

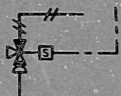
5 20 5 100198
C3-W

TYPICAL INSTRUMENT & CONTROL SYMBOLING EXAMPLES

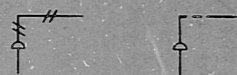
MULTIPLE CONTROL SIGNALS FOR PNEUMATIC OPERATORS
(FOR SIGNAL ACCESSORIES FURNISHED MOUNTED ON OPERATOR REFER TO CONTROL VALVE DATA SHEET, DAMPER SPECIFICATION AND/OR INSTRUMENT AIR SUPPLY P&ID)



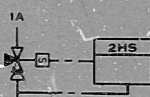
SOLENOID VALVE FURNISHED MOUNTED WITH OPERATOR



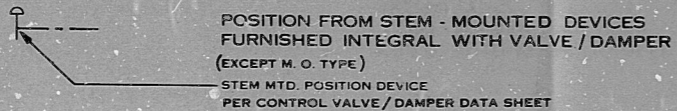
SINGLE CONTROL SIGNAL FOR PNEUMATIC OPERATORS
(FOR SIGNAL ACCESSORIES FURNISHED MOUNTED ON OPERATOR REFER TO CONTROL VALVE DATA SHEET, DAMPER SPECIFICATION AND/OR INSTRUMENT AIR SUPPLY P & ID)



VALVE/DAMPER POSITION SIGNALS



OPEN & CLOSED POSITION LIGHTS INCLUDED WITH HAND SWITCH
(EXCEPT M. O. TYPE)



POSITION FROM STEM - MOUNTED DEVICES FURNISHED INTEGRAL WITH VALVE / DAMPER
(EXCEPT M. O. TYPE)
STEM MTD. POSITION DEVICE PER CONTROL VALVE/DAMPER DATA SHEET



OPEN & CLOSED POSITION LIGHTS, MOUNTED REMOTE FROM HAND SWITCH OR NO HAND SWITCH INCLUDED



OPEN & CLOSED POSITION LIGHTS (OPERATED FROM MOTOR GEAR TRAIN) INCLUDED WITH HAND SWITCH FOR MOTOR-OPERATED VALVES AND DAMPERS

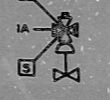
VALVE OPERATOR CONTROLS
TYPICAL FOR OTHER CONTROL DEVICES



DOUBLE ACTING CYLINDER OPERATOR AIR TO OPEN AND AIR TO CLOSE
(ENERGIZE TO OPEN - ENERGIZE TO CLOSE)



DOUBLE ACTING CYLINDER OPERATOR AIR TO OPEN AND AIR TO CLOSE
(LOSS OF ELECTRICAL POWER CLOSURE VALVE)



SPRING - RETURN OPERATOR
(ENERGIZE TO OPEN AND ENERGIZE TO CLOSE)

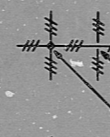


SPRING - RETURN OPERATOR
(ENERGIZE TO OPEN AND DE-ENERGIZE TO CLOSE - VALVE CLOSURE ON ELECTRICAL OR AIR FAILURE)

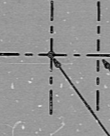
INSTRUMENT & CONTROL SIGNAL SYMBOLS



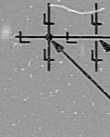
PNEUMATIC ANALOG SIGNAL LINE
(NOT INSTRUMENT AIR SUPPLY - FURN. & INST. BY P.C.)
LINES NOT CONNECTED
LINES CONNECTED



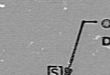
PNEUMATIC ANALOG SIGNAL LINE
(FURN. & INST. BY OTHERS UNLESS OTHERWISE NOTED)
LINES NOT CONNECTED
LINES CONNECTED



ELECTRICAL ANALOG OR DIGITAL SIGNAL
LINES NOT CONNECTED
LINES CONNECTED



HYDRAULIC SIGNAL LINE
(FURN. & INST. BY OTHERS UNLESS OTHERWISE NOTED)
LINES NOT CONNECTED
LINES CONNECTED



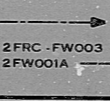
ON-OFF CONTROLLING DEVICE (TYPICAL)



INSTRUMENT AIR SUPPLY SIGNAL
INSTRUMENT AIR SUPPLY SYSTEM CODE (TYPICAL)

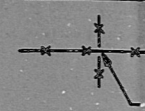


SIGNAL LINE ARROWHEAD WHEN CONTINUED ON ANOTHER P & ID
DRAWING NUMBER
SHEET NUMBER
M-200-1
2FRC-FW003
2FW001A
DEVICES SIGNAL LINE CONNECTS TO ON REFERENCED P&ID



SIGNAL LINE CONTINUATION ARROWHEAD WHEN CONTINUED ON SAME P & ID
2FRC-FW003
2FW001A
DEVICES SIGNAL LINE CONNECTS TO

INSTRUMENT SENSING PIPELINE SYMBOLS

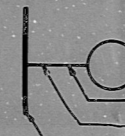


CAPILLARY TUBING (FILLED SYSTEM)
LINES NOT CONNECTED

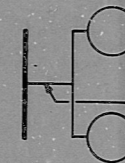


FILLED INSTRUMENT SENSING LINE SEAL

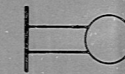
SENSING PIPELINES NOT NUMBERED



PROCESS-CONNECTED SENSING LINE FOR SINGLE INSTRUMENT
PIPELINE SYMBOL PER SHEET 1 (TYPICAL)
VALVE & PIPING DETAILS PER INSTRUMENT INSTALLATION DETAILS (TYPICAL)
PROCESS PIPE OR VESSEL (TYPICAL)



PROCESS-CONNECTED SENSING LINE COMMON TO MULTIPLE INSTRUMENTS
MAIN LINE SHUTOFF (ROOT) VALVE COMMON UNLESS SHOWN OTHERWISE (TYPICAL)



MULTIPLE PROCESS-CONNECTED SENSING LINES TO SINGLE INSTRUMENT



MULTIPLE PROCESS-CONNECTED SENSING PIPELINES TO MULTIPLE INSTRUMENTS

NUMBERED SENSING PIPE LINES

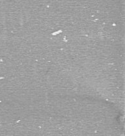


VALVE & PIPING SIZES AND DETAILS PER INSTRUMENT INSTALLATION DETAILS (TYPICAL)

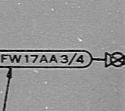
SINGLE NUMBER METHOD FOR IDENTIFICATION OF COMPLETE LINE



TAKEOFF PIPE LINE NUMBER



BRANCH LINE NUMBER NOT ON PIPE LINE LIST (BRANCH PIPING SPECIFIED UNDER TAKEOFF PIPE LINE NUMBER)



MULTIPLE NUMBER METHOD

FOR REFERENCE ONLY
SPEC. NO. H-2939
DATE RECD 02-12-81

TERA
APERTURE
CARD

P & ID STANDARD SYMBOLS DRAWING		
DATE	APPROVED	STANDARD
3-12-73	<i>[Signature]</i>	MF-270.10.1 SH. 4 OF 4

DRAWING RELEASE RECORD				DRAWING RELEASE RECORD					
REV.	SPEC. NO.	DATE	DESCRIPTION	FILM	REV.	SPEC. NO.	DATE	DESCRIPTION	FILM
1	H-2255	3/9/75	M-20 SHT. 5 OF 5 W&S MF-270.10.1 SH. 4 OF 4						



PROJECT NUMBER
2130

SCALE
1:1

DATE
3-9-75

DATE
3-9-75

DATE
3-9-75

DATE
3-9-75

P&ID INDEX & SYMBOLS

MR. H. ZIMMER NUCLEAR POWER STATION UNIT-1
THE CHINESE NATIONAL GAS & ELECTRIC COMPANY
OCCUPANTS & SOUTHERN OHIO ELECTRIC COMPANY
THE DAYTON POWER AND LIGHT COMPANY

SARGENT & LUNDY
ENGINEERS
CHICAGO

DRAWING NO.
M-20

SHEET 5 OF 5

8105-PDR

8104010272

