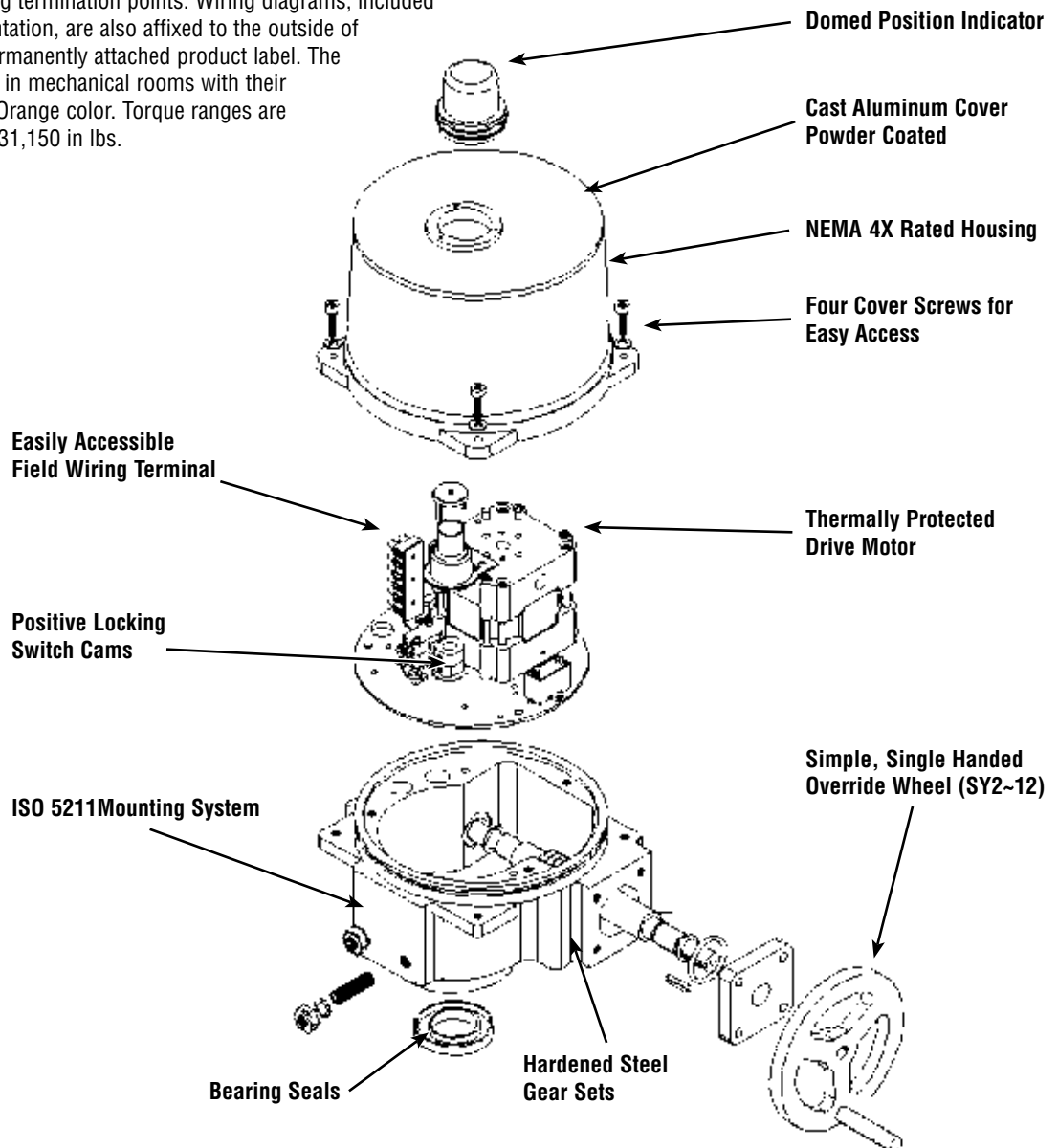


SY Series Actuators

Belimo's SY series electric actuators have been designed to mate with our HS(U) and SHP... series butterfly valves and other quarter turn valve applications.

The patented gear drive mechanism provides for efficient, smooth operation while allowing easy manual override at any time. Drawing upon years of experience in the actuation industry, we have incorporated the most desirable features into the SY product range.

All units have NEMA 4X ratings, easily visible position indicators, international standard ISO5211 mounting systems, internal thermal motor overload protection, heater, dual auxiliary Form C switches, and easily accessible wiring termination points. Wiring diagrams, included in all printed documentation, are also affixed to the outside of the housing on the permanently attached product label. The units are easily visible in mechanical rooms with their characteristic Belimo Orange color. Torque ranges are available from 310 to 31,150 in lbs.



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SY...24 Series Non-Spring Return Actuator



Technical Data - 24 VAC



Application:

The SY actuators are NEMA 4, 4x rated and designed to meet the needs of HVAC and Commercial applications. Offered on the HSU and HS butterfly valve series, these actuators are available for on/off and modulating applications. Depending on the application, they are available in 24 VAC, 120 VAC and 230 VAC.

Technical Data	
Electrical Connection	1/2" conduit connector, screw terminals
Overload Protection	thermally protected 135°C cut-out
Motor Protection	H Class insulation (SY-1), F Class (SY-2...5)
Gear train	high alloy steel gear sets, self locking
Operating Range	(SY...-24) on/off, floating point (SY...24SR) 2-10 vdc (SY...24MFT) 2-10 vdc, 4-20mA, 0-10 VDC
Sensitivity	(SY...24SR/MFT) 0.4mA/200mV
Reversal Hysteresis	(SY...24SR/MFT) 1.0mA/500mV
Feedback	(SY...24SR/MFT) 2-10 vdc
Angle of Rotation	90°
Direction of Rotation	reversible
Position Indication	top mounted domed indicator
Internal Humidity Control	resistive heating element
Auxiliary Switches	(2) SPDT, 10A 250 VAC factory set for 5° and 85° change of state
Ambient Temperature	-22°F to +150°F [-30°C to +65°C]
Humidity Range	up to 95%
Housing Type	IP67, NEMA 4, 4X
Housing Material	die cast aluminum alloy
Agency Listings	ISO, CE, cCSAus

Power Supply 24 VAC 50/60Hz, single phase

Model	Torque	Speed	Power Consumption	Override	Weight
SY1-24(P)	35Nm/310 in-lbs	15s	1.8A	8mm Wrench	2.0kg/4.9 lb.
SY2-24(SR/MFT)	90Nm/801 in-lbs	15s	3.0A	Hand Wheel	11kg/24.5 lb.
SY3-24(SR/MFT)	150Nm/1335 in-lbs	22s	3.0A	Hand Wheel	11kg/24.5 lb.
SY4-24(SR/MFT)	400Nm/3560 in-lbs	16s	6.0A	Hand Wheel	22kg/48.5 lb.
SY5-24(SR/MFT)	500Nm/4450 in-lbs	22s	6.5A	Hand Wheel	22kg/48.5 lb.

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Application:

The SY actuators are NEMA 4, 4x rated and designed to meet the needs of HVAC and Commercial applications. Offered on the HSU and HS butterfly valve series, these actuators are available for on/off and modulating applications. Depending on the application, they are available in 24 VAC, 120 VAC and 230 VAC. The SY series actuators are fractional horsepower devices, and utilize half-wave power supplies. Observe wire sizing and transformer sizing requirements.

Technical Data

Electrical Connection	½" conduit connector, screw terminals
Overload Protection	thermally protected 135°C cut-out
Motor Protection	H Class insulation (SY-1), F Class (SY-2...12)
Gear train	high alloy steel gear sets, self locking
Operating Range	(SY...-110) on/off, floating point (SY...120SR) 2-10 vdc (SY...120MFT) 2-10 vdc, 4-20mA, 0-10 VDC
Sensitivity	(SY...120SR/MFT) 0.4mA/200mV
Reversal Hysteresis	(SY...120SR/MFT) 1.0mA/500mV
Feedback	(SY...120SR/MFT) 2-10 vdc
Angle of Rotation	90°
Direction of Rotation	reversible
Position Indication	top mounted domed indicator
Internal Humidity Control	resistive heating element
Auxiliary Switches	(2) SPDT, 5A 250 VAC factory set for 5° and 85° change of state
Ambient Temperature	-22°F to +150°F [-30°C to +65°C]
Humidity Range	up to 95%
Housing Type	IP67, NEMA 4, 4X
Housing Material	die cast aluminum alloy
Agency Listings	ISO, CE, cCSAus

Power Supply 120 VAC 50/60Hz, single phase

Model	Torque	Speed 60Hz	Speed 50Hz	Power Consumption	Override	Weight
SY1-110(P)	35Nm/310 in-lbs	12s	13s	0.5A	8mm Wrench	2.0kg/4.9 lb.
SY2-120(SR/MFT)	90Nm/801 in-lbs	15s	17s	1.0A	Hand Wheel	11kg/24.5 lb.
SY3-120(SR/MFT)	150Nm/1335 in-lbs	22s	26s	1.0A	Hand Wheel	11kg/24.5 lb.
SY4-120(SR/MFT)	400Nm/3560 in-lbs	16s	18s	1.3A	Hand Wheel	22kg/48.5 lb.
SY5-120(SR/MFT)	500Nm/4450 in-lbs	22s	25s	1.5A	Hand Wheel	22kg/48.5 lb.
SY6-120(SR/MFT)	650Nm/5785 in-lbs	28s	31s	1.8A	Hand Wheel	22kg/48.5 lb.
SY7-120(SR/MFT)	1000Nm/8900 in-lbs	46s	55s	3.2A	Hand Wheel	36kg/79.5 lb.
SY8-120(SR/MFT)	1500Nm/13350 in-lbs	46s	55s	4.0A	Hand Wheel	36kg/79.5 lb.
SY9-120(SR/MFT)	2000Nm/17800 in-lbs	58s	70s	3.2A	Hand Wheel	56kg/123.5 lb.
SY10-120(SR/MFT)	2500Nm/22250 in-lbs	58s	70s	4.0A	Hand Wheel	56kg/123.5 lb.
SY11-120(SR/MFT)	3000Nm/26700 in-lbs	58s	70s	3.0A	Hand Wheel	56kg/123.5 lb.
SY12-120(SR/MFT)	3500Nm/31150 in-lbs	58s	70s	4.0A	Hand Wheel	56kg/123.5 lb.

SY...230 Series Non-Spring Return Actuator



Technical Data - 230 VAC



Application:

The SY actuators are NEMA 4, 4x rated and designed to meet the needs of HVAC and Commercial applications. Offered on the HSU and HS butterfly valve series, these actuators are available for on/off and modulating applications. Depending on the application, they are available in 24 VAC, 120 VAC and 230 VAC.

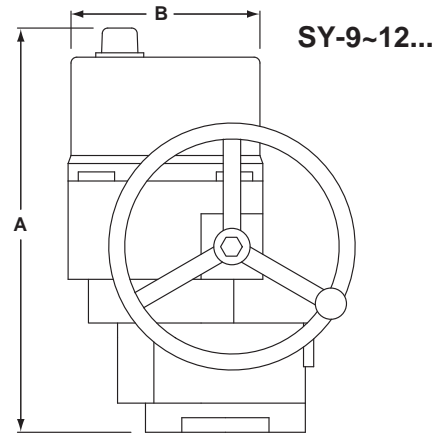
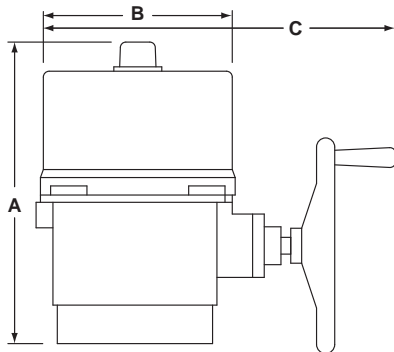
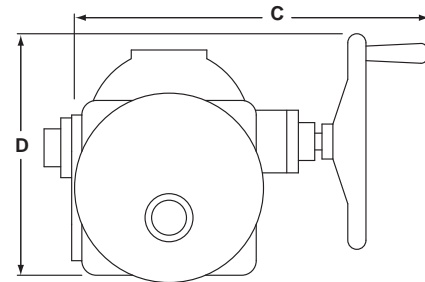
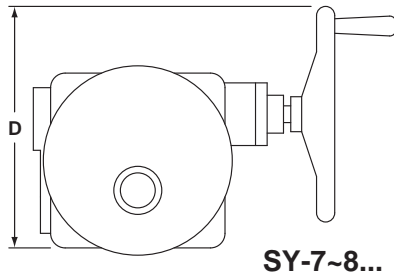
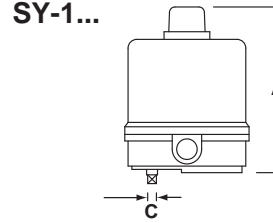
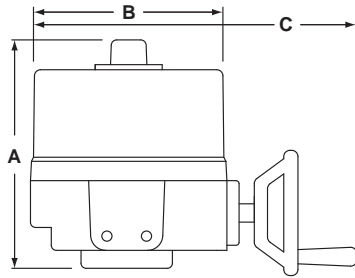
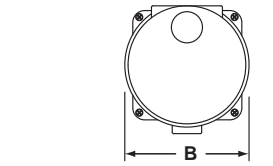
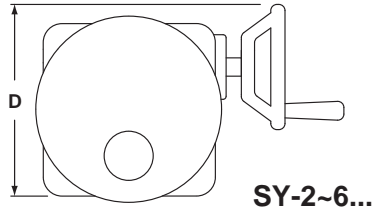
Technical Data

Electrical Connection	½" conduit connector, screw terminals
Overload Protection	thermally protected 135°C cut-out
Motor Protection	H Class insulation (SY-1), F Class (SY-2...12)
Gear train	high alloy steel gear sets, self locking
Operating Range	(SY...-220) on/off, floating point (SY...230SR) 2-10 vdc (SY...230MFT) 2-10 vdc, 4-20mA, 0-10 vdc
Sensitivity	(SY...230SR/MFT) 0.4mA/200mV
Reversal Hysteresis	(SY...230SR/MFT) 1.0mA/500mV
Feedback	(SY...230SR/MFT) 2-10 vdc
Angle of Rotation	90°
Direction of Rotation	reversible
Position Indication	top mounted domed indicator
Internal Humidity Control	resistive heating element
Auxiliary Switches	(2) SPDT, 5A 250 VAC factory set for 5° and 85° change of state
Ambient Temperature	-22°F to +150°F [-30°C to +65°C]
Humidity Range	up to 95%
Housing Type	IP67, NEMA 4, 4X
Housing Material	die cast aluminum alloy
Agency Listings	ISO, CE, cCSAus

Power Supply

230 VAC 50/60Hz, single phase

Model	Torque	Speed 60Hz	Speed 50Hz	Power Consumption	Override	Weight
SY1-220(P)	35Nm/310 in-lbs	12s	13s	0.3A	8mm Wrench	2.0kg/4.9 lb.
SY2-230(SR/MFT)	90Nm/801 in-lbs	15s	17s	0.5A	Hand Wheel	11kg/24.5 lb.
SY3-230(SR/MFT)	150Nm/1335 in-lbs	22s	26s	0.5A	Hand Wheel	11kg/24.5 lb.
SY4-230(SR/MFT)	400Nm/3560 in-lbs	16s	18s	0.6A	Hand Wheel	22kg/48.5 lb.
SY5-230(SR/MFT)	500Nm/4450 in-lbs	22s	25s	0.7A	Hand Wheel	22kg/48.5 lb.
SY6-230(SR/MFT)	650Nm/5785 in-lbs	28s	31s	0.8A	Hand Wheel	22kg/48.5 lb.
SY7-230(SR/MFT)	1000Nm/8900 in-lbs	46s	55s	1.6A	Hand Wheel	36kg/79.5 lb.
SY8-230(SR/MFT)	1500Nm/13350 in-lbs	46s	55s	2.0A	Hand Wheel	36kg/79.5 lb.
SY9-230(SR/MFT)	2000Nm/17800 in-lbs	58s	70s	1.6A	Hand Wheel	56kg/123.5 lb.
SY10-230(SR/MFT)	2500Nm/22250 in-lbs	58s	70s	2.0A	Hand Wheel	56kg/123.5 lb.
SY11-230(SR/MFT)	3000Nm/26700 in-lbs	58s	70s	1.6A	Hand Wheel	56kg/123.5 lb.
SY12-230(SR/MFT)	3500Nm/31150 in-lbs	58s	70s	2.2A	Hand Wheel	56kg/123.5 lb.



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MODEL	DIM A (MAX)	Add to Dim A for cover removal	DIM B	DIM C (MAX)	DIM D
	Inches [mm]	Inches [mm]	Inches [mm]	Inches [mm]	Inches [mm]
SY1	6.10 [155]	3.94 [100]	4.25 [108]	8mm	-
SY2~3	10.04 [255]	7.48 [190]	7.87 [200]	12.99 [330]	7.87 [200]
SY4~6	12.40 [315]	8.86 [225]	9.21 [234]	14.96 [380]	11.81 [300]
SY7~8	16.54 [420]	8.86 [225]	9.21 [234]	17.72 [450]	13.39 [340]
SY9~12	23.23 [590]	8.86 [225]	10.24 [260]	18.50 [470]	13.78 [350]

Note: ~ indicates range of actuator i.e., SY2~3 = SY-2 and SY-3

24 VAC					
SY1	SY2	SY3	SY4	SY5	
Amps	Amps	Amps	Amps	Amps	Amps
1.8	3	3	6	6.5	
MAX Distance between Actuator and Supply (feet)					
18	55	55			
16	87	87	43	40	
14	140	140	70	65	
12	214	214	107	99	
10	364	364	182	168	
8	543	543	271	250	

110 VAC											
SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12
Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps
0.5	1	1	1.3	1.5	1.8	3.2	4	3.2	4	3	4
MAX Distance between Actuator and Supply (feet)											
18	758	758	583	505	421	237	189	237	189	253	189
16	1190	1190	916	794	661	372	298	372	298	397	298
14	1923	1923	1479	1282	1068	601	481	601	481	641	481
12	2941	2941	2262	1961	1634	919	735	919	735	980	735
10	5000	5000	3846	3333	2778	1563	1250	1563	1250	1667	1250
8	7463	7463	5741	4975	4146	2332	1866	2332	1866	2488	1866

220 VAC											
SY1	SY2	SY3	SY4	SY5	SY6	SY7	SY8	SY9	SY10	SY11	SY12
Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps
0.3	0.5	0.5	0.6	0.7	0.8	1.6	2	1.6	2	1.6	2.2
MAX Distance between Actuator and Supply (feet)											
18	3030	3030	2525	2165	1894	947	758	947	758	947	689
16	4762	4762	3968	3401	2976	1488	1190	1488	1190	1488	1082
14	7692	7692	6410	5495	4808	2404	1923	2404	1923	2404	1748
12	11765	11765	9804	8403	7353	3676	2941	3676	2941	3676	2674
10	20000	20000	16667	14286	12500	6250	5000	6250	5000	6250	4545
8	29851	29851	24876	21322	18657	9328	7463	9328	7463	9328	6784

The NEC mandates that 24 VAC over 100 VA power requires CLASS 1 wiring conduit. Local codes may vary. Do NOT mix CLASS 1 & CLASS 2 circuits in the same conduit. Generally, 24 VAC actuators over 100 VA should be changed to 120 VAC models.

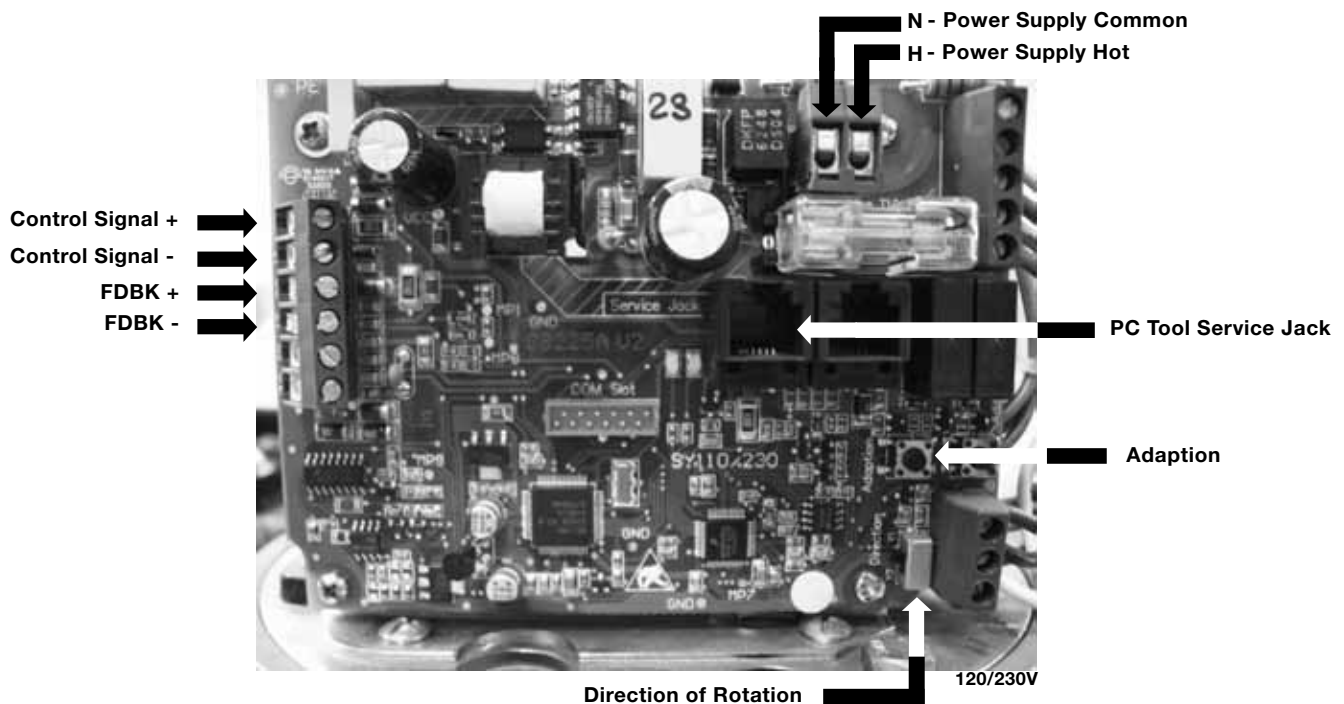
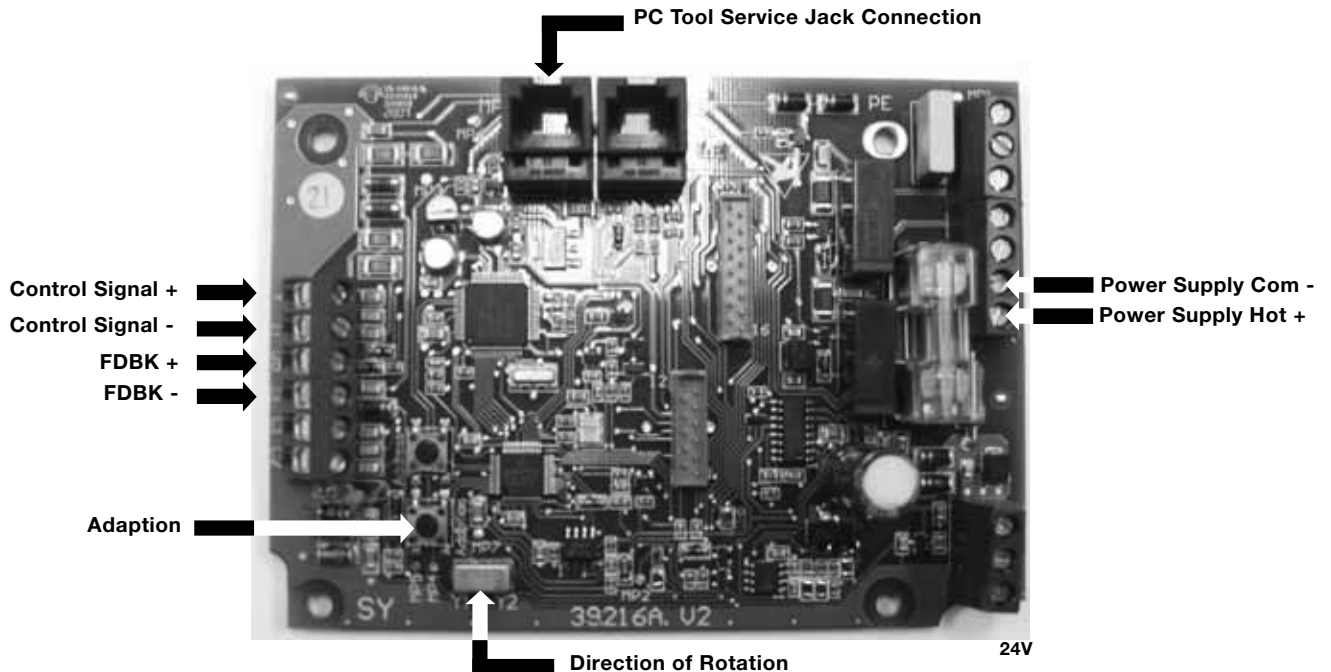
Actuators: SYx-SR/MFT

INSTALLATION NOTES

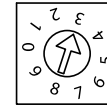
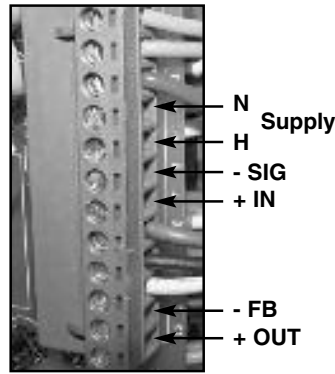
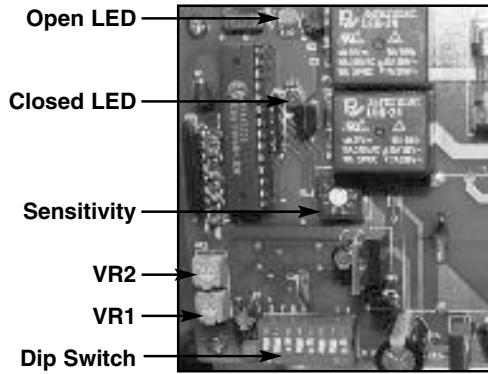
CAUTION

Notes:

1. Motor CAMS have been factory calibrated and should not be moved.
2. An adaption must be performed if any limit switch is adjusted. This will calibrate the beginning and end stopping points. Press the adaption button for 3 seconds and release.



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Sensitivity switch setting is position #3 for factory default. To widen dead-band, select a higher number (up to 9).



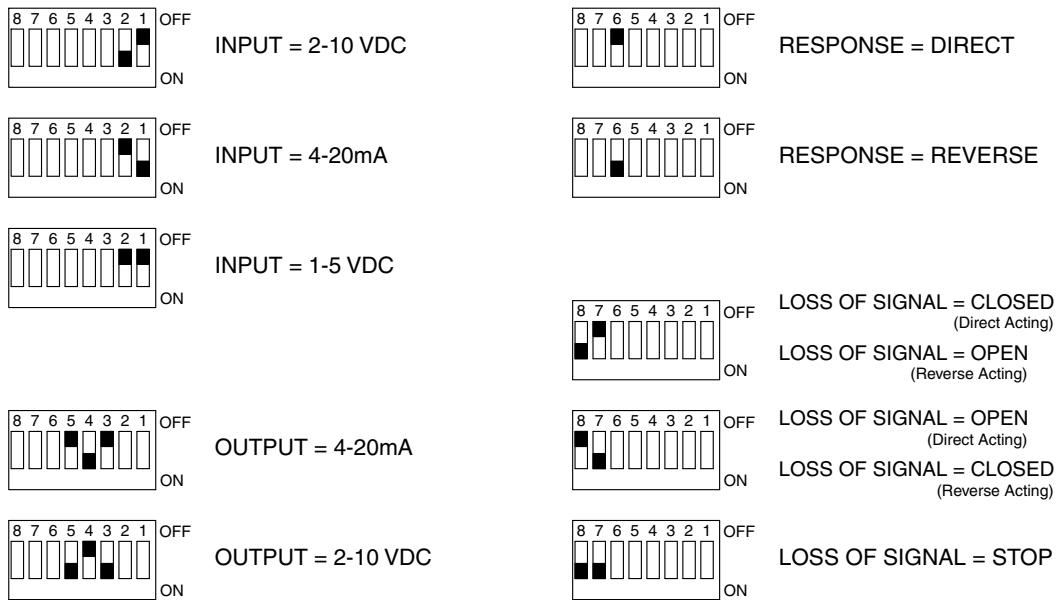
INSTALLATION NOTES

CAUTION

Notes:

1. Do not change sensitivity or dip switch settings with power applied!
2. VR1 and VR2 are factory calibrated and should not be moved.
3. Motor CAMS have been factory calibrated and should not be moved.

Dip Switch Settings



WARNING

Potentiometer (Factory Pre-set)

For 2-position actuators with 1k feedback option

Potentiometer points 1, 2, 3 are wired to terminal blocks 8, 9, 10.

When a valve is closed: 8, 9 → 1k Ω
9, 10 → 0k Ω

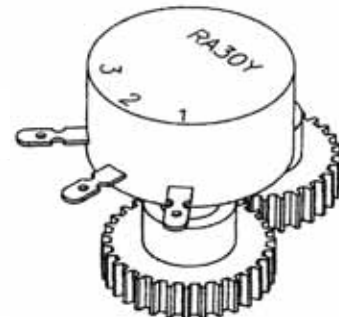
When a valve is opened: 8, 9 → 0k Ω
9, 10 → 1k Ω

For modulating actuators with 1k feedback option*

Potentiometer points 1, 2, 3 are wired to terminal blocks 8, 9, 10.

When a valve is closed: 8, 9 → 1k Ω
9, 10 → 0k Ω

When a valve is opened: 8, 9 → 0k Ω
9, 10 → 1k Ω

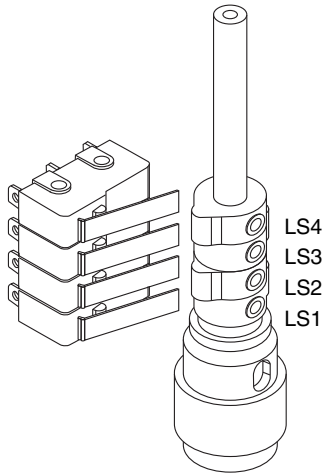


*On modulating actuators **DO NOT** master/slave using optional potentiometer.



Electrical Travel Adjustment (Factory Pre-set)

SY-1



Factory pre-set see chart below. Field adjustable if required

- LS4**
Auxiliary Switch for Closed Indication
- LS3**
Auxiliary Switch for Opened Indication

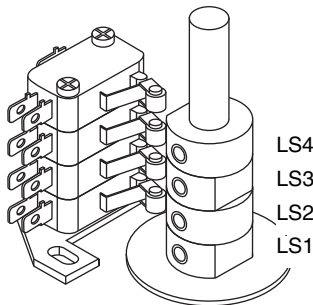
Factory pre-set and calibrated. Do not adjust - warranty voided

- LS2 "CLOSE"**
 - Clockwise Decrease Closed Angle
 - Counter-clockwise Increase Closed Angle
- LS1 "OPEN"**
 - Clockwise Increase Opening Angle
 - Counter-clockwise Decrease Opening Angle



Electrical Travel Adjustment

SY-2-12



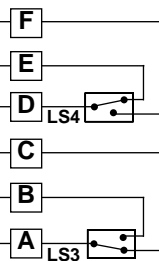
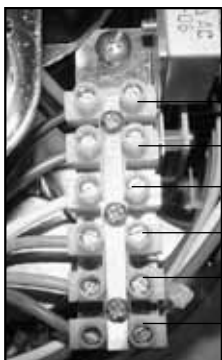
Factory pre-set see chart below. Field adjustable if required

- LS4**
Auxiliary Switch for Closed Indication
- LS3**
Auxiliary Switch for Opened Indication

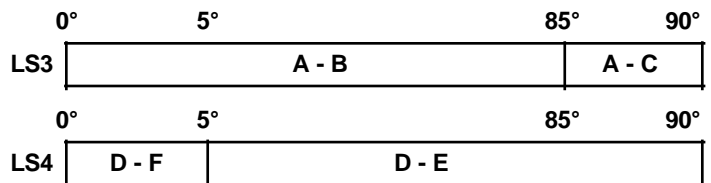
Factory pre-set and calibrated. Do not adjust - warranty voided

- LS2 "CLOSE"**
 - Clockwise Decrease Closed Angle
 - Counter-clockwise Increase Closed Angle
- LS1 "OPEN"**
 - Clockwise Increase Opening Angle
 - Counter-clockwise Decrease Opening Angle

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Switches at left are shown with actuator fully open.



INSTALLATION NOTES



CAUTION

Notes:

1. An adaption must be performed when the limit switches are adjusted. For the SYx-SR/MFT actuators. This will calibrate the beginning and end stopping points. Press the adaption button for 3 seconds and release.

Wiring for Damper Actuators and Control Valves

On/Off, 24V, 120/230V



Actuators: SY1-24 SY1-110 SY2...12-110 SY2...12-220

W546

Hazard Identification

Warnings and Cautions appear at appropriate sections throughout this manual. Read these carefully.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Indicates an action or condition that may cause irreversible damage to the actuator(s) or associated equipment.

Equipment damage!
Power consumption and input impedance must be observed.

NOTES SY1...5-24

33 Each actuator should be powered by a single, isolated control transformer.

- Isolation relays must be used in parallel connection of multiple actuators using a common control signal input.
- "H" cannot be connected to terminal #3 and #4 simultaneously.
- **Required:** Terminal #7 needs to be field wired to enable heater circuit.

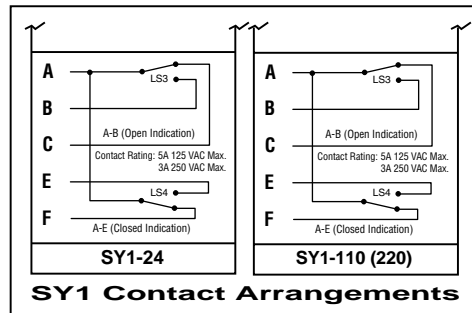
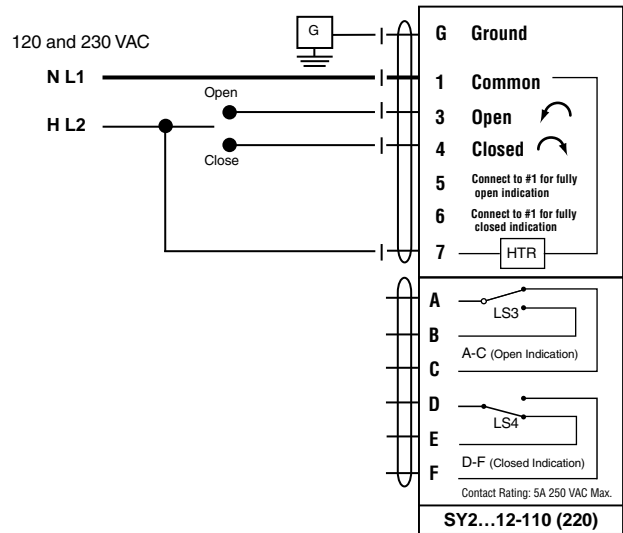
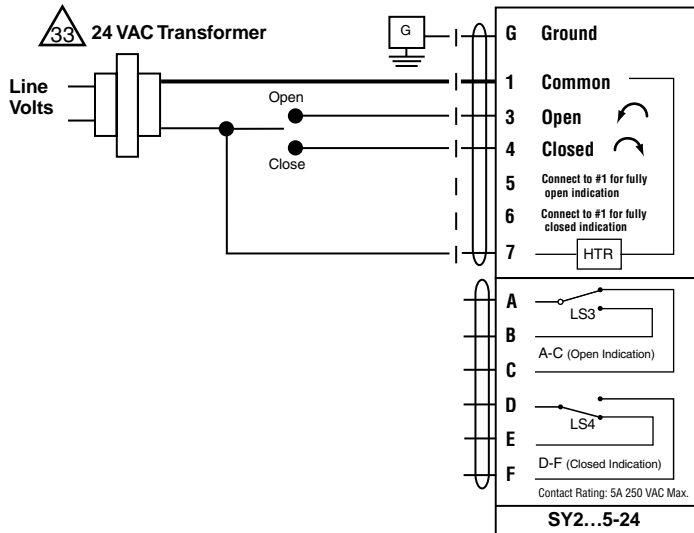
INSTALLATION NOTES

Observe class 1 and class 2 wiring restrictions.

Transformer sizing = SY actuator draw X 1.25 (safety margin)
(Ex. SY2-24 requires 3.0A x 1.25 = 3.75A,
3.75A X 24 VAC = 90VA Transformer).

NOTES SY1...12-110 (220)

- **Caution:** Power Supply Voltage
- Isolation relays must be used in parallel connection of multiple actuators using a common control signal input.
- "H" (L2) cannot be connected to terminal #3 and #4 simultaneously.
- **Required:** Terminal #7 needs to be field wired to enable heater circuit.



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Actuators: SY1-24P SY1-110P SY1-220P

W547

Hazard Identification

Warnings and Cautions appear at appropriate sections throughout this manual. Read these carefully.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Indicates an action or condition that may cause irreversible damage to the actuator(s) or associated equipment.

Equipment damage!
Power consumption and input impedance must be observed.

NOTES SY1...24P

- Each actuator should be powered by a single, isolated control transformer.
- Power supply Com/Neutral and Control Signal "-" wiring to a common is prohibited. Terminals 4 and 6 need to be wired separately.
- Do not change sensitivity or dip switch settings with power applied.

INSTALLATION NOTES

Observe Class 1 and Class 2 wiring restrictions.

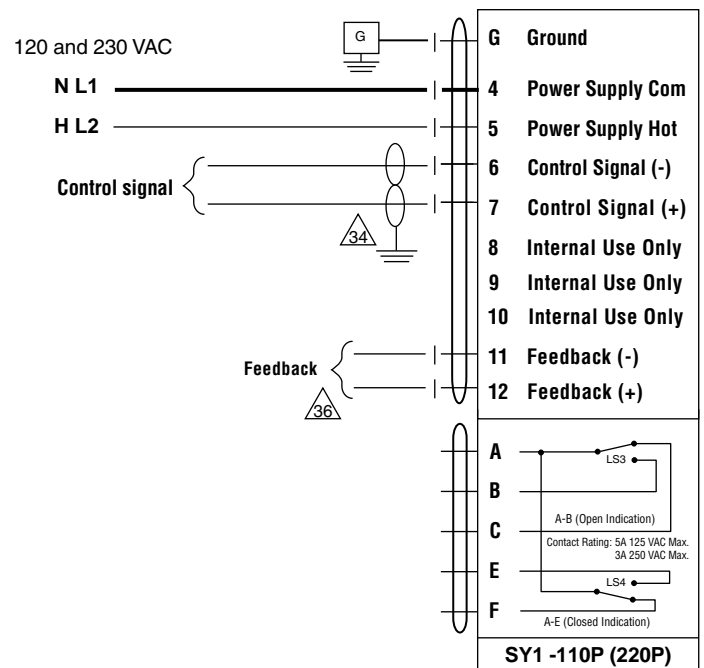
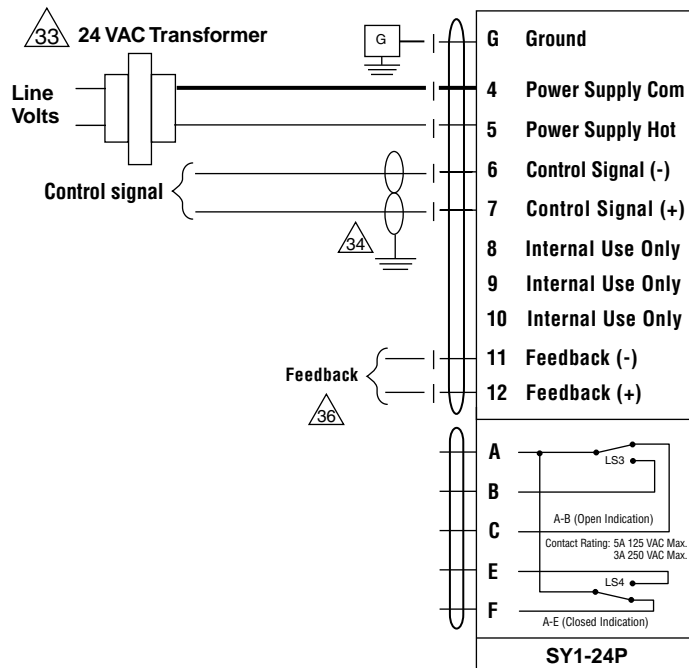
Transformer sizing = SY actuator draw X 1.25 (safety margin)
(Ex. SY2-24 requires 3.0A x 1.25 = 3.75A, 3.75A X 24 VAC = 90VA Transformer)

APPLICATION NOTES

- Ground shielded wire at control panel chassis. Tape back ground at actuator.
- Use of feedback is optional.

NOTES SY1...110P (220P)

- Caution:** Power supply voltage.
- Power supply Com/Neutral and Control Signal "-" wiring to a common is prohibited. Terminals 4 and 6 need to be wired separately.
- Do not change sensitivity or dip switch settings with power applied.



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Wiring for Damper Actuators and Control Valves

Proportional, 24V, 120/230V



Actuators: SY2...5-24SR SY2...12-120SR SY2...12-230SR
 SY2...5-24MFT SY2...12-120MFT SY2...12-230MFT

W547

W549

Hazard Identification

Warnings and Cautions appear at appropriate sections throughout this manual. Read these carefully.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Indicates an action or condition that may cause irreversible damage to the actuator(s) or associated equipment.

Equipment damage!
 Power consumption and input impedance must be observed.

INSTALLATION NOTES

Observe Class 1 and Class 2 wiring restrictions.

Transformer sizing = SY actuator draw X 1.25 (safety margin)
 (Ex. SY2-24 requires 3.0A x 1.25 = 3.75A, 3.75A X 24 VAC = 90VA Transformer)

APPLICATION NOTES

Ground shielded wire at control panel chassis.
 Tape back ground at actuator.

Use of feedback is optional.

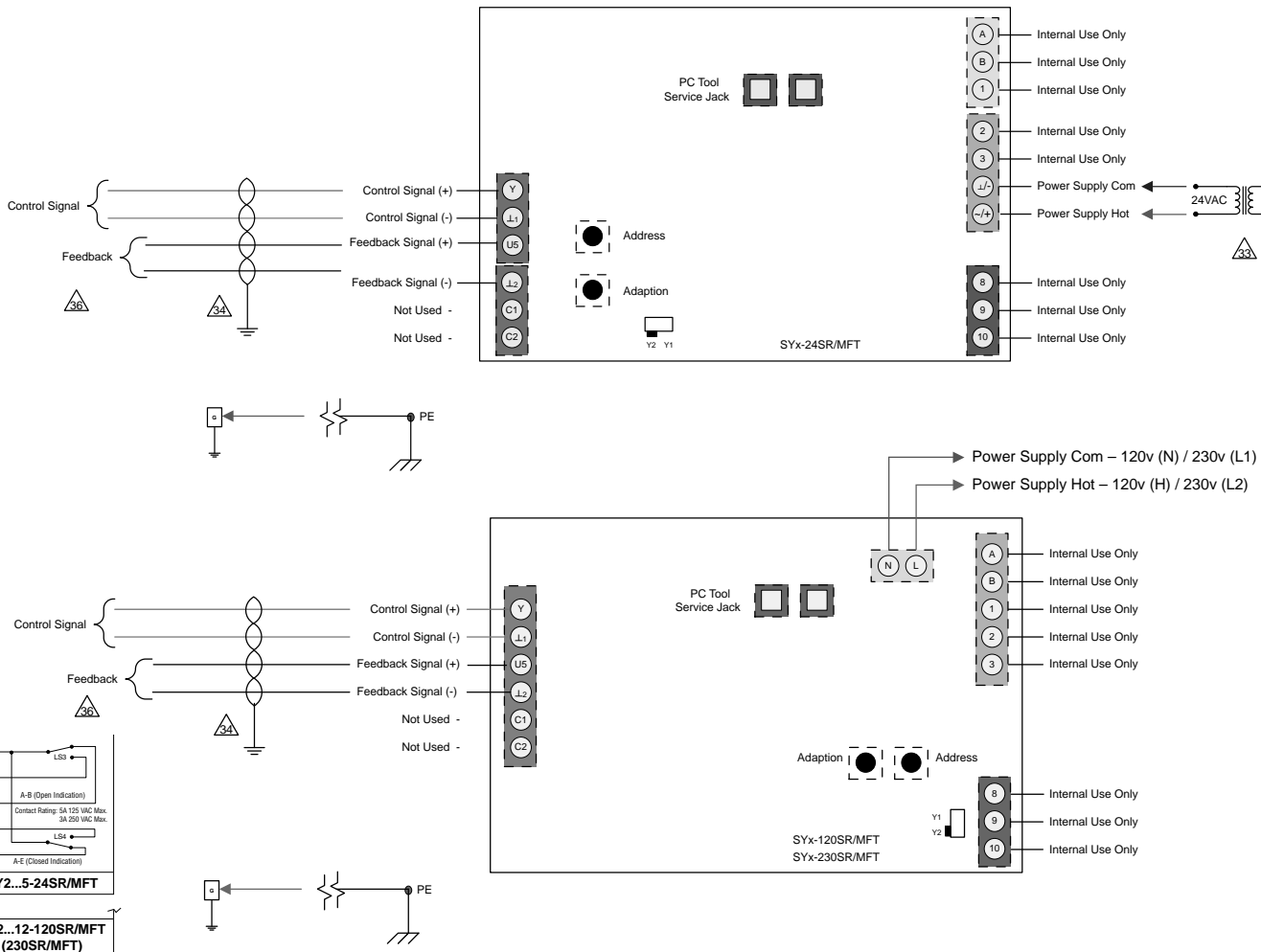
NOTES SY2...5-24SR/MFT

Each actuator should be powered by a single, isolated control transformer.

- Power supply Com/Neutral and Control Signal "-" wiring to a common is prohibited.

NOTES SY2...12-120SR/MFT (230SR/MFT)

- **Caution:** Power supply voltage.



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Actuators: SY1...5-24 SY1...12-110 SY1...12-220

Hazard Identification

Warnings and Cautions appear at appropriate sections throughout this manual. Read these carefully.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Indicates an action or condition that may cause irreversible damage to the actuator(s) or associated equipment.

Equipment damage!
Power consumption and input impedance must be observed.

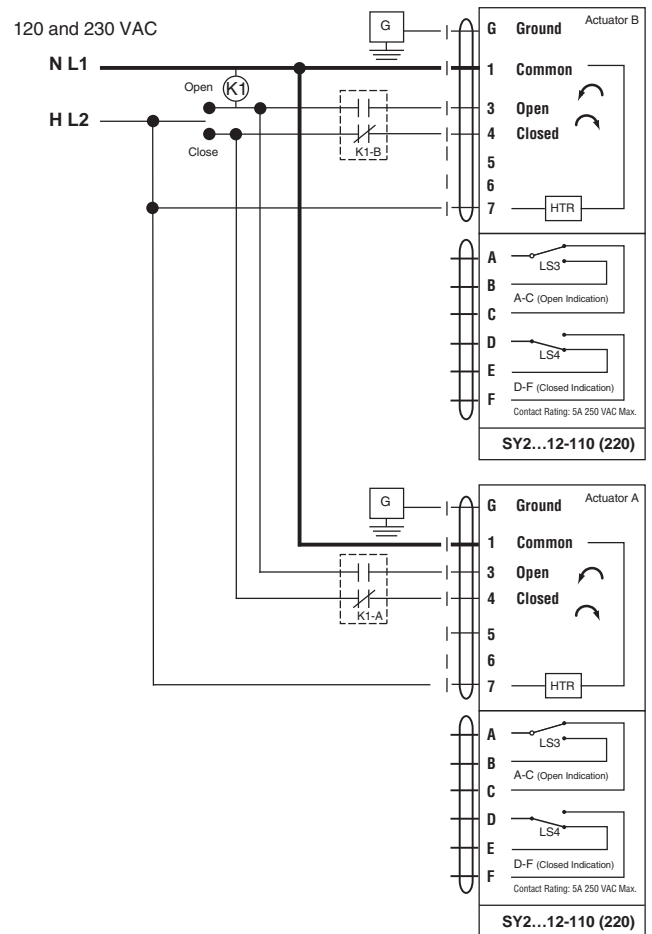
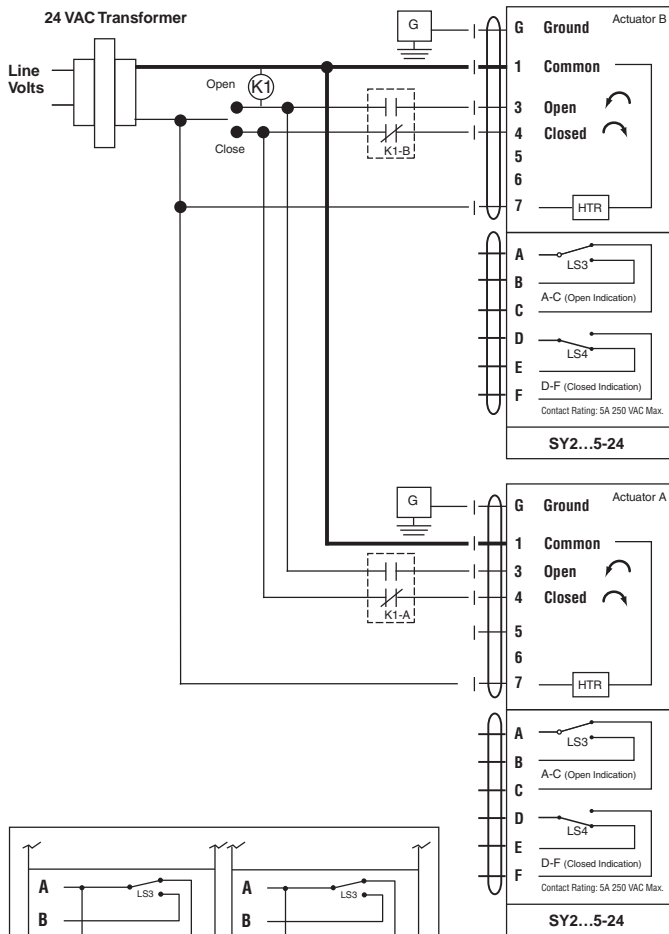
INSTALLATION NOTES

Observe class 1 and class 2 wiring restrictions.

Transformer sizing = SY actuator draw X 1.25 (safety margin)
(Ex. SY2-24 requires 3.0A x 1.25 = 3.75A,
3.75A X 24 VAC = 90VA Transformer).

NOTES

- **Caution:** Power Supply Voltage.
- Isolation relays must be used in parallel connection of multiple actuators using a common control signal input.
- "H" (L2) cannot be connected to terminal #3 and #4 simultaneously.
- **Required:** Terminal #7 needs to be field wired to enable heater circuit.



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SY1 Contact Arrangements

Wiring for Control Valves

Proportional, 24V



W650

Actuators: SY1-24P

Hazard Identification

Warnings and Cautions appear at appropriate sections throughout this manual. Read these carefully.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Indicates an action or condition that may cause irreversible damage to the actuator(s) or associated equipment.

Equipment damage!
Power consumption and input impedance must be observed.

INSTALLATION NOTES

Observe class 1 and class 2 wiring restrictions.

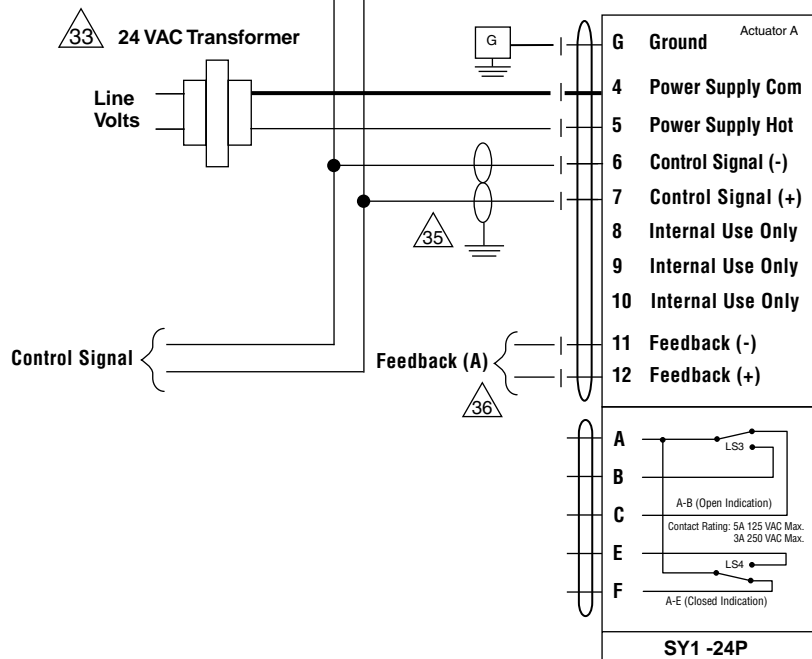
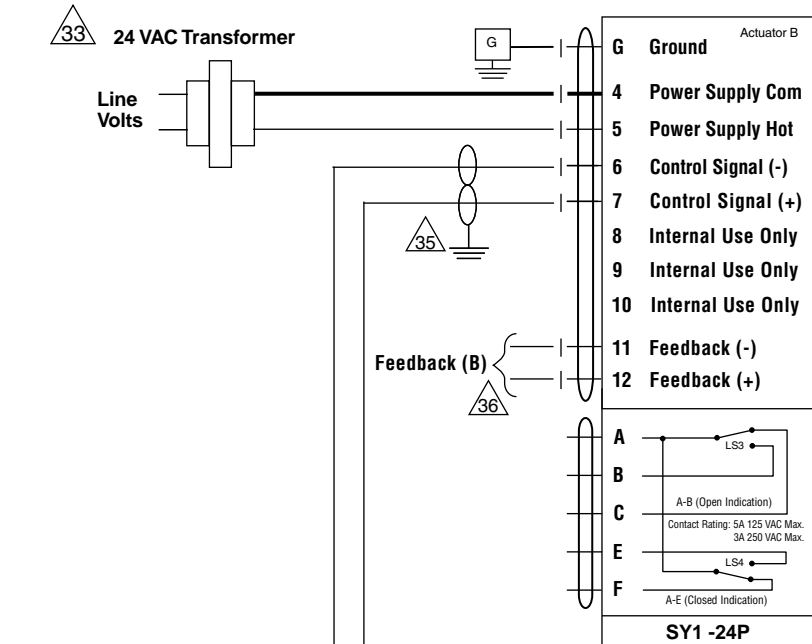
Transformer sizing = SY actuator draw X 1.25 (safety margin)
(Ex. SY2-24 requires 3.0A x 1.25 = 3.75A,
3.75A X 24 VAC = 90VA Transformer).

NOTES SY1-24P

- Each actuator should be powered by a single, isolated control transformer.
- SY1-24P notes:** Power supply Com/Neutral and Control Signal "-" wiring to a common is prohibited. Terminals 4 and 6 need to be wired separately otherwise irreversible damage will occur.
- Do not change sensitivity or dip switch settings with power applied.

APPLICATION NOTES

- 35** Recommended twisted shielded pair for control wiring. Ground shielded wire at control panel chassis. Tape back ground at actuator.
- 36** Use of feedback is optional.



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Actuators: SY2...5-24SR/MFT

Hazard Identification

Warnings and Cautions appear at appropriate sections throughout this manual. Read these carefully.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Indicates an action or condition that may cause irreversible damage to the actuator(s) or associated equipment.

Equipment damage!
Power consumption and input impedance must be observed.

INSTALLATION NOTES

Observe class 1 and class 2 wiring restrictions.

Transformer sizing = SY actuator draw X 1.25 (safety margin)
(Ex. SY2-24 requires 3.0A x 1.25 = 3.75A, 3.75A X 24 VAC = 90VA Transformer).

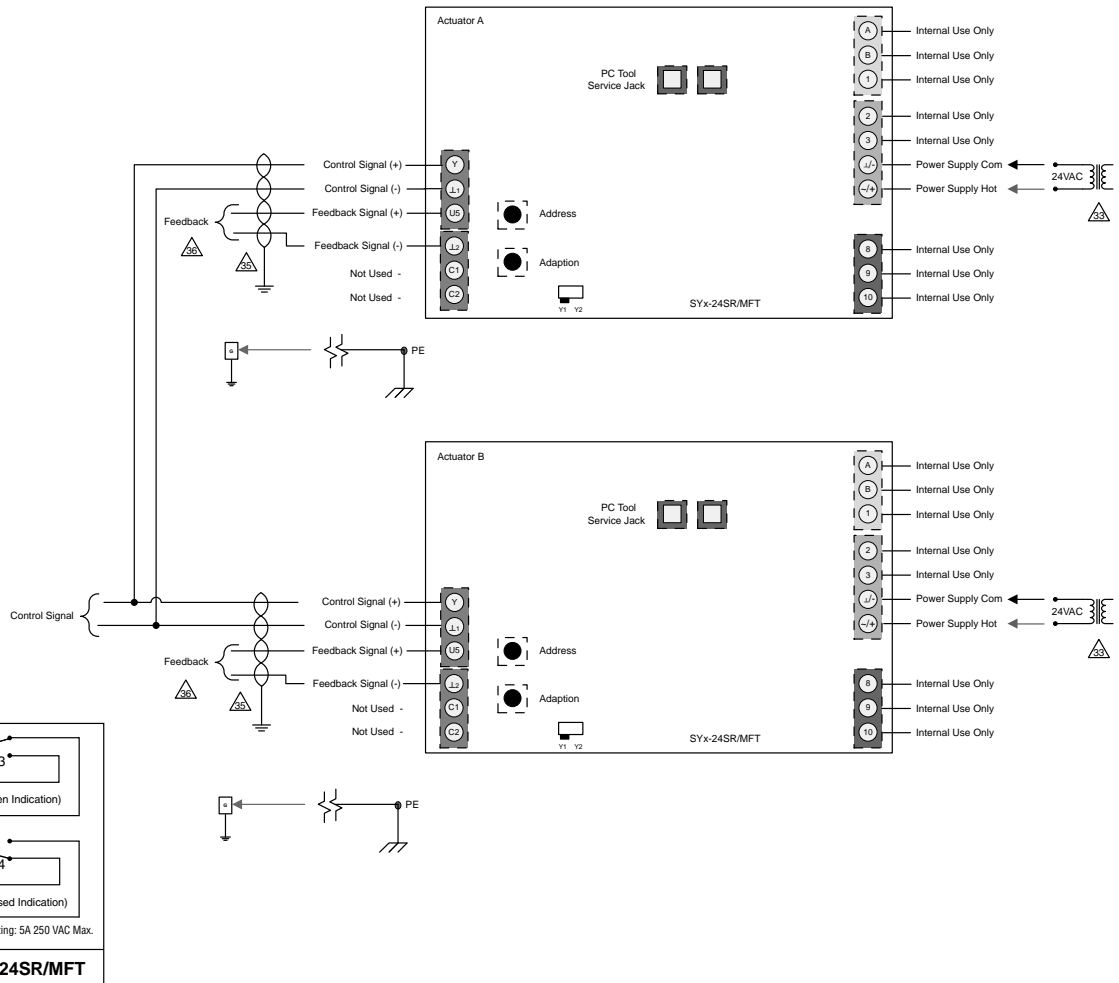
NOTES SY2...5-24SR/MFT

Each actuator should be powered by a single, isolated control transformer.

APPLICATION NOTES

Recommended twisted shielded pair for control wiring. Ground shielded wire at control panel chassis. Tape back ground at actuator.

Use of feedback is optional.



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Wiring for Control Valves

Proportional, 110/220V, 120/230V



Actuators: SY1-110P SY1-220P

W652-1

Hazard Identification

Warnings and Cautions appear at appropriate sections throughout this manual. Read these carefully.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Indicates an action or condition that may cause irreversible damage to the actuator(s) or associated equipment.

Equipment damage!
Power consumption and input impedance must be observed.



INSTALLATION NOTES

Observe class 1 and class 2 wiring restrictions.



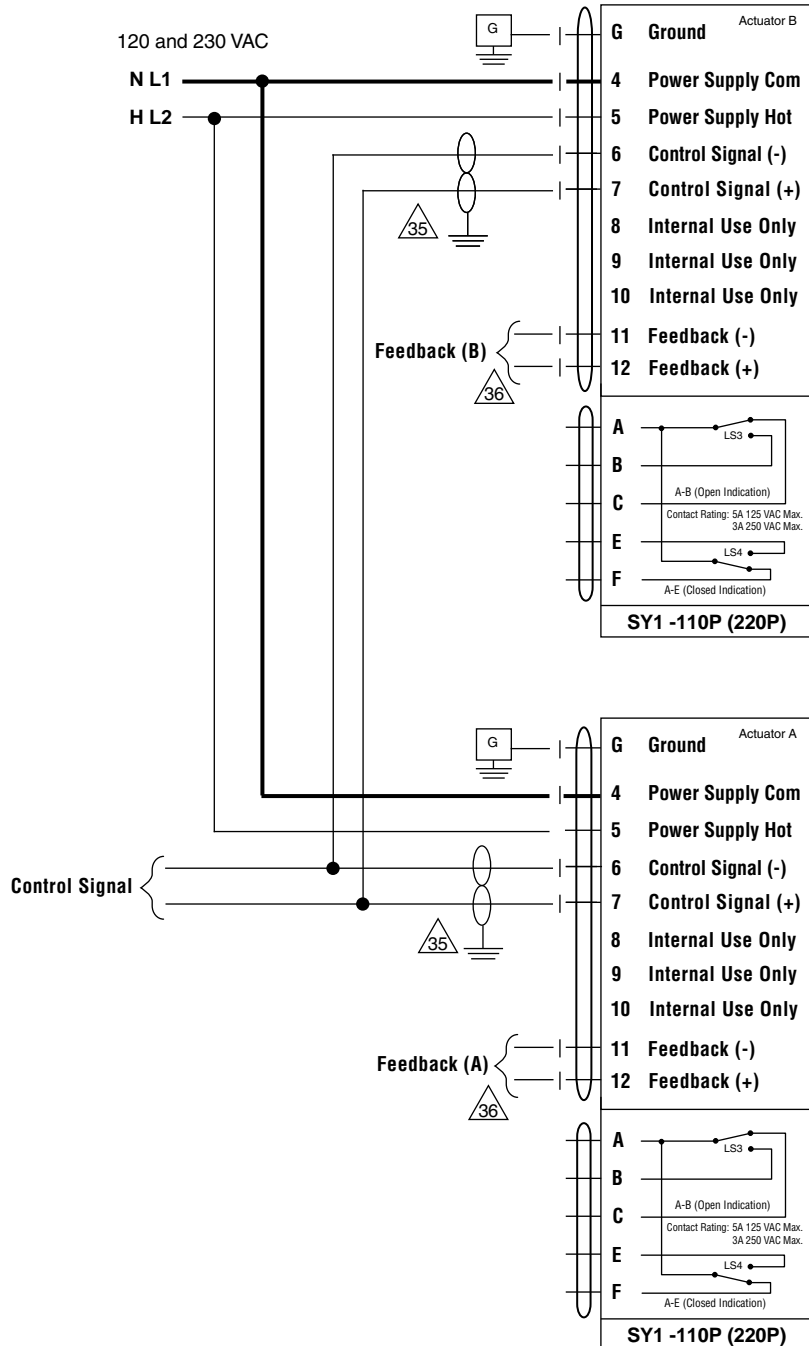
APPLICATION NOTES

- Recommended twisted shielded pair for control wiring. Ground shielded wire at control panel chassis. Tape back ground at actuator.
- Use of feedback is optional.



NOTES SY1-110P (220P)

- **Caution:** Power supply voltage.
- Do not change sensitivity or dip switch settings with power applied.



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Actuators: SY2...12-120SR/MFT SY2...12-230SR/MFT

W552-2

Hazard Identification

Warnings and Cautions appear at appropriate sections throughout this manual. Read these carefully.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



Indicates an action or condition that may cause irreversible damage to the actuator(s) or associated equipment.

Equipment damage!
Power consumption and input impedance must be observed.

INSTALLATION NOTES

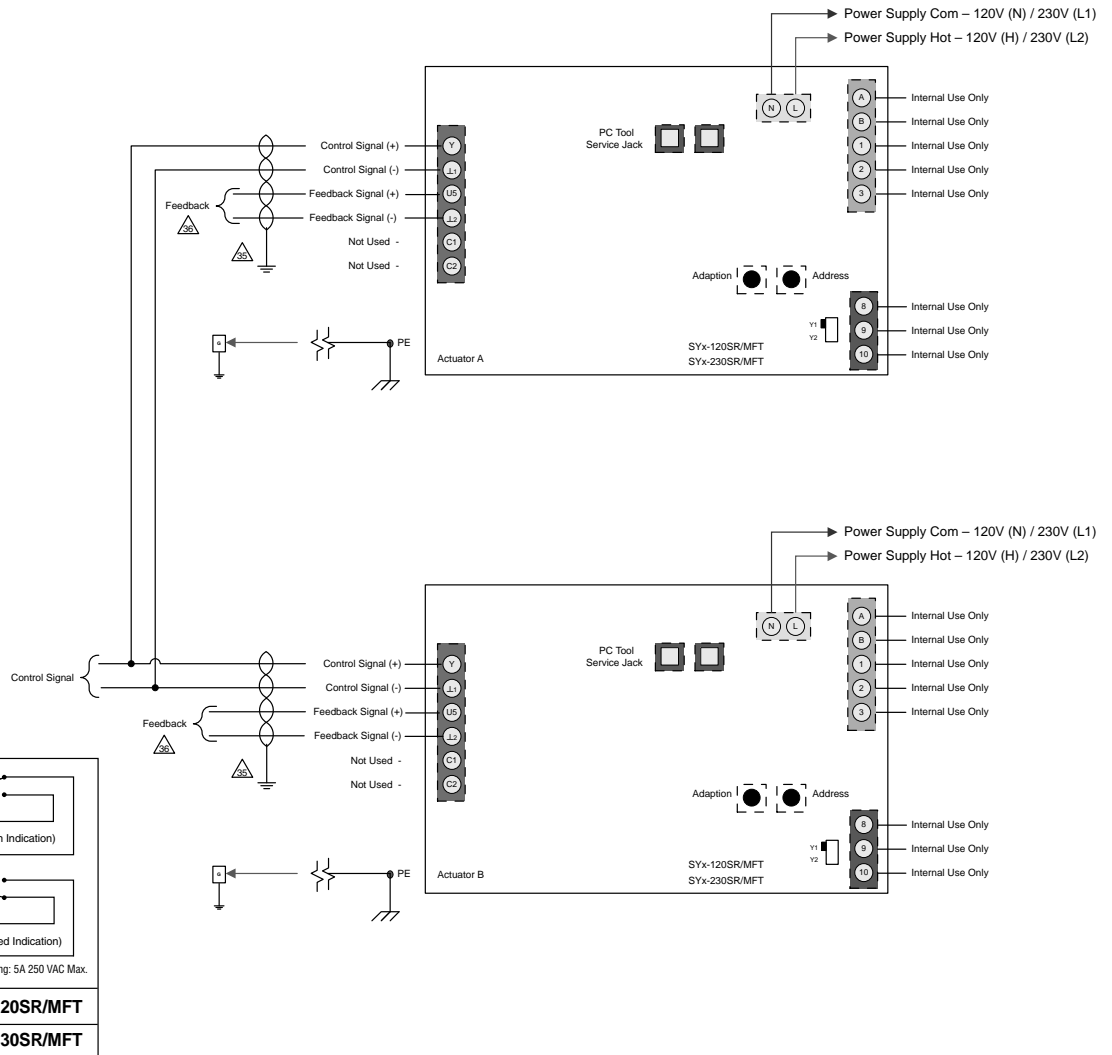
Observe class 1 and class 2 wiring restrictions.

APPLICATION NOTES

-  Recommended twisted shielded pair for control wiring. Ground shielded wire at control panel chassis. Tape back ground at actuator.
-  Use of feedback is optional.

NOTES SY2...12-120SR/MFT (230SR/MFT)

- **Caution:** Power supply voltage.



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