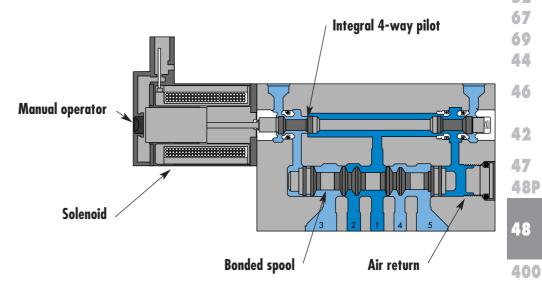
| Sub-base | Sub-base | Sub-base | Manifold base | Manifold ba



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Single or dual pressure.
- Internal or external pilot.
- Single or double solenoid.
- 2 or 3 position.
- Rectified AC voltage.
- ullet Latching solenoid technology.

92

93

ISO 01

ISO 02

ISO 1

ISO 2

ISO 3



unction		Port size	Flow (Max)	Individual mounting	Seri	es
5/2, 5/3		1/8"	1.1 C _V	Sub-base non "plug-in"		
PERATIONAL BEN	EFITS				3	3
4-way valve wit				-	3	4
16 mm valve (st High flow (up to Fast repeatable Maximum shiftir	1.1 C _V). response time	· ·s.			3	6
Long life.					3	2
					3	7
					3	
					5	
HOW TO ORDI	ER				6	
		C /\/A1\/E \A/IT!	DED EOD CIDE DODTCI			
		S (VALVE WITH BASE CO	·	E /0	6	
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center	4
		12 2 4 14 17 14 3	12 2 4 14 14 3 15	12 2 4 14 MID 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 2 4 14 MMD 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6
Valve less	Internal	48B-AMA-000-G xxx-xxx	48B-BMA-000-G xxx-xxx	48B-EMA-000-G xxx-xxx	48B-FMA-000-G xxx-xxx	
base	External	48B-AMD-000-G xxx-xxx	48B-BMD-000-G xxx-xxx	48B-EMD-000-G xxx-xxx	48B-FMD-000-G xxx-xxx	2
1/8" NPTF	Internal	48B-AMA-AAL-G xxx-xxx	48B-BMA-AAL-Gxxx-xxx	48B-EMA-AAL-Gxxx-xxx	48B-FMA-AAL-Gxxx-xxx 48B-FMD-AAM-Gxxx-xxx	7
	External	48B-AMD-AAM-G xxx-xxx	48B-BMD-AAM-Gxxx-xxx	48B-EMD-AAM-Gxxx-xxx		, 8P
JAL PRESSUR	E MODELS	(VALVE WITH BASE CODE	ED FOR SIDE PORTS)			OF
Port size		Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center 4	Q
			14 4 2 12 IZD 12		12 2 4 14 MDB 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
			50 1 03	50 03	315	00
Valve less b	ase Int	Supply #3 port	48B-CMB-000-Gxxx-xxx 48B-CMC-000-Gxxx-xxx	48B-DMB-000-Gxxx-xxx 48B-DMC-000-Gxxx-xxx	48B-HMB-000-Gxxx-xxx 48B-HMC-000-Gxxx-xxx	_
	F~	Supply #5 port	48B-CMC-000-GXXX-XXX	48B-DMD-000-GXXX-XXX	48B-HMD-000-GXXX-XXX	2
1/8" NPT		ernal Supply #3 port	48B-CMB-AAL-Gxxx-xxx	48B-DMB-AAL-Gxxx-xxx	48B-HMB-AAL-Gxxx-xxx	
-,		Supply #5 port	48B-CMC-AAL-Gxxx-xxx	48B-DMC-AAL-Gxxx-xxx	48B-HMC-AAL-Gxxx-xxx	3
	Ex	ternal	48B-CMD-AAM-Gxxx-xxx	48B-DMD-AAM-Gxxx-xxx	48B-HMD-AAM-Gxxx-xxx	•
TANDARD SC		PERAT∩R ➤	G XXX-XXX*		IS	0
	LLI NOID OI	LIMITOR			IS	0
			<u></u>			0
XX Volta	_	X Wire len		anual operator XX	Electrical connection	
	AC (2.5W) C (1.8W)	A 18" B 24"		on-locking recessed king recessed BT	Elving loads with light	0
DD 24 VD0	C (2.5W)	C 36"		GA	MAC JAC solenoid plug-in	0
DF 24 VDC	C (4.0W)			KA KT	Plug-in wire assy. Plug-in wire assy. with light	
				KD	Plug-in wire assy. with rectifier & light & ground	
Other options av atching solenoid al	ailable, see pa	ge 311.			rectitier & light & ground	

* Other options available, see page 311. Latching solenoid also available, see page 133. Note: AC voltage requires connector with rectifier. Other options available for the 48 series valves, see page 137.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI

External pilot: vacuum to 120 PSI

2 position : 20 to 120 PSI - 3 position : 35 to 120 PSI Pilot pressure:

Lubrication: Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)

Filtration: 40 µ

Temperature range: 0° F to 120° F (- 18° C to $+50^{\circ}$ C)

Flow: 1/8" side ports: (1.0 C_v) – 1/8" bottom ports: (1.1 C_v)

Coil: Class A wire (#22 AWG x 18), continuous duty

-15% to +10% of nominal voltage Voltage range:

Power: 1.0 to 4.0 W

Response times: Energize : 6 ms (with 4 W coil) De-energize : 6 ms

Options: • BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich Flow controls: FC48B-BB

• Sandwich regulator: see "regulators" section

DIMENSIONS Dimensions shown are metric (mm) 1/8" EXT. _ PILOT COMMON 29.5 21.5 16.7 12.0 15.3 24.9 \otimes 69.2 116.9 I APPROX <u>ك</u> 0 \oplus 0 1/8" PORTS MAC 2 50.4 \otimes 29.0 8.0 - 3/8" IN & EXH COMMONS 6.3 -23.3 13.9 Ø 5.3 86.00



Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	1/8"	1.1 C _v	Sub-base "plug-in"	
OPERATIONAL BENEFITS				33

- 1. 4-way valve with 4-way integral pilot.
- 2. 16 mm valve (stacks on 16.5 mm centers).
- 3. High flow (up to 1.1 $C_{\rm V}$).
- 4. Fast repeatable response times.
- 5. Maximum shifting forces in both directions.
- 6. Long life.



69

44

46

42

47 48P

48

400

92

93

ISO 01

ISO 02 **ISO** 1

ISO 2

ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS) - VALVE WITH BASE CODED FOR SIDE PORTS

Port size	Pilot air	5/2 Single solenoid	5/3 Double solenoid	5/3 Closed center	5/3 Open center
		12 2 4 14 17 1 4 3 15	12 2 4 14 12 7 7 3 15	12 2 4 14 M(D) 1 1 1 3 MM 17 1 1 1 3 MM 3 1 5	12 2 4 14 MD 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Valve less	Internal	48B-AMA-000-G xx P- xxx	48B-BME-000-G xx P- x ST	48B-EME-000-GxxP-xST	48B-FME-000-G xx P- x ST
base	External	48B-AMD-000-G xx P- xxx	48B-BMH-000-G xx P- x ST	48B-EMH-000-G xx P- x ST	48B-FMH-000-G xx P- x ST
1/8" NPTF	Internal	48B-AMA-AAA-GxxP-xxx	48B-BME-AAC-GxxP-xST	48B-EME-AAC-GxxP-xST	48B-FME-AAC-GxxP-xST
	External	48B-AMD-AAB-GxxP-xxx	48B-BMH-AAD-G xx P- x ST	48B-EMH-AAD-GxxP-xST	48B-FMH-AAD-GxxP-xST

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS) - VALVE WITH BASE CODED FOR SIDE PORTS

Port size	F	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
					12 2 4 14 MD TD T T T T T T T T T T T T T T T T T
Valve less base	Internal	Supply #3 port	48B-CMB-000-GxxP-xxx	48B-DMF-000-G xx P- x ST	48B-HMF-000-G xx P- x ST
		Supply #5 port	48B-CMC-000-GxxP-xxx	48B-DMG-000-G xx P- x ST	48B-HMG-000-GxxP-xST
	External		48B-CMD-000-G xx P- xxx	48B-DMH-000-G xx P- x ST	48B-HMH-000-G xx P- x ST
1/8" NPTF	Internal	Supply #3 port	48B-CMB-AAA-GxxP-xxx	48B-DMF-AAC-GxxP-xST	48B-HMF-AAC-GxxP-xST
		Supply #5 port	48B-CMC-AAA-GxxP-xxx	48B-DMG-AAC-GxxP-xST	48B-HMG-AAC-GxxP-xST
	External		48B-CMD-AAB-GxxP-xxx	48B-DMH-AAD-GxxP-xST	48B-HMH-AAD-GxxP-xST

STANDARD SOLENOID OPERATOR >	

AND	ARD SOLENOID OPERATOR ➤		G <u>xx</u> P- <u>xxx</u> *		
XX	Voltage	X	Manual operator	XX	Electrical connection
AA	120 VAC (2.5W)	1	Non-locking recessed	Doub	ole solenoid & 3 position models
DC	24 VDC (1.8W)	2	Locking recessed	ST	Base plug-in
DD	24 VDC (2.5W)			Sinal	le solenoid models

24 VDC (4.0W)

* Other options available, see page 311.
Latching solenoid also available, see page 135.
Note: AC voltage requires connector with rectifier (For double solenoid consult factory).
Other options available for the 48 series valves, see page 138.

Base plug-in

Base plug-in with LED light

Base plug-in with rectifier & light & ground







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI

External pilot: vacuum to 120 PSI

Pilot pressure: 2 position: 20 to 120 PSI - 3 position: 35 to 120 PSI

Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)

Filtration: 40 µ

Temperature range: 0°F to 120°F (-18°C to +50°C)

Flow: 1/8" side ports: $(1.0 \text{ C}_{v}) - 1/8$ " bottom ports: (1.1 C_{v})

Class A continuous duty, #22 AWG x 12 base leads

Voltage range: -15% to +10% of nominal voltage

Power: 1.0 to 4.0 W

Response times: Energize: 6 ms

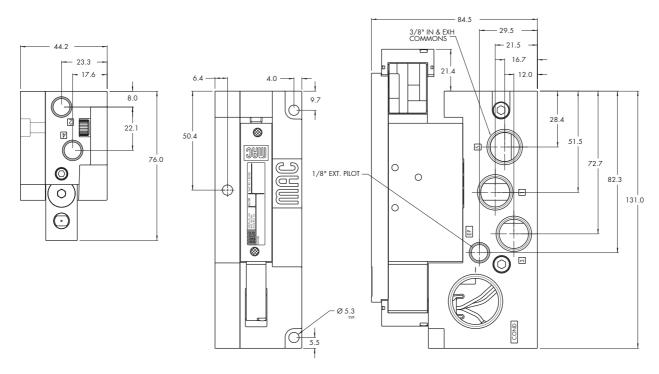
(with 4 W coil) De-energize : 6 ms

Options: • BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich Flow controls: FC48B-AB

• Sandwich regulator: see "regulators" section

DIMENSIONS

Dimensions shown are metric (mm)





Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	1/8"	1.1 C _V	Manifold base non "plug-in"	

OPERATIONAL BENEFITS

- 1. 4-way valve with 4-way integral pilot.
- 2. 16 mm valve (stacks on 16.5 mm centers).
- 3. High flow (up to 1.1 $\rm C_{V}$).
- 4. Fast repeatable response times.
- 5. Maximum shifting forces in both directions.
- 6. Long life.



HOW TO ORDER

SINGLE PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
		12 2 4 14 17 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 12 7 7 3 15	12 2 4 14 MD 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 2 4 14
Valve less	Internal	48B-AMA-000-G xxx-xxx	48B-BMA-000-G xxx-xxx	48B-EMA-000-G xxx-xxx	48B-FMA-000-G xxx-xxx
base	External	48B-AMD-000-G xxx-xxx	48B-BMD-000-G xxx-xxx	48B-EMD-000-G xxx-xxx	48B-FMD-000-G xxx-xxx
1/8" NPTF	Internal	48B-AMA-AJL-Gxxx-xxx	48B-BMA-AJL-Gxxx-xxx	48B-EMA-AJL-Gxxx-xxx	48B-FMA-AJL-Gxxx-xxx
	External	48B-AMD-AJM-Gxxx-xxx	48B-BMD-AJM-Gxxx-xxx	48B-EMD-AJM-G xxx-xxx	48B-FMD-AJM-Gxxx-xxx

DUAL PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
		14 2 12 12 5 5 0 0 5 3		12 2 4 14 MMD 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Valve less base	Internal Supply #3 port	48B-CMB-000-Gxxx-xxx	48B-DMB-000-G xxx-xxx	48B-HMB-000-G xxx-xxx
	Supply #5 port	48B-CMC-000-G xxx-xxx	48B-DMC-000-G xxx-xxx	48B-HMC-000-G xxx-xxx
	External	48B-CMD-000-G xxx-xxx	48B-DMD-000-G xxx-xxx	48B-HMD-000-G xxx-xxx
1/8" NPTF	Internal Supply #3 port	48B-CMB-AJL-Gxxx-xxx	48B-DMB-AJL-Gxxx-xxx	48B-HMB-AJL-Gxxx-xxx
	Supply #5 port	48B-CMC-AJL-Gxxx-xxx	48B-DMC-AJL-Gxxx-xxx	48B-HMC-AJL-Gxxx-xxx
	External	48B-CMD-AJM-Gxxx-xxx	48B-DMD-AJM-Gxxx-xxx	48B-HMD-AJM-Gxxx-xxx

STANDARD	SOLFNOID	OPFRATOR ➤	

IANDA	ard Solenoid Operati	OR ➤	G XX	X- <i>XX</i>	<u>x</u>	
				J ५ '		
XX	Voltage	X	Wire length	X	Manual operator	XX
AA	120 VAC (2.5W)	Α	18"	1	Non-locking recessed	BA
DC	24 VDC (1.8W)	В	24"	2	Locking recessed	ВТ
DD	24 VDC (2.5W)	С	36"			GA

* Other options available, see page 311.	
* Other options available, see page 311. Latching solenoid also available, see page 133	3.

24 VDC (4.0W)

93

92

33

34

36

32

37 38 **52**

67 69

44

46

42

47 **48P**

48

400

ISO 01 ISO 02

ISO 1

ISO 2

ISO 3

KA

KT

Electrical connection

MAC JAC solenoid plug-in

Plug-in wire assy. with light

Plug-in wire assy. with rectifier & light & ground

Flying leads Flying leads with light

Plug-in wire assy.

Note: - AC voltage requires connector with rectifier.
- Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").

Other options available for the 48 series valves, see page 137.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI

External pilot: vacuum to 120 PSI

Pilot pressure: 2 position: 20 to 120 PSI - 3 position: 35 to 120 PSI

Lubrication: Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)

Filtration: 40 µ

Temperature range: 0°F to 120°F (-18°C to +50°C)

Flow: 1/8" side ports: $(1.0 \text{ C}_{v}) - 1/8$ " bottom ports: (1.1 C_{v})

Class A wire (#22 AWG x 18), continuous duty

Voltage range: -15% to +10% of nominal voltage

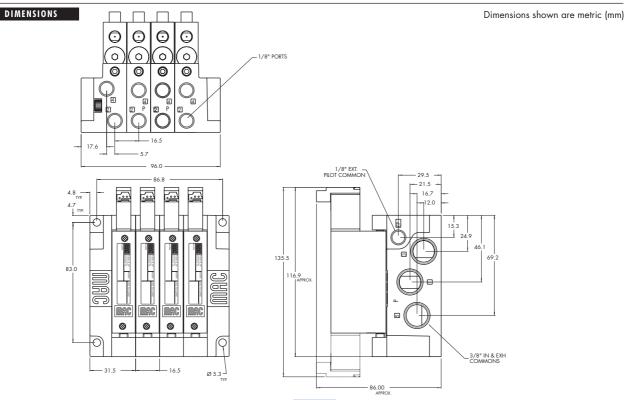
Power: 1.0 to 4.0 W

Response times: Energize: 6 ms (with 4 W coil) De-energize: 6 ms

Options : • BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich flow controls: FC48B-BB

• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471





ınction		Port size	Floш (Max)	Manifold mounting		Series
/2, 5/3		1/8"	1.1 C _v	Manifold base "plug-in"		
PERATIONAL BEI	NEFITS					33
4-way valve wi	stacks on 16.5				220	34
High flow (up t Fast repeatable Maximum shifti	e response time			61	19	36
. Long life.				e e		32
				9 4	8	37
				4000	1000	38
					W)	52
HOW TO ORD	ER					67
		S IIED STANIDARD EYCERI	f for Single Solenoids	١		69
Port size	Pilot air	5/2	5/2	5/3	5/3	44
		Single solenoid	Double solenoid	Closed center	Open center	
		12 2 4 14 di	12 2 14 3 3 1 5 14	12 2 4 14 MED 1 1 14 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 2 4 14 MDD 1 12 14 15 14 15 14 15 15 15 15 15 15 15 15 15 15 15 15 15	46
Valve less	Internal	48B-AMA-000-GxxP-xxx	48B-BME-000-GxxP-xST	48B-EME-000-GxxP-xST	48B-FME-000-GxxP-xST	
vaive less						
base	External	48B-AMD-000-G xx P- xxx	48B-BMH-000-GxxP-xST	48B-EMH-000-G xx P- x ST	48B-FMH-000-G xx P- x ST	42
	External Internal	48B-AMD-000-GxxP-xxx 48B-AMA-AJA-GxxP-xxx	48B-BMH-000-GxxP-xST 48B-BME-AJC-GxxP-xST	48B-EME-AJC-GxxP-xST 48B-EME-AJC-GxxP-xST	48B-FMH-000-GxxP-xST 48B-FME-AJC-GxxP-xST	
base						47
base 1/8" NPTF	Internal External	48B-AMA-AJA-G xx P- xxx	48B-BME-AJC-GxxP-xST 48B-BMH-AJD-GxxP-xST	48B-EME-AJC-G xx P- x ST	48B-FME-AJC-G xx P- x ST	47
base 1/8" NPTF	Internal External RE MODELS	48B-AMA-AJA-G xx P- xxx 48B-AMD-AJB-G xx P- xxx	48B-BME-AJC-GxxP-xST 48B-BMH-AJD-GxxP-xST	48B-EME-AJC-G xx P- x ST	48B-FME-AJC-G xx P- x ST	47 48
base 1/8" NPTF OUAL PRESSUR	Internal External RE MODELS	48B-AMA-AJA-GXXP-XXX 48B-AMD-AJB-GXXP-XXX (LED STANDARD EXCEPT F	48B-BME-AJC-GxxP-xST 48B-BMH-AJD-GxxP-xST OR SINGLE SOLENOIDS) 5/2	48B-EME-AJC-GxxP-xST 48B-EMH-AJD-GxxP-xST 5/2	48B-FME-AJC-GxxP-xST 48B-FMH-AJD-GxxP-xST	47

STANDARD SOLENOID OPERATOR >

External

Internal

External

Supply #5 port

Supply #3 port

Supply #5 port

1/8" NPTF



48B-CMC-000-GxxP-xxx

48B-CMD-000-GxxP-xxx

48B-CMB-AJA-GxxP-xxx

48B-CMC-AJA-GxxP-xxx

48B-CMD-AJB-GxxP-xxx

Above numbers are middle station manifolds with side ports

48B-HMG-000-GxxP-xST

48B-HMH-000-G**xx**P-**x**ST

48B-HMF-AJC-GxxP-xST

48B-HMG-AJC-GxxP-xST

48B-HMH-AJD-GxxP-xST

92

93

ISO 01

ISO 02 **ISO** 1 **ISO 2 ISO 3**

48B-DMG-000-GxxP-xST

48B-DMH-000-G**xx**P-**x**ST

48B-DMF-AJC-GxxP-xST

48B-DMG-AJC-GxxP-xST

48B-DMH-AJD-GxxP-xST

XX	Voltage	X	Manual operator	XX	Electrical connection
AA	120 VAC (2.5W)	1	Non-locking recessed	Doub	ole solenoid & 3 position models
DC	24 VDC (1.8W)	2	Locking recessed	ST	Base plug-in
DD	24 VDC (2.5W)		-	Singl	e solenoid models
DF	24 VDC (4.0W)			5A	Base plug-in
				SJ	Base plug-in with LED light
				55	Base plug-in with rectifier & light & ground

Other options available, see page 311.
 Latching solenoid also available, see page 135.
 Note: - AC voltage requires connector with rectifier. (For double solenoid consult factory).

 Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").

 Other options available for the 48 series valves, see page 138.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI

External pilot: vacuum to 120 PSI

Pilot pressure: 2 position: 20 to 120 PSI - 3 position: 35 to 120 PSI

Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)

Filtration:

Temperature range : $0^{\circ}F$ to $120^{\circ}F$ (- $18^{\circ}C$ to $+50^{\circ}C$)

Flow: 1/8" side ports: $(1.0 \text{ C}_{v}) - 1/8$ " bottom ports: (1.1 C_{v})

Coil: Class A wire (#22 AWG x 18), continuous duty

Voltage range : -15% to +10% of nominal voltage

Power: 1.0 to 4.0 W

Response times : Energize : 6 ms

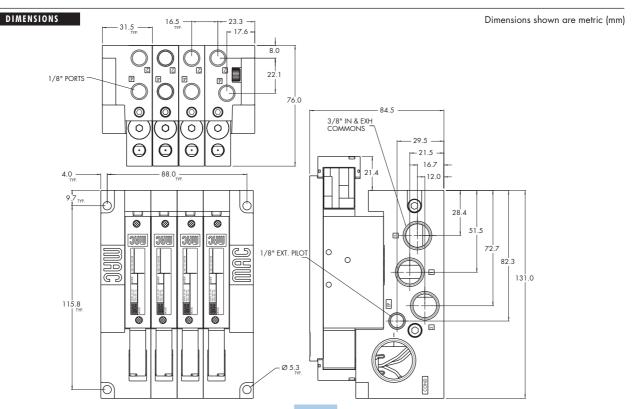
(with 4 W coil) De-energize : 6 ms

Options: • BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich flow controls: FC48B-AB

• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

• Plug-in wire protector: 24180





Function	ſ	ort size	Flow (Max)		nifold mounting	Series
5/2	1	/ 8 "	1.1 C _v	Sub-base/ manifold base non "plug-in" with latching solenoid		
OPERATIONAL BENEFITS						33
1. 4-way valve with 4-wa 2. 16 mm valve (stacks o						34
3. High flow (up to 1.1 C 4. Fast repeatable respon 5. Maximum shifting force 6. Long life.	C _V). ise times.				100	36
o. long me.					G (A)	32
				1		37
					6417.000	38
				-		52
HOW TO ORDER						67
SINGLE PRESSURE M	MODELS (IND	IVIDUAL BASE WITH	SIDE PORTS)			69
Port size	Pilot air		· · · · · · · · · · · · · · · · · · ·	5/2		44
			Si	ingle pressure		
						46
Valve less base	Internal		48A-	315 AMA-000-Lxxx-xxx		
	External		48A-	AMD-000-Lxxx-xxx		42
1/8" NPTF	Internal			AMA-AAL-Lxxx-xxx		47
	External -		48A- <i>A</i>	AMD-AAM-L xxx-xxx		
DUAL PRESSURE MC	DELS (INDIV	IDUAL BASE WITH SI	DE PORTS)			48P
Port size	Pi	ilot air		5/2 Dual pressure		48
				12 2 4 14		70
				315		400
Valve less base	Internal	Supply #3 port		48A-CMB-000-L xxx-xx		400
		Supply #5 port		48A-CMC-000-Lxxx-xxx		92
	External			48A-CMD-000-Lxxx-xxx		
1/8" NPTF	Internal	Supply #3 port		48A-CMB-AAL-LXXX-XXX		
		Supply #5 port		48A-CMC-AAL-Lxxx-xxx		93
	External			48A-CMD-AAM-Lxxx-xx	X	ISO 01
LATCHING SOLENO	DID ➤		L <u>xx</u> x- <u>x</u> xx			
			\			ISO 02
XX Voltage		X Wire lengt	h X	Manual operator	XX Electrical connection	ISO 1
DF 24 VDC (4.0W		A 18"	0	No operator	BA 2 Wire flying leads	ISO 2
HA 24 VDC (1.95)	w)	B 24" C 36"		- - -	KA 2 Wire flying leads KA 2 Wire Plug-in assembly KE 4 Wire Plug-in assembly LA 3 Wire Plug-in assembly (Polarity Switching Cover)	ISO 3

* Other options available, see page 319.

Note: Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").

Other options available for the 48 series valves, see page 137.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 20 to 120 PSI

External pilot: vacuum to 120 PSI

20 to 120 PSI Pilot pressure:

Lubrication: Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)

Filtration: 40 µ

 0° F to 120° F (- 18° C to $+50^{\circ}$ C)

Temperature range:

Flow: 1/8" side ports: (1.0 C_v) – 1/8" bottom ports: (1.1 C_v)

Coil: Class A wire (#22 AWG x 18), continuous duty

-15% to +10% of nominal voltage Voltage range:

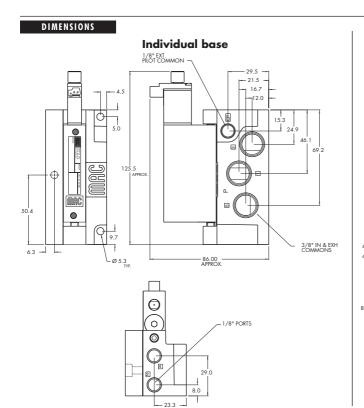
Power: 1.0 to 4.0 W Response times: Energize : 6 ms

(with 4 W coil) De-energize : 6 ms

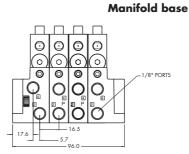
Options: • BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich flow controls: FC48B-BB

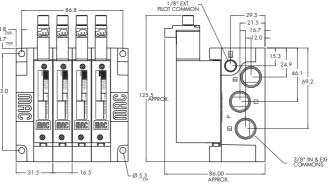
• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471



Dimensions shown are metric (mm)







Function		Port size	Flow (Max)	Individual/Manifold mounting	Series	
5/2		1/8"	1.1 C _v	Sub-base/ manifold base "plug-in" with latching solenoid		
OPERATIONAL BENEFITS					33	
1. 4-way valve with 4-wa				-	34	
 16 mm valve (stacks o High flow (up to 1.1 C Fast repeatable respor Maximum shifting forc Long life. 	C _V). nse times.			STOP TO	36	
o. Long mo.				9 6 2	32	
				9 1 1 8 2 1 00	37	
				4/2/4/2011/03/2	38	
				20 19	52	
HOW TO ORDER					67	
SINGLE PRESSURE A	AODELS (2-)	WIRE INDIVIDUAL	BASE WITH SIDE PORTS)		69	
Port size	Pilot air	THE HABITIES A	57.62 171111 6152 1 61616	5/2	44	
			Sir	gle pressure		
			12 12	2 4 37 37 37 37 37 37 37 37 37 37 37 37 37	46	
Valve less base	Internal		48A-AMA-000-L xxP-xxx			
	External		48A-A	42		
1/8" NPTF	Internal			MA-AAA-LxxP-xxx		
	External			MD-AAB-LxxP-xxx	48P	
			ASE WITH SIDE PORTS)		401	
Port size	1	Pilot air		5/2 Dual pressure	48	
				12 24 14 14	40	
				315	400	
Valve less base	Internal	Supply #3 port		400		
		Supply #5 port		92		
	External			48A-CMD-000-LxxP-xxx	7	
1/8" NPTF	Internal	Supply #3 port		48A-CMB-AAA-LxxP-xxx		
		Supply #5 port		48A-CMC-AAA-LxxP-xxx	93	
	External			48A-CMD-AAB-LxxP-xxx		
LATCHING SOLENC)ID ➤		L XX P-XXX*		ISO 01	
					ISO 02	
VV 37 1			Managed and the	VV Place!	ISO 1	
XX Voltage DF 24 VDC (4.0V	//	0 X	Manual operator No operator	XX Electrical connection** DA Plug-in	ISO 2	
DN 12 VDC (4.0V	/)		140 ορειαιοι	EA Plug-in 3 PIN (Polarity Switching Cover)	1	
HA 24 VDC (1.95 HE 12 VDC (1.95	W)				ISO 3	
HE 12 VDC (1.95	**					

Other options available, see page 319.

** For latching solenoid 2 and 4 wire, use electrical connector DA, DB, DC or DD. For 3 wire latching, use the "EA" connector.

Other options available for the 48 series valves, see page 138.







Compressed air, vacuum, inert gases Fluid:

Pressure range: Internal pilot: 20 to 120 PSI

External pilot: vacuum to 120 PSI

20 to 120 PSI Pilot pressure:

Lubrication: Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)

Filtration: 40 µ

Temperature range: 0° F to 120° F (- 18° C to $+50^{\circ}$ C)

Flow:

1/8" side ports: (1.0 C_v) – 1/8" bottom ports: (1.1 C_v)

Coil: Class A continuous duty, #22 AWG x 12 base leads

-15% to +10% of nominal voltage Voltage range:

Power: 1.0 to 4.0 W

Options:

Response times: Energize : 6 ms

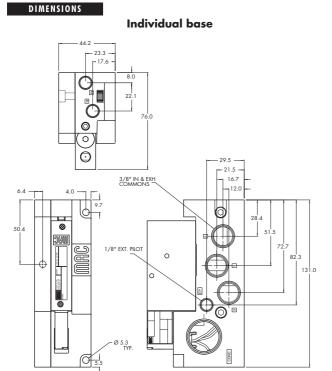
(with 4 W coil) De-energize: 6 ms

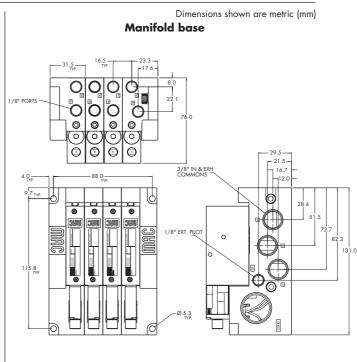
• BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich flow controls: FC48B-AB

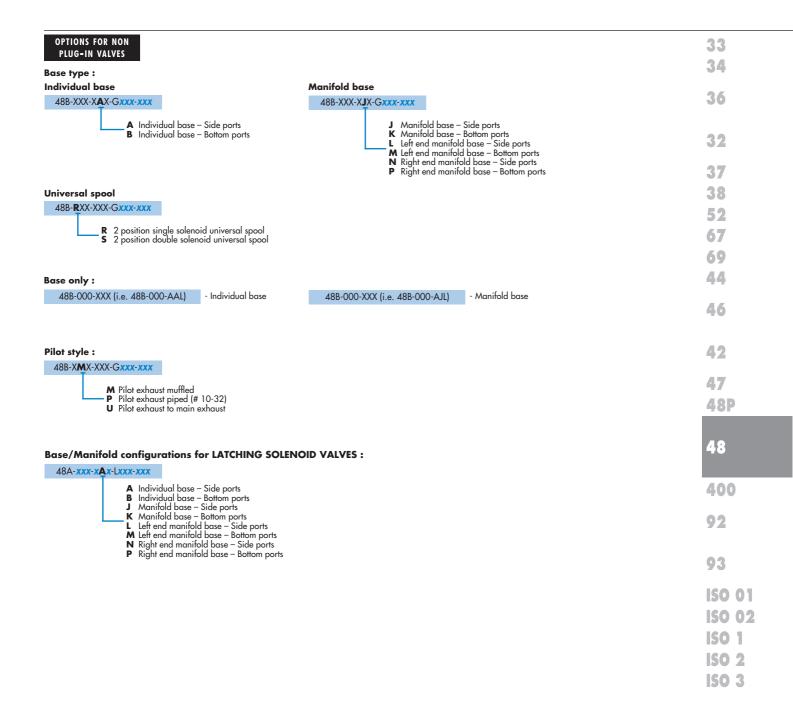
• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

• Plug-in wire protector: 24180







OPTIONS FOR PLUG-IN VALVES Base type: Individual base Manifold base 48B-XXX-X**A**X-G**xx**P-**xxx** 48B-XXX-XJX-GxxP-xxx J Manifold base – Side ports K Manifold base – Bottom ports L Left end manifold base – Side ports M Left end manifold base – Bottom ports N Right end manifold base – Side ports P Right end manifold base – Bottom ports A Individual base – Side ports B Individual base – Bottom ports **Universal** spool 48B-RXX-XXX-GxxP-xxx 2 position single solenoid universal spool 2 position double solenoid universal spool Base only: 48B-000-XXX (i.e. 48B-000-AAA) 48B-000-XXX (i.e. 48B-000-AJC) - Individual base wired for a single solenoid valve - Manifold base wired for a double solenoid valve For LED with diode (2 & 3 position double solenoid valves) 48B-XX**J**-XXX-G**xx**P-**x**ST J Internal pilot single pressure K Internal pilot dual pressure supply from #3 port Internal pilot dual pressure supply from #5 port M External pilot Pilot style: 48B-X**M**X-XXX-G**xx**P-**xxx** M Pilot exhaust muffled P Pilot exhaust piped (# 10-32) U Pilot exhaust to main exhaust **Base/Manifold configurations for LATCHING SOLENOID VALVES:** 48A-xxx-xAx-LxxP-xxx A Individual base – Side ports B Individual base – Bottom ports J Manifold base – Side ports K Manifold base – Bottom ports L Left end manifold base – Side ports M Left end manifold base – Bottom ports N Right end manifold base – Side ports P Right end manifold base – Bottom ports

Base/Manifold options for int./ext. pilot for LATCHING SOLENOID VALVES:

A Plug-in Int. Pilot – 2 Wire Latching
B Plug-in Ext. Pilot – 2 Wire Latching
C Plug-in Int. Pilot – 3 Wire Latching
D Plug-in Ext. Pilot – 3 Wire Latching
F Plug-in Int. Pilot – 4 Wire Latching
F Plug-in Ext. Pilot – 4 Wire Latching

48A-xxx-xxA-LxxP-xxx



Individual mounting Series Inline 33 34

36

32

37

48

400

92

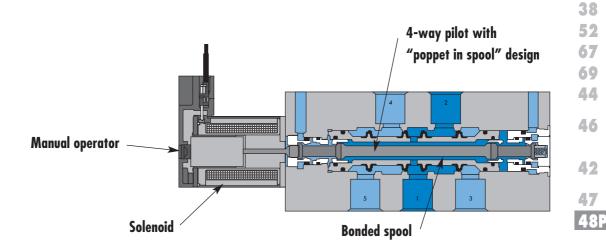
93

ISO 01

ISO 02

ISO 1

ISO 2 ISO 3



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot with poppet inside the spool.
- Large flow in compact package.
- Single or dual pressure.
- Rectified AC voltage.



Function		Port size		Flow (Max)	Individual m	ounting	Series
5/2		1/8"		1.0 C _V	Inline		
1. 4-way va 2. Poppet in	AL BENEFITS live with 4-way pile is spool design					W.	33 34
 High flow Fast reper Maximum 	alve (stacks on 16 v (up to 1.0 Cv). atable response ti n shifting forces in	mes.			7		36
7. Long life. 8. Compact							32
							37
					3		38
HOW TO	ORDER						52 67
Por	t size	Pilot		5/2 Single ope Single pressu		5/2 Single operator Dual pressure	69
				12 2 4 1 17D 1 315	4 31	14 4 2 12 1/2	44 46
		Internal		48PB-AAA-A00-Gxx	x-xxx		. 70
1,	/ 8 "	Internal from p		-		48PB-CAB-A00-GXXX-XXX	42
		Internal from p	ort 5	-		48PB-CAC-A00-Gxxx-xxx	7.4
STANDAR	RD SOLENOID	OPERATOR ➤		G <u>xx</u> x- <u>x</u> xx			47
				══┸┹			48P
ХХ	Voltage	Х	Wire lengt	h X N	lanual operator	XX Electrical connection	
	120 VAC (2.5W) 24 VDC (1.8W)	<u>А</u> В	18" 24"		on-locking ocking	BA Flying leads BT Flying leads with light	48
DD	24 VDC (2.5W)	C	36"		Zanig	GA MAC JAC solenoid plug-in	
Dr	24 VDC (4.0W)					KT Plug-in wire assy, with light	400
* Other opt	tions available, see	page 311.				KD Plug-in wire assy. with rectifier & light & ground	92
		nector with rectifier.					7.2
	X-X00-G <i>xx-xxx</i>	l					93
							ISO 01
L		iust piped M5					ISO 02
	D Pilot exha	iust out main exhaust					ISO 1
							ISO 2
							ISO 3
							150 0







Fluid: Compressed air, vacuum, inert gases

Pressure range:

Lubrication: Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)

Filtration: 40 µ

Temperature range : 0°F to 120°F (18°C to +50°C)

Flow: Cv 1,0

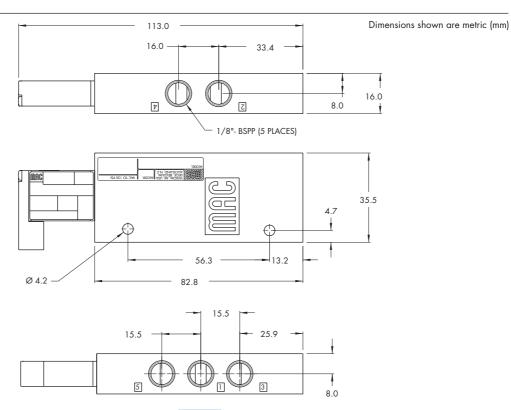
Coil: Class A wire continuous duty, #22 AWG x 18 leads

-15% to +10% of nominal voltage Voltage range:

1.0 to 4.0 W Power:

• BSPP threads Options :

DIMENSIONS





Codification table for voltages / Manual operator / Electrical connection

VALVE CODE > $G \underbrace{XX}_{1} \underbrace{X-X}_{2} \underbrace{XX}_{4}$

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 34, 38, 42, 44 & 48 Series



	1. VOLTAGE		4. ELECTRICAL CONNECTION
G-XX X-X XX	VOLTAGE	G-XX X-X XX	ELECTRICAL CONNECTION
AA	120 VAC (2.5W) Requires electrical connector with rectifier	BA	Flying leads
AC	24 VAC (4.0W) Requires electrical connector with rectifier	ВВ	BA with ground wire
DA	24 VDC (1.0W)	ВС	BA with light
DC	24 VDC (1.8W)	BD	BA with light and ground wire
DD	24 VDC (2.5W)	BE	BA with suppression diode
DE	24 VDC (3.0W)	BF	BA with suppression diode and ground wire
DF	24 VDC (4.0W)	BG	BA with suppression diode and light
DG	12 VDC (1.0W)	ВН	BA with suppression diode, light and ground wire
DJ	12 VDC (1.8W)	BN	BA with suppression diode and blocking diode
DK	12 VDC (2.5W)	ВР	BA with suppression diode, blocking diode and ground wire
DM	12 VDC (3.0W)	BR	BA with suppresion diode, blocking diode and light
DN	12 VDC (4.0W)	BS	BA with suppression diode, blocking diode, light and ground
DR	6 VDC (1.8W)		wire
DS	6 VDC (3.0W)	GA	MAC JAC Solenoid plug-in
EB	48 VDC (1.8W)	GB	MAC JAC Solenoid plug-in w/Diode
EC	48 VDC (3.0W)	GC	MAC JAC Solenoid plug-in w/MOV
ED	120 VDC (2.5W)	GD	MAC JAC Solenoid plug-in w/LED
GD	12 VDC (0.5W) 34 series only	GE	MAC JAC Solenoid plug-in w/Diode & LED
GE	24 VDC (0.5W) 34 series only	GF	MAC JAC Solenoid plug-in w/MOV & LED
		GG	MAC JAC Solenoid plug-in w/Rectifier
	2. WIRE LENGTH	GH	MAC JAC Solenoid plug-in w/Rectifier & LED
		KA	Solenoid plug-in wire assembly
	WIRE LENGTH	КВ	KA with ground
0	No lead wires (used only with "KJ" & "KM" connectors)	KC	KA with rectifier and light
A	18" coil leads	KD	KA with rectifier, light and ground
В	24" coil leads	KE	KA with suppression diode
<u> </u>	36" coil leads	KF	KA with suppression diode and ground
<u>D</u>	48" coil leads	KJ	Solenoid plug-in housing without wire assembly
E	72" coil leads	KM	Solenoid plug-in housing with ground pin without wire
F G	96" coil leads 120" coil leads	- VAI	assembly
H	144" coil leads	KN KP	KA with suppression diode and blocking diode KA with suppression diode, blocking diode and ground
	18" base leads	KT	KA with light
2	24" base leads	KU	KA with light and ground
3	36" base leads	KV	KA with suppression diode and light
4	48" base leads	KW	KA with suppression diode, light and ground
5	72" base leads	KX	KA with suppression diode, blocking diode and light
6	96" base leads	KY	KA with suppression diode, blocking diode, light & ground
7	120" base leads		with suppression aloae, blocking aloae, light a ground
	120 5030 10003	ELEC	TRICAL CONNECTION FOR PLUG-IN VALVES
	3. MANUAL OPERATOR	A VV V V V V	
C-VV V V VV	MANUAL OPERATOR	G-XX X-X XX	PLUG-IN OPTIONS
G-XX X-X XX	MANUAL OPERATOR Non-locking recessed	SB SC	Base plug-in with ground Base plug-in with suppression and blocking diode
2	Locking recessed	SD	Base plug-in with suppression and blocking diode and ground
3		SE	Base plug-in with MOV
4	Non-locking extended Locking extended	SF SF	Base plug-in with MOV and ground
	LOCKING EXIGNACA	SG	Base plug-in with rectifier
		SH	Base plug-in with rectifier and ground
		SK	Base plug-in with light and ground
		SL	Base plug-in with suppression and blocking diode and light
		SM	Base plug-in with suppression and blocking diode and light
		<i>31</i> 41	and ground
		SN	Base plug-in with MOV and light
		SP	Base plug-in with MOV and light with ground
		SR	Base plug-in with rectifier and light
		- JK	pase prog in willi recliner and light



Codification table for voltages / Manual operators / Electrical connections

VALVE CODE ➤

 $L \frac{XX}{1} \frac{X-X}{2} \frac{XX}{3} \frac{XX}{4}$

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 38, 42, 44, 47 & 48 Series



1. \	/OLTAGE (32, 38, 42, 44, 48 SERIES)		1. VOLTAGE (47 SERIES)
L- XX X-X XX	VOLTAGE	L- XX X-X XX	VOLTAGE
DF	24VDC (4.0W)	DA	24VDC (5.2W)
DN	12VDC (4.0W)	DF	12VDC (5.2W)
НА	24VDC (1.95W)		
HE	12VDC (1.95W)		

2. WIRE LENGTH (all series)

L- XX X-X XX	WIRE LENGTH
0	No lead wire
A	18"
В	24"
С	36"
D	48"
E	72"
F	96"
G	120"
Н	144"

3. MANUAL OPERATOR (all series)

L- XX X-X XX	MANUAL OPERATOR
0	No operator

4. ELECTRIC	AL CONNECTOR (32, 38, 42, 44 & 48 series)	4.	ELECTRICAL CONNECTOR (47 series)
L-XX X-X XX	NON PLUG-IN	L- XX X-X XX	NON PLUG-IN
BA	2 wire flying leads	BA	2 wire flying leads
ВВ	2 wire flying leads with ground wire	ВВ	2 wire flying leads with ground wire
ВС	2 wire flying leads with light	ВС	2 wire flying leads with light
BD	2 wire flying leads with light & ground wire	BD	2 wire flying leads with light & ground wire
BJ	4 wire flying leads	BJ	4 wire flying leads
BK	4 wire flying leads with ground	ВК	4 wire flying leads with ground
BL	4 wire flying leads with light	BL	4 wire flying leads with light
ВМ	4 wire flying leads with light & ground wire	ВМ	4 wire flying leads with light & ground wire
KA	2 wire plug-in assembly	LA	3 wire plug-in assembly (Plarity switching cover)
KB	2 wire plug-in assembly with ground wire	MA	2 wire plug-in assembly
KC	2 wire plug-in assembly with light	MB	2 wire plug-in assembly with ground wire
KD	2 wire plug-in assembly with light and ground wire	МС	2 wire plug-in assembly with light
KE	4 wire plug-in assembly	MD	2 wire plug-in assembly with light and ground wire
KF	4 wire plug-in assembly with ground wire	ME	4 wire plug-in assembly
KG	4 wire plug-in assembly with light	MF	4 wire plug-in assembly with ground wire
KH	4 wire plug-in assembly and ground wire	MG	4 wire plug-in assembly with light
LA	3 wire plug-in assembly (polarity switching cover)	МН	4 wire plug-in assembly with light and ground wire
		L- XX X-X XX	PLUG-IN
L-XX X-X XX	PLUG-IN	EA	Base plug-in 3 pin (Polarity switching cover)
*DA	Base plug-in	FA	Base plug-in with ground
*DB	Base plug-in with ground pin	FB	Base plug-in with ground & light
*DC	Base plug-in with light	FC	Base plug-in 4 wire with ground
*DD	Base plug-in with light & ground pin	FD	Base plug-in 4 wire with light & ground
**EA	Base plug-in 3 pin (Plarity switching cover)		

^{*} Use these options for plug-in base with 2 or 4 wire assemblies

** Use this option for plug-in bases with 3 wire assemblies