

OPERATING FEATURES.

OPEN DOORS PUSHBUTTON.

DE-ENERGISES THE CLOSING CIRCUITS AND INITIATES THE OPENING SEQUENCE BY SWITCHING-ON THE PUMP-MOTOR-STARTER AND THE OPENING SOLENOID FOR EACH DOOR VIA RELAYS RDOI-RDOB. 30-SECONDS LATER, TIMING RELAYS WILL RENDER ALL CIRCUITS DE-ENERGISED, WITH THE EXCEPTION OF DOOR-POSITION-INDICATOR LAMPS. (SEE NOTES 2 AND 3).

CLOSE DOORS PUSHBUTTON.

DE-ENERGISES THE OPENING CIRCUITS AND INITIATES THE CLOSING SEQUENCE AS FOLLOWS—
AUDIBLE WARNING IS SOUNDED LOCALLY AT EACH DOOR THAT IS IN THE OPEN POSITION.
10-SECONDS LATER, DOORS BEGIN TO CLOSE (SEE NOTES) AS THE PUMP-MOTOR-STARTER AND THE CLOSING SOLENOID FOR EACH OPEN DOOR ARE SWITCHED-ON VIA RELAYS RDCI-RDCB. AUDIBLE WARNINGS AND PUMP MOTORS STOP, AS EACH DOOR BECOMES FULLY CLOSED.
DOOR CLOSING CONTROL NOW REMAINS ON THUS ENSURING THAT INDIVIDUAL DOORS WILL AUTOMATICALLY RE-CLOSE AGAINST ANY RANDOM LOCAL OPERATIONS. ALSO, LOCAL AUDIBLE WARNING WILL SOUND UNTIL DOOR RETURNS TO THE FULLY CLOSED POSITION. (SEE NOTES 2 AND 3).

SUPPLY LAMPS

CONFIRM THAT EITHER NORMAL OR EMERGENCY POWER SUPPLY IS AVAILABLE. THESE HAVE PRESS-TO-TEST LAMP FILAMENT FEATURE.

DIMMER

CONTROLS THE BRILLIANCE OF THE SUPPLY LAMPS.

LOCAL CONTROL

A MICRO-SWITCH INTEGRAL WITH A LEVER OPERATED HYDRAULIC VALVE, COMPLETES THE PUMP-MOTOR-STARTER CIRCUIT WHEN EITHER OPEN OR CLOSE MOTIONS ARE SELECTED AT AN INDIVIDUAL DOOR.
LOCAL OPERATION OVERRIDES BRIDGE PANEL CONTROL, BUT, THE DOOR WILL RE-CLOSE ONCE THE LOCAL CONTROL LEVER IS RELEASED, PROVIDING THAT THE BRIDGE PANEL CLOSING CONTROL IS IN OPERATION.

LOCAL ISOLATING SWITCHES.

INDIVIDUAL DOORS MAY BE ISOLATED FROM THE BRIDGE PANEL OPENING INFLUENCE. THESE ARE SITED ON EACH SIDE OF A DOOR.

INDICATION.

DOOR POSITION INDICATOR LAMPS ARE PROVIDED AT A REMOTE POSITION ABOVE THE BULKHEAD DECK (MARGIN-LINE INDICATOR) FOR EACH DOOR.
THE RELAY RACK SECTION INCLUDES VOLTAGE-FREE DRY CONTACTS, TO ACTIVATE CUSTOMERS REMOTE INDICATING LIGHTS.
ONE CONTACT PER DOOR FOR "DOOR OPEN" AND
ONE CONTACT PER DOOR FOR "DOOR CLOSED".

ALTERNATIVE MODES OF OPERATION.

BRIDGE CONTROL.

THE POWER OPERATION OF ALL DOORS FROM THE BRIDGE CONTROL PANEL. THIS IS THEREFORE THE MASTER CONTROL FUNCTION.

LOCAL CONTROL.

THE LOCAL POWER OPERATION OF AN INDIVIDUAL DOOR.

LOCAL HAND OPERATION.

THE LOCAL MANUAL OPERATION OF AN INDIVIDUAL DOOR BY MEANS OF A HAND-OPERATED PUMP.

REMOTE HAND OPERATION.

THE MANUAL OPERATION OF AN INDIVIDUAL DOOR BY MEANS OF A HAND-OPERATED PUMP WHICH IS SITED ABOVE THE BULKHEAD DECK. THE SITING IS REFERRED TO AS EITHER "MARGIN LINE" OR "REMOTE CONTROL" STATION AND INCORPORATES DOOR-POSITION-INDICATION.

RELAY IDENTIFICATION.

MCN — MASTER CLOSING . NORMAL.
MON — MASTER OPENING . NORMAL.
MCE — MASTER CLOSING . EMERGENCY.
MOE — MASTER OPENING . EMERGENCY.

SRG — SECONDARY CLOSING.
SRO — SECONDARY OPENING.
RDCI-RDCB — CLOSING SEQUENCE.
RDOI-RDOB — OPENING SEQUENCE.
TRI — TIMER FOR 10-SECONDS ADVANCE WARNING OF DOOR CLOSURE UNDER BRIDGE CONTROL.

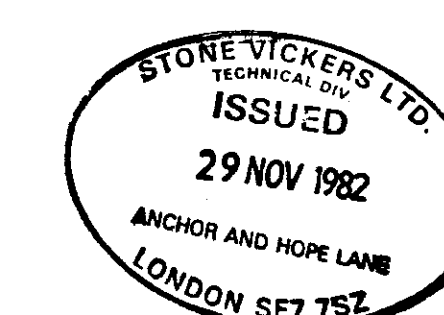
TR2 — TIMER TO DE-ENERGISE THE OPENING SEQUENCE ONCE COMPLETED, UNDER NORMAL SUPPLY, TIMED AS 30-SECONDS FROM COMMENCEMENT OF OPENING SEQUENCE.

TR3 — TIMER TO DE-ENERGISE THE OPENING SEQUENCE ONCE COMPLETED, UNDER EMERGENCY SUPPLY, TIMED AS 30-SECONDS FROM COMMENCEMENT OF OPENING SEQUENCE.

ROS — FOR OPENING SEQUENCE UNDER EMERGENCY SUPPLY.
FR — FLASHING RELAY PROVIDES ONE-SECOND PULSING FOR STR.
STR — STEPPING RELAY TO OPERATE DOORS IN GROUPS OF FOUR WHEN UNDER EMERGENCY SUPPLY CONDITIONS.
RR — RESET RELAY FOR STR.
ICLR — ISCLR — CLOSING LIMIT RELAYS.
PD — RELAYS TO DETECT EMERGENCY SUPPLY.
PDI —

NOTES.

- CIRCUITS ARE SHOWN AS FOR NON-ENERGISED OR NON-OPERATED CONDITION.
- OPERATING SEQUENCE UNDER NORMAL SUPPLY WHEN OPERATED FROM BRIDGE. ALL DOOR CIRCUITS RESPOND AT THE SAME TIME.
- OPERATING SEQUENCE UNDER EMERGENCY SUPPLY WHEN OPERATED FROM BRIDGE. DOOR CIRCUITS RESPOND IN THREE GROUPS OF FOUR AND ONE GROUP OF THREE. EACH GROUP SEPARATED BY A TWO-SECONDS INTERVAL.
- THE SUPPLY RELAY IS TO PREVENT FEEDBACK THROUGH CIRCUITS THAT ARE COMMONED WITHIN THE CONTROL PANELS.
- FURTHER OPERATING FUNCTIONS OF THE EQUIPMENT ARE SPECIFIED ON THE HYDRAULIC DIAGRAM AND SYSTEM ARRANGEMENT DRAWINGS.
- ELECTRICAL SUPPLIES TO WATERTIGHT-DOOR-SYSTEMS ARE SUBJECT TO RECOMMENDATIONS MADE BY THE INTERNATIONAL CONFERENCE ON "SAFETY OF LIFE AT SEA" 1974.
- REFERENCE SHOULD BE MADE TO THE CANADA "SHIPPING ACT" REGARDING PROVISION OF EMERGENCY ELECTRIC POWER FOR OPERATING WATERTIGHT-DOORS WHEN NORMAL SUPPLY FAILS.
- ESTIMATED POWER CONSUMPTION. (HOLDING VALUES ONLY. INRUSH ETC. EXCLUDED).
RELAY PANEL —————180 V/A. (WITH MAXIMUM NUMBER OF RELAYS ENERGISED).
OPEN SOLENOID —————50 V/A.
CLOSE SOLENOID —————50 V/A.
WARNING BELL —————6 V/A.
MOTOR CONTACTOR COIL (M) ———10 V/A.



THIRD ANGLE PROJECTION

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15-WATERTIGHT DOORS. SERIES II.
UNIT SYSTEM CONTROLS
ELECTRICAL SCHEMATIC DIAGRAM.

SCALE
DRAWING NO.
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SHEET 2 OF 2

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