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### Important Note

The information shown in these documents is for guidance only. No liability is accepted for any errors or omissions. The designer or user is solely responsible for the safe and proper application of the parts, assemblies or equipment described.

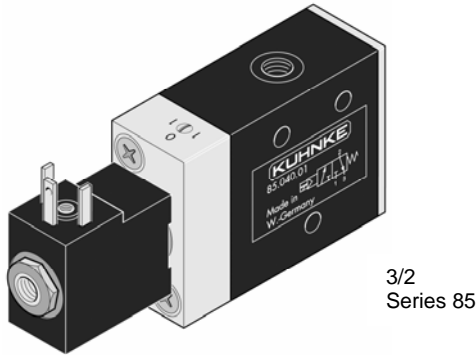
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# Miniature Solenoid Valves

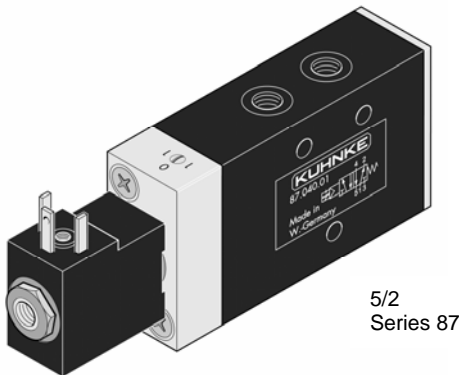
## Series 85, 87 – 3/2 or 5/2

Kuhnke Miniature Valves

### Steel Spool Valves, 1/8 ports



3/2  
Series 85



5/2  
Series 87

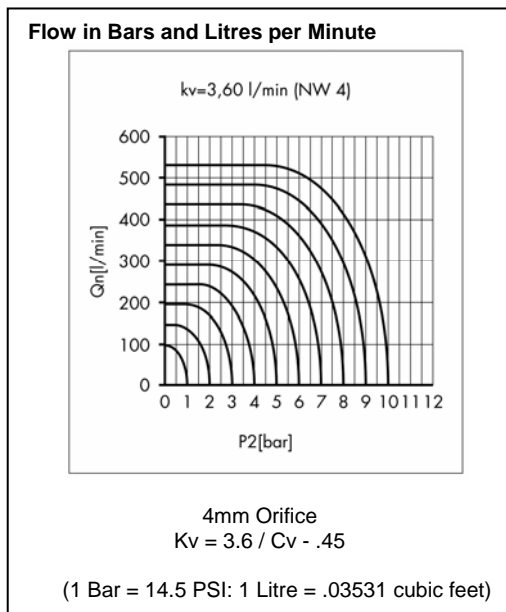
Series 85 and 87 solenoid operated spool valves are constructed of precision lapped steel spools and sleeves. Solenoid coils are encapsulated and have terminals for solder or plug connections. Valves can be mounted in-line or on manifolds.

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:**  
2 to 10 Bar

**Vacuum:**  
Not applicable.

**Flow Rate:**  
See Flow Chart.

**Kv/Cv:**  
Kv - 3.6  
Cv - 0.45

**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 (mm):**

5 way valve -	Single Solenoid	Double Solenoid
Height:	99	150
Width:	20	20
Depth:	40	40
Weight:	282g.	445g.

**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.

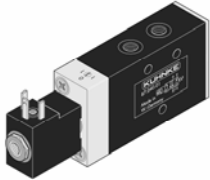
# Miniature Solenoid Valves

Kuhnke Miniature Valves

## Series 85, 87 – 3/2 or 5/2

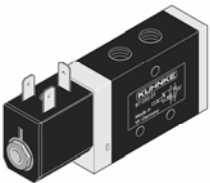
### Selection Chart

#### 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	Catalogue number	
		Metric Ports (European Std.)	NPT Ports (USA Std.)
<b>3/2</b> <b>Single Solenoid</b> Spring Return 	AC	<b>85040-02- ●</b> <i>(85030-02- ●)</i>	(Not Available)
	DC	<b>85040-01- ●</b> <i>(85030-01- ●)</i>	(Not Available)
<b>5/2</b> <b>Single Solenoid</b> Spring Return 	AC	<b>87040-02- ●</b> <i>(87030-02- ●)</i>	87140-02- ●
	DC	<b>87040-01- ●</b> <i>(87030-01- ●)</i>	87140-01- ●
<b>5/2</b> <b>Double Solenoid</b> Detent 	AC	<b>87044-02- ●</b> <i>(87037-02- ●)</i>	87144-02- ●
	DC	<b>87044-01- ●</b> <i>(87037-01- ●)</i>	87144-01- ●

● - Insert coil voltage required to complete catalogue number. Standard voltages are 12 and 24 VDC; 24, 110 and 230 VAC. Catalogue 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 5 way valves, while standard manifold kits are designed for 5 way valve assemblies. See accessories.