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### Important Note

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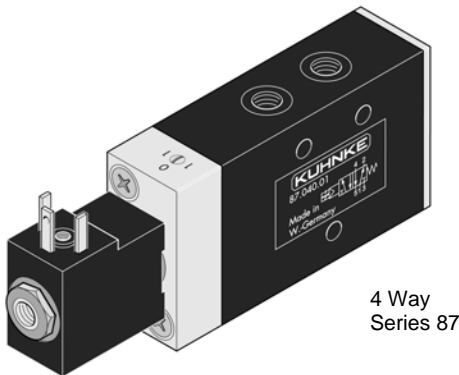
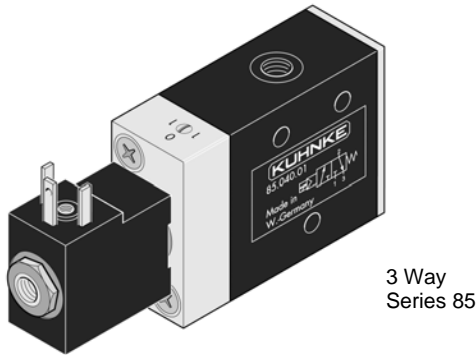
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# Miniature Solenoid Valves

## Series 85, 87 – 3 or 4 Way

Kuhnke Miniature Valves

### Steel Spool Valves, 1/8 ports



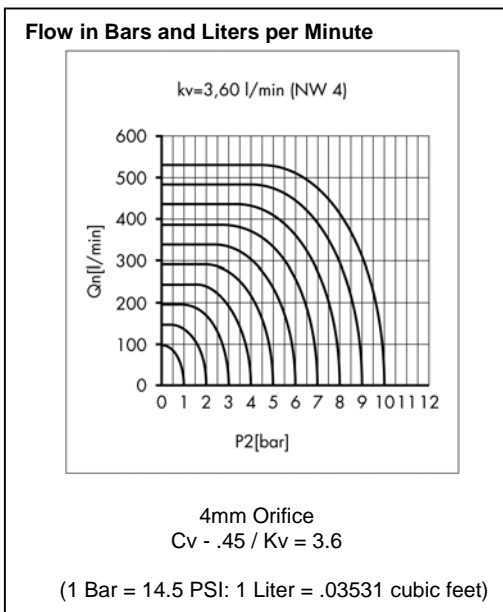
Series 85 and 87 solenoid operated spool valves are constructed of precision lapped steel spools and sleeves. Solenoid coils are encapsulated and have terminals for solder or plug connections. Valves can be mounted in-line or on manifolds.

A characteristic feature of these valves is a hardened and cut steel spool running in a similarly hardened and cut steel liner. The precision fit of these metal elements form the seal. Special cushioning in the covers reduces switching noise to a minimum.

Valves use the standard 16mm (Series 64) coil, in combination with an internal air pilot system, to switch valve position. For replacement purposes, older types with 20 mm coils (Series 65) are available.

All valves are available with a screwdriver manual override for testing, or bypassing the solenoid operator.

## Technical Specifications



**Operating Pressure:**

30 to 145 PSI.

**Vacuum:**

Not applicable.

**Flow Rate:**

25 CFM @ 100 PSI

10 CFM @ 45 PSI

**Cv/Kv:**

Cv - 0.45

Kv - 3.6

**Orifice:**

4mm

**Connection:**

1/8 ports

**Media:**

Filtered Air

**Coils:**

Encapsulated, ground connection standard.

**Power Consumption:**

DC - 1.8W

AC - 5 VA

**Valve Operating Time:**

	AC	DC
Pick-up:	6 ms	12 ms
Drop Out:	7 ms	10 ms

**Dimensions (inches):**

4 way valve -	Single Solenoid	Double Solenoid
Height:	4 1/8	5 7/8
Width:	3/4	3/4
Depth:	1 3/4	1 3/4
Weight:	10 oz.	15 oz.

**Materials:**

Aluminum housing, hardened steel spool and sleeve, Buna N seals, encapsulated coil, plated end caps.

**Average Mechanical Life:**

100 million operations

**Operating Ambient:**

-10°C to 50°C (12°F to 120°F)

**Operation:**

Air piloted system, supply pressure must be connected to port 1.

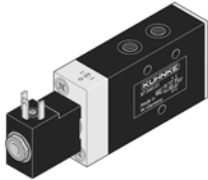
# Miniature Solenoid Valves

Kuhnke Miniature Valves

## Series 85, 87 – 3 or 4 Way

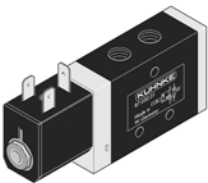
### Selection Chart

#### Valves with Series 64 Coils

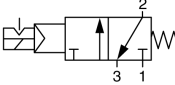
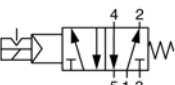
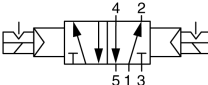


The current design for spool valves includes a Series 64 solenoid system. The coil body is narrower than the valve. Valve ports 1, 3, 5 are offset and when used on manifolds, can be used only on the current design.

#### Valves with Series 65 Coils



Older valve designs for spool valves include a Series 65 solenoid system. The coil body is the same width as the valve. Ports 1, 3, 5 are in line. For replacement of existing valves only.

Description	Coil Type	Catalog number	
		NPT Ports (USA Std.)	Metric Ports (European Std.)
<b>3 Way Single Solenoid Spring Return</b> 	AC	(Not Available)	<b>85040-02-●</b> <i>(85030-02-●)</i>
	DC	(Not Available)	<b>85040-01-●</b> <i>(85030-01-●)</i>
<b>4 Way Single Solenoid Spring Return</b> 	AC	<b>87140-02-●</b>	<b>87040-02-●</b> <i>(87030-02-●)</i>
	DC	<b>87140-01-●</b>	<b>87040-01-●</b> <i>(87030-01-●)</i>
<b>4 Way Double Solenoid Detent</b> 	AC	<b>87144-02-●</b>	<b>87044-02-●</b> <i>(87037-02-●)</i>
	DC	<b>87144-01-●</b>	<b>87044-01-●</b> <i>(87037-01-●)</i>

● - Insert coil voltage required to complete catalog number. Standard voltages are 12 and 24 VDC; 24, 110 and 230 VAC. Catalog numbers in *Italics* are older design valves with 20mm coils. Not recommended for new installations. See explanation, this page.

#### Manifolds

Common Input or standard manifold kits are available for constructing valve banks. Common input manifolds accommodate 3 or 4 way valves, while standard manifold kits are designed for 4 way valve assemblies. See accessories.