Fluid Power Design Data Sheet

REVISED SHEET 80 - EVOLUTION DESIGN DATA FILE

JIC STANDARD GRAPHIC SYMBOLS FOR ELECTRICAL LADDER DIAGRAMS

These graphic symbols are the ones used most often on ladder diagrams for fluid power electrical control circuits. They are standard JIC (Joint Industrial Council) symbols as approved and adopted by the National Machine Tool Builders Association (NMTBA). They have been extracted from the Appendix of the NMTBA Specification EGPI-1967. Remember that JIC Standards are advisory only. Their use in industry or trade is entirely voluntary.

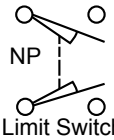
Limit Switches


Limit Switch, N.O.
Non-Actuated

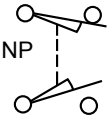

Limit Switch, N.O.
Held Closed


Limit Switch, N.C.
Non-Actuated

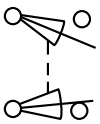

Limit Switch, N.C.
Held Open



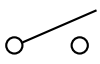
Limit Switch
Neutral Position
Non-Actuated



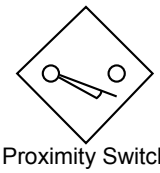
Limit Switch
Neutral Position
Actuated

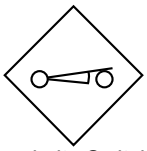

Limit Switch
Maintained Position

Toggle Switches


Toggle Switch

Proximity Switches


Proximity Switch
Normally Open


Proximity Switch
Normally Closed

Pressure or Vacuum Switches


Vacuum or Pressure
Switch, Norm. Open


Vacuum or Pressure
Switch, Norm. Closed

Temperature Switches


Temperature Switch
Normally Open


Temperature Switch
Normally Closed

Foot Switches


Foot Switch
Normally Open


Foot Switch
Normally Closed

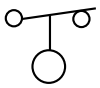
Flow Switches


Flow Switch
Normally Open

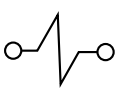

Flow Switch
Normally Closed

Liquid Level Switches

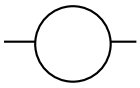

Liquid Level Switch
Normally Open

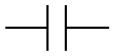

Liquid Level Switch
Normally Closed

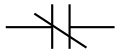
Load Devices


Load Device
Solenoid Valve, etc.

Relay Coils and Contacts


Relay or
Timer Coil

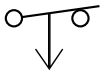

Relay Contact
Normally Open


Relay Contact
Normally Closed

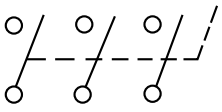

Relay Contact, Time
Delay After Coil Ener-
gized - Normally Open


Relay Contact, Time
Delay After Coil Ener-
gized - Normally Closed

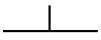

Relay Contact, Time
Delay After Coil De-ener-
gized - Normally Open

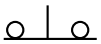

Relay Contact, Time
Delay After Coil De-ener-
gized - Normally Closed

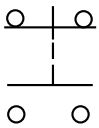
Disconnect Switch

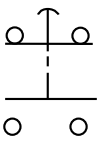

Disconnect
Switch

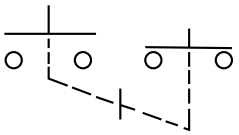
Pushbuttons


Pushbutton
Normally Open

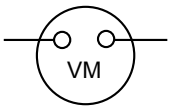

Pushbutton
Normally Closed


Pushbutton
Double Circuit

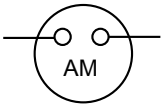

Pushbutton
Mushroom Head


Pushbutton
Maintained Contact

Meters



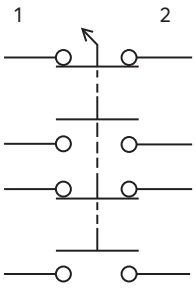
Voltmeter



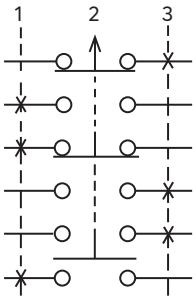
Ammeter

Continued on the back
side of this sheet

Selector Switches

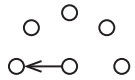


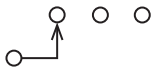
Selector Switch
2-Position

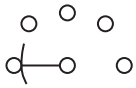


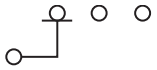
Selector Switch
3-Position

Rotary Selector Switches


Rotary Selector Switch
Non-Bridging Contacts

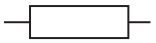

Alternate Symbol
Rotary Selector Switch
Non-Bridging Contacts

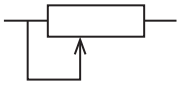

Rotary Selector Switch
Bridging Contacts

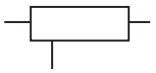

Alternate Symbol
Rotary Selector Switch
Bridging Contacts

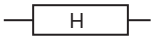
Resistors


Potentiometer


Resistor

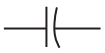

Rheostat


Tapped Resistor

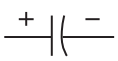


Heating Element

Capacitors

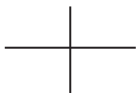

Capacitor, Fixed

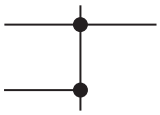

Capacitor Adjustable



Capacitor, Electrolytic

Miscellaneous

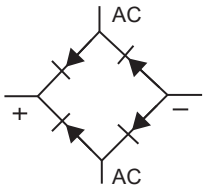

Conductors
Not Connected


Conductors
Connected

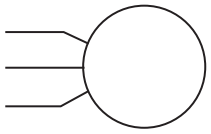
Battery

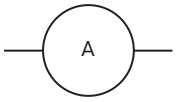

Fuse


Rectifier



Bridge Rectifier

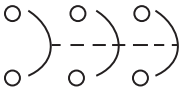

Three-Phase
Electric Motor

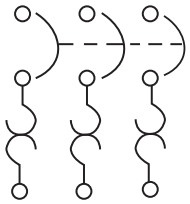


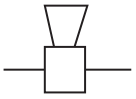
D-C Electric Motor

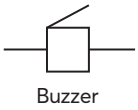

Thermal Overload

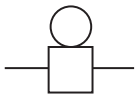

Alternate Symbol
Thermal Overload

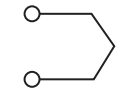

Circuit Interrupter

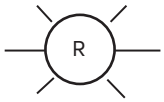

Circuit Breaker


Horn, Siren, etc.


Buzzer


Bell

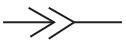

Thermocouple

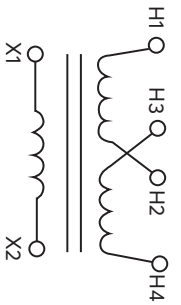


Pilot Lamp

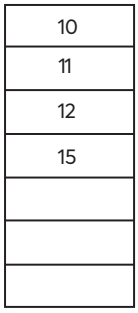

Earth Ground


Chassis Ground, not
Neccessarily Earth Ground


Plug & Receptable



Control Transformer



Terminal Board

DEVICE DESIGNATIONS

These abbreviations are intended for use on diagrams in connection with the corresponding symbol from the charts above to amplify the information on the function of a device. Suitable prefix numbers (1, 2, 3, 4, etc.) may be added to distinguish between several similar devices. Suffix letters (A, B, C, D, etc.) may be added to distinguish between several sets of contacts on the same device.

Examples: 1-CR-A, 1-CR-B, 3-CR-A, etc.

AM - Ammeter	FLS - Flow Switch
CAP - Capacitor	FS - Float Switch
CB - Circuit Breaker	FTS - Foot Switch
CI - Circuit Interrupter	HTR - Heating Element
CON - Contractor	FU - Fuse
CR - Control Relay	GRD - Ground
CS - Cam Switch	LS - Limit Switch
CTR - Counter	LT - Pilot Light
F - Forward	M - Motor Starter
FB - Fuse Block	MTR - Motor

PB - Pushbutton	SOC - Socket
POT - Potentiometer	SOL - Solenoid
PRS - Proximity Switch	SS - Selector Switch
PS - Pressure Switch	T - Transformer
R - Reverse	TAS - Temp. Actuated Switch
REC - Rectifier	TB - Terminal Block
RECEP - Receptacle	T/C - Thermocouple
RES - Resistor	TGS - Toggle Switch
RH - Rheostat	TR - Time Delay Relay
RSS - Rotary Selector Switch	VM - Voltmeter
S - Switch	VS - Vacuum Switch