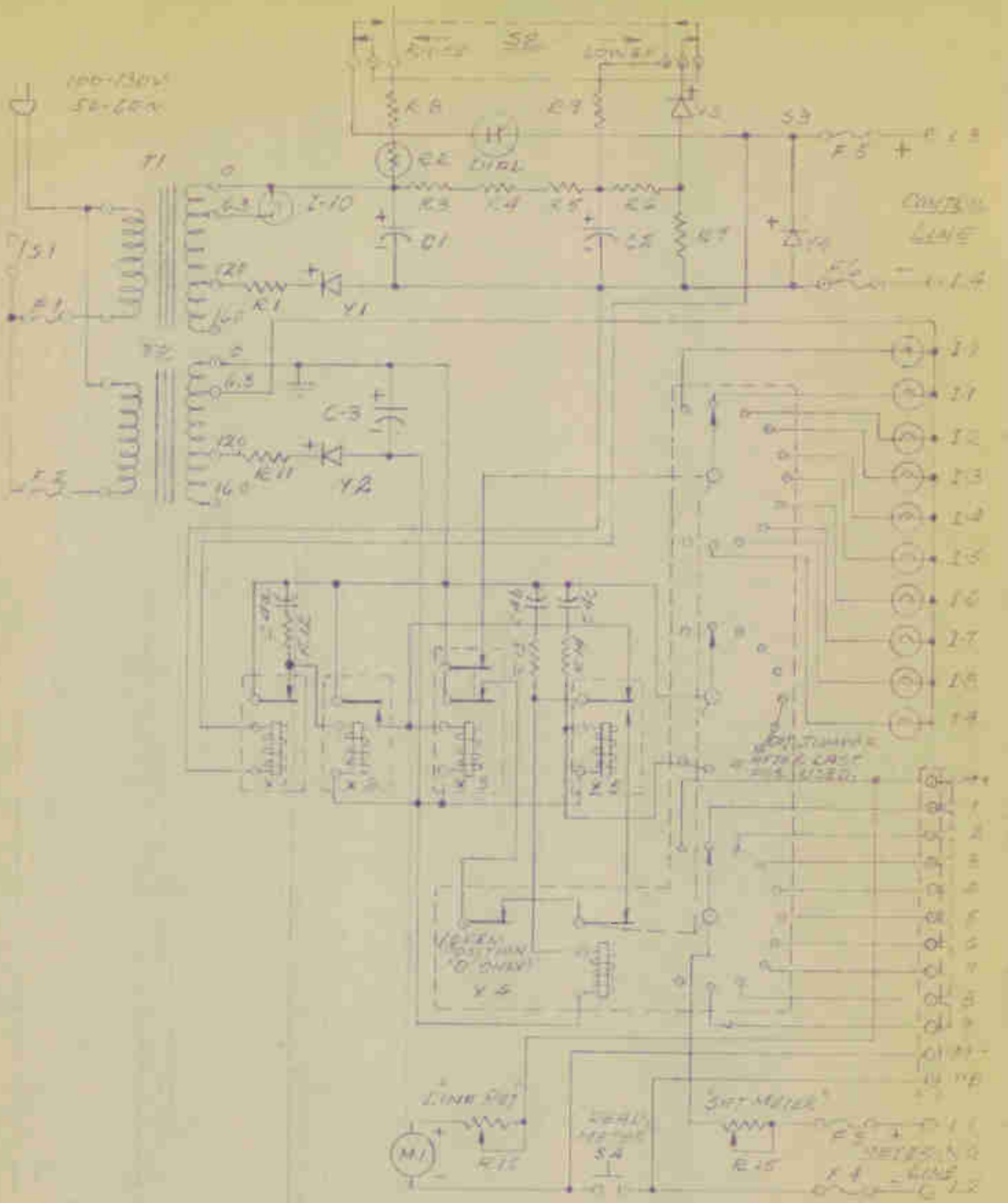


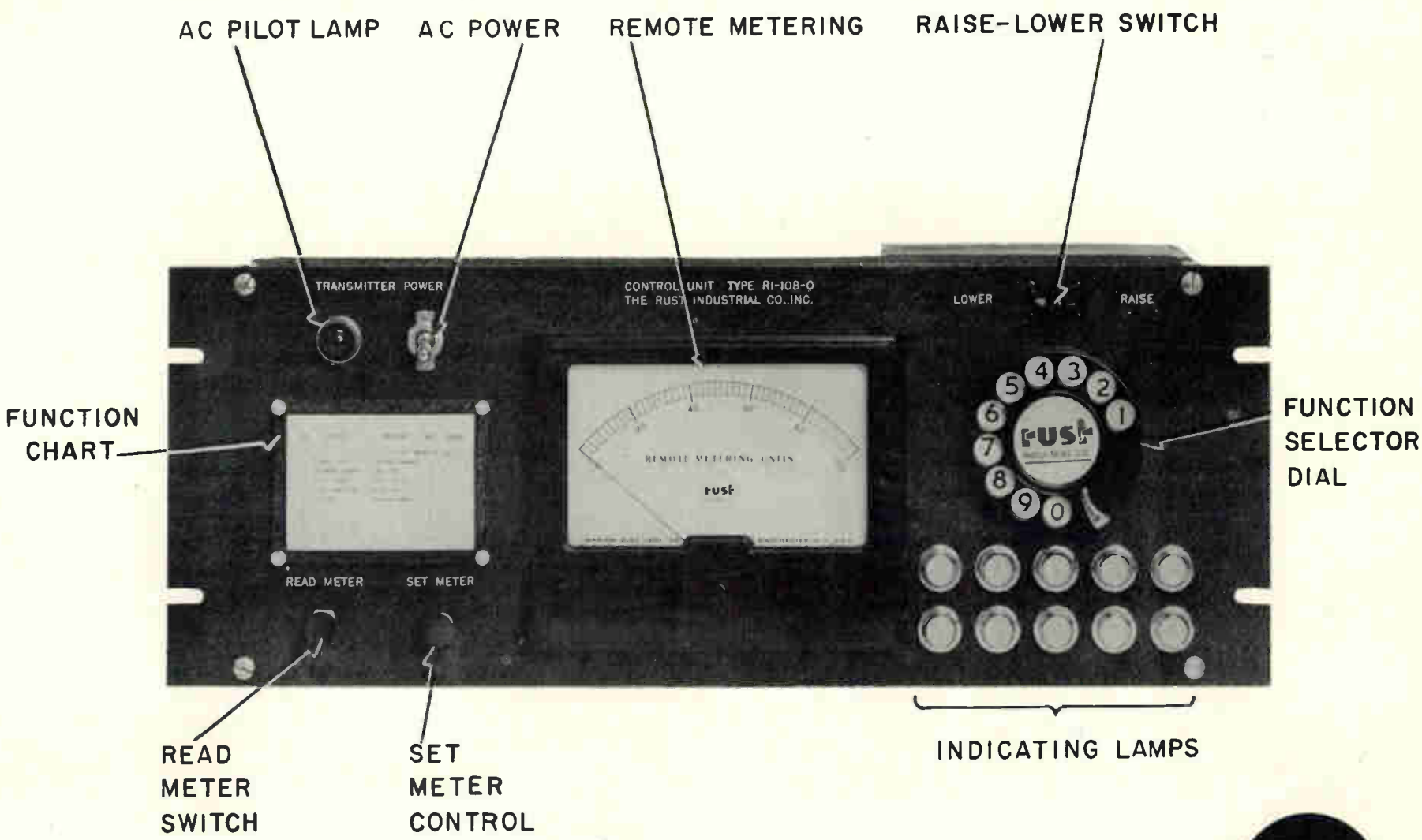
SCHEMATIC WIRING DIAGRAM
TRANSMITTER UNIT
TYPE RI-108-12 BEGINNING SERIAL 71

THE RUST INDUSTRIAL COMPANY INC.
MANCHESTER NEW HAMPSHIRE

DRAWN
DETAILED WITH
CHECKED
APPROVED

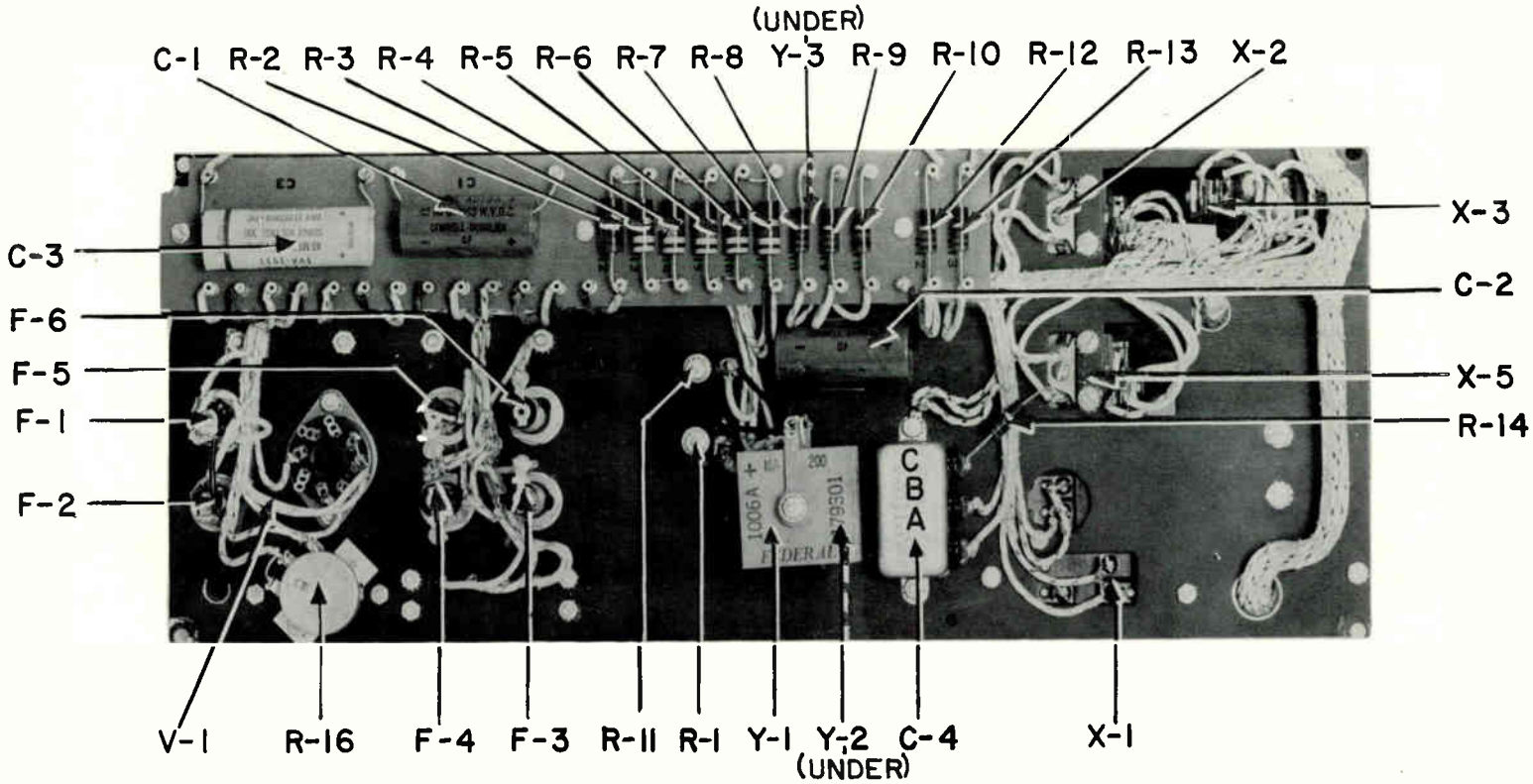
DATE 7-30-42
SCALE NONE





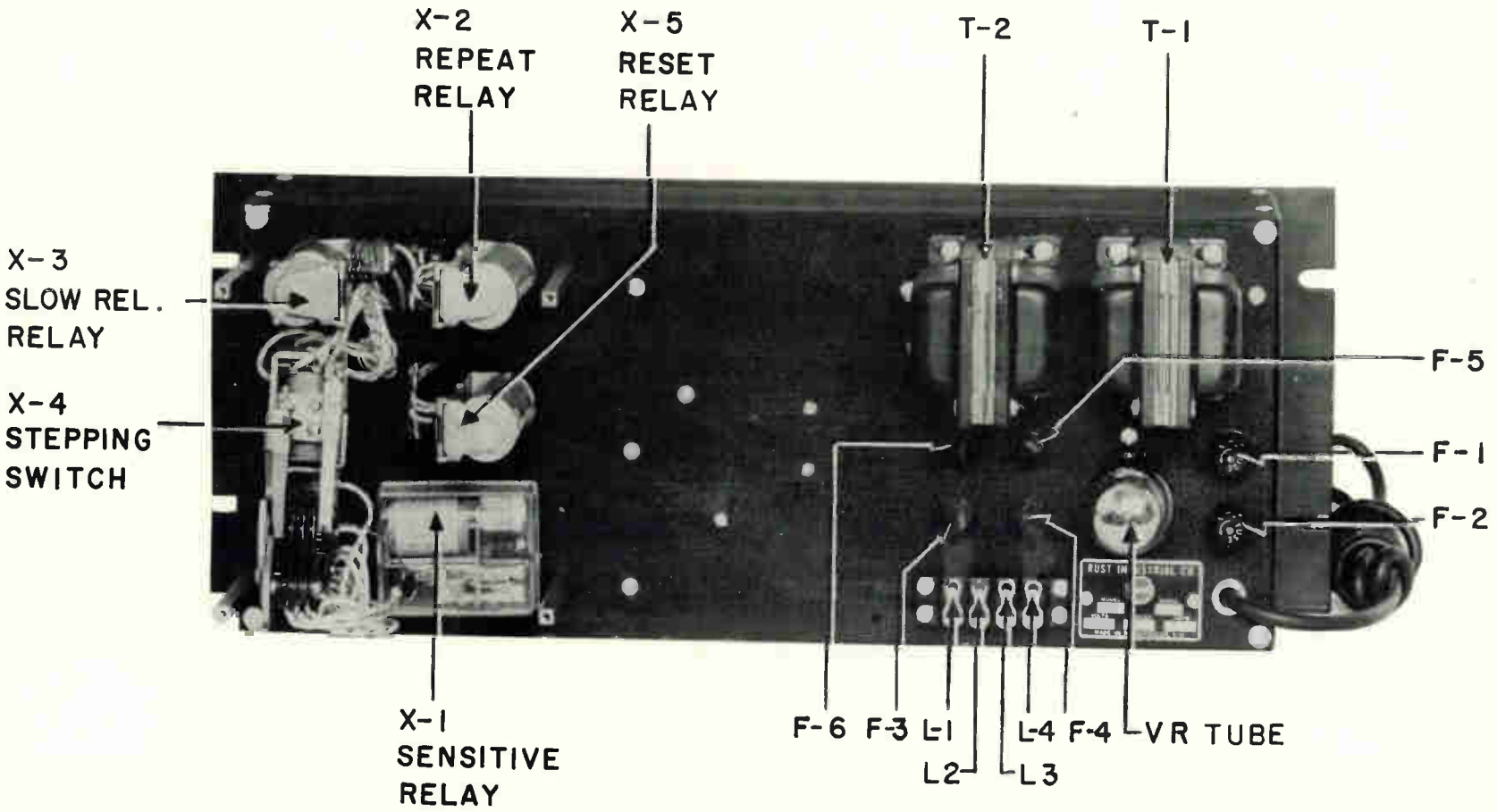
COMPONENT LOCATIONS
FRONT OF RI-1080 UNIT

RUST INDUSTRIAL CO.



COMPONENT LOCATIONS
INSIDE REAR CHASSIS OF RI-1080 UNIT

FUSI INDUSTRIAL CO.



COMPONENT LOCATIONS
REAR OF RI-1080 UNIT

FUSI
INDUSTRIAL CO.

Standard Control Unit
Type RI-108-0

it meets all FCC requirements

Rust System meets FCC Requirements as follows:

Accurately indicates final stage plate current, final stage plate voltage, antenna current, tower light operation, frequency deviation and percentage modulation. Reliably turns the transmitter on and off and adjusts output power. Any failure of the system immediately removes all power from the transmitter.

.....and then some!

Plus meeting FCC requirements, Rust System provides extra meter readings and extra control operations for the following purposes: Tune the final stage, read and adjust line or filament voltage, switch program lines, Conelrad switching, control an emergency transmitter, simultaneously control an AM and FM transmitter at the same site, reset overload breakers, operate any power contactor, read any pressure, temperature or electrical value, turn any shaft and indicate its angular position, etc.

IT'S SIMPLE, EASY TO OPERATE . . . Anyone can learn to operate Rust Remote Control. The Rust System includes two basic synchronized units, one (Type RI-108-1) at the transmitter and another (Type RI-108-0) at the control point, connected by two ordinary telephone lines. A standardized radio-frequency amplifier is available to operate the station's frequency and modulation monitors off-the-air from a small antenna at the remote control point.

ELEVEN METER READINGS can be made and eleven operations can be controlled by simply dialing desired functions. (For certain operations, small auxiliary tuning motors, power contactors or metering elements are necessary. They are precision engineered by Rust and stocked to meet all normal requirements.)

NOW . . . *YOU CAN ADJUST THE TRANSMITTER WHILE YOU CHECK IT!*

Rust System gives you more than meter readings, it also:

- ***Permits transmitter adjustments to be made remotely while simultaneously observing the effect of these adjustments.***
- ***Protects valuable transmitter and tubes by allowing immediate correction of troubles.***
- ***Minimizes the chance of lost air time.***
- ***Eliminates needless trips for transmitter adjustment.***

RUST SYSTEM

specifications

DESCRIPTION	RATING	TYPE
Control Unit	Standard RTMA rack slotting Size — 19" wide by 7" high by 9" deep 100-130 volts — 60 cycle — 65 watts	RI-108-0
Transmitter Unit	Standard RTMA rack slotting Size — 19" wide by 8¾" high by 10" deep 100-130 volts — 60 cycle — 25 watts	RI-108-1
AM Monitor Pre-amplifier	Standard RTMA rack slotting Size 19" wide by 8¾" high by 10" deep 100-130 volts — 60 cycle — 75 watts Factory adjusted to customer's frequency Output — 2 watts or more Input — antenna as required	RI-108-14
FM Monitor Pre-amplifier	Standard RTMA rack slotting Size 19" wide by 8¾" high by 10" deep 100-130 volts — 60 cycle — 75 watts Factory adjusted to customer's frequency Output — 2 watts or more Input — antenna as required	RI-108-15
Antenna Current Metering	Standard RTMA rack slotting Size 19" wide by 8¾" high by 10" deep 100-130 volts — 60 cycle — 75 watts Factory adjusted to customer's frequency Output — 2 watts or more Input — antenna as required	RI-108-3
AC Potential Metering	115/230 volts — 60 cycles	RI-108-6
AC Current Metering	5-20 amperes — 60 cycles	RI-108-7
DC Potential Metering	250-2000 volts DC	RI-108-8A
Range Extension Metering	2250-4000 volts DC	RI-108-8B
DC Current Metering	1 MA DC	RI-108-8C
DC Current Metering	100-300 MA DC	RI-108-9A
DC Current Metering	300-600 MA DC	RI-108 9B
DC Current Metering	600-1200 MA DC	RI-108-9C
Tower Light Metering and Control	4-20 amperes — 115 v — 60 cycles	RI-108-5
Latching Relay - D.P.D.T.	10 amperes contact rating	RI-108-4A
Latching Relay - D.P.D.T.	25 amperes contact rating	RI-108-4B
Dual Momentary Relay S.P.D.T.	10 amperes contact	RI-108-18
Rotary Motor Actuator	3 RPM — 115 v — 60 cycles 7 lb. inches rated torque ¼ diameter output shaft Built in protective clutch	RI-108-10
Linear Motor Actuator	2 inch travel standard 18 lbs. rated force 115 v — 60 cycles Built in protective clutch	RI-108-11

TELEPHONE LINE REQUIREMENTS

Two telephone circuits are required between transmitter and remote control unit. The metering circuit requires a normal telephone pair isolated from ground. The control circuit may be either a normal pair, a simplex (ground return) circuit or a "phantom" circuit. Both telephone circuits must provide a DC path not to exceed 2000 ohms DC and must be free of amplifiers or transformers.

ORDERING AND PRICE INFORMATION

Sold as individual components or on completely engineered and installed basis including any necessary transmitter modifications. Equipment in current production and most units available from stock. Quotations for individual components or a complete system gladly furnished upon receipt of necessary information.

Write, wire or phone for further details.

the rust industrial company, inc.

608 WILLOW STREET MANCHESTER, N. H.