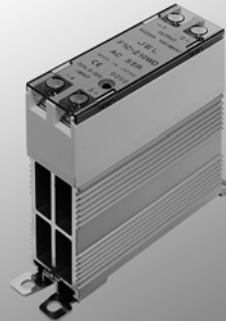


AC Solid State Relay



F1 SERIES



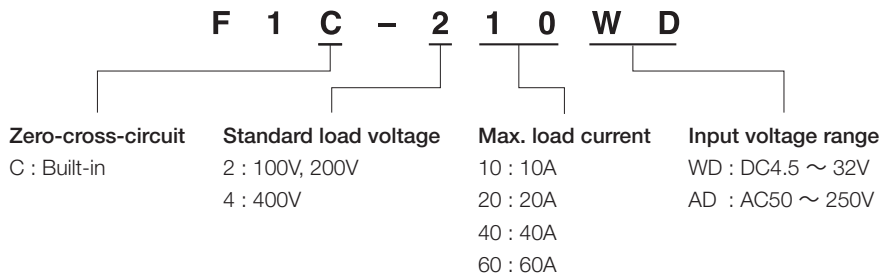
Solid State Relay

F1 series

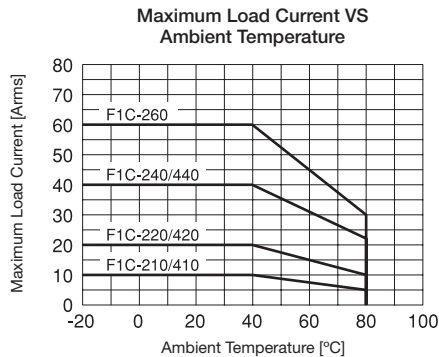
Features

- Slim type power control SSR with heat-sink
- One-touch attachment on DIN-Rail
- Slide safety cover, LED installed
- Max. load current at 10A, 20A, 40A, 60A

Type Information



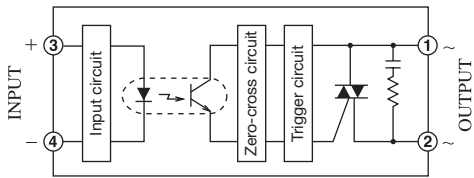
Characteristics



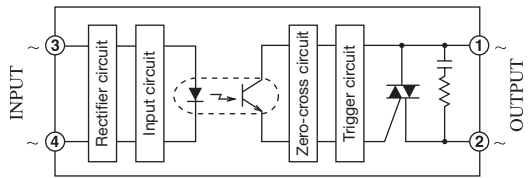
※ Description in the catalogue is subject to change without notice. Please read the specifications thoroughly before using.
 ※ Please contact JEL SYSTEM for further information.

Equivalent Circuit

F1C-WD type (DC INPUT)

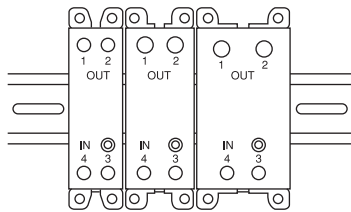


F1C-AD type (AC INPUT)

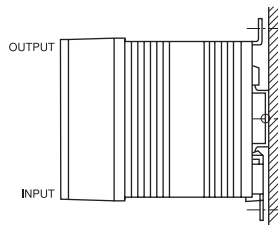
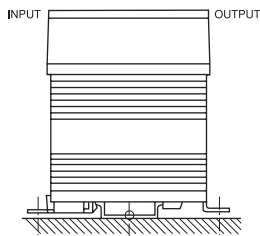


Installation (by DIN-Rail or Screws)

① Vertical Installation



② Horizontal Installation



※ Reduce the rating of load current more than 10% when F1C-series are installed more than four closely.

※ Reduce the rating of load current more than 10% when F1C-series are installed horizontally.

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 ※ Please contact JEL SYSTEM for further information.

■ Ratings

(Ta = 25 °C)

	Item	Symbols	F1C-210WD	F1C-210AD	F1C-410WD	F1C-410AD	Units
Output	Rated Load Voltage	—	120, 240		440		V _{ACrms}
	Maximum Load Current	I _{OMAX}	10				A _{ACrms}
	Maximum Load Voltage	V _{OMAX}	264		484		V _{ACrms}
	Peak Non Repetitive Off State Voltage	V _{DSM}	600		800		V
	Peak 1 Cycle Surge Current	I _{SURGE}	140 (50Hz)				A
	Frequency	f	50, 60				Hz
Input	Maximum Input Voltage	V _{IMAX}	32	250 (V _{ACrms})	32	250 (V _{ACrms})	V _{DC}
	Maximum Input Current	I _{IMAX}	5	—	5	—	mA
	Input Impedance	R _{IN}	—	50 ± 20%	—	50 ± 20%	KΩ
General	Dielectric Strength	V _{ISO}	2,500/1 min.(Between input-output-case)				V _{ACrms}
	Isolation Resistance	R _{ISO}	10 ⁸ and above DC500V(Between input-output-case)				Ω
	Operating Temperature Range	T _{OPR}	- 20 ~ + 80				°C
	Storage Temperature Range	T _{STG}	- 30 ~ + 100				°C

■ Electrical Characteristics

(Ta = 25 °C)

	Item	Symbols	F1C-210WD	F1C-210AD	F1C-410WD	F1C-410AD	Units
Output	Load Voltage Range	V _O	50 ~ 264		50 ~ 484		V _{ACrms}
	Off State Leakage Current	I _{LEK}	12 and below(V _O =200V)		12 and below(V _O =400V)		mA _{ACrms}
	On State Voltage Drop	V _{SAT}	1.5 and below				V _{ACrms}
	Minimum Load Current	I _{OMIN}	100				mA
Input	Input Voltage Range	V _I	4.5 ~ 32	50 ~ 250 (V _{ACrms})	4.5 ~ 32	50 ~ 250 (V _{ACrms})	V _{DC}
	Operate Voltage	V _P	4.5 and below	50 and below (V _{ACrms})	4.5 and below	50 and below (V _{ACrms})	V _{DC}
	Release Voltage	V _D	1 and above	10 and above (V _{ACrms})	1 and above	10 and above (V _{ACrms})	V _{DC}
General	Operate Time	T _{ON}	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	
	Release Time	T _{OFF}	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	
	Capacitance	C _{IO}	15 and below				PF
	Zero Cross Turn On		Built In				
	Approved Standards		UL				

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※ Please contact JEL SYSTEM for further information.

■ Ratings

(Ta = 25 °C)

	Item	Symbols	F1C-220WD	F1C-220AD	F1C-420WD	F1C-420AD	Units
Output	Rated Load Voltage	—	120, 240		440		V _{ACrms}
	Maximum Load Current	I _{OMAX}	20				A _{ACrms}
	Maximum Load Voltage	V _{OMAX}	264		484		V _{ACrms}
	Peak Non Repetitive Off State Voltage	V _{DSM}	600		800		V
	Peak 1 Cycle Surge Current	I _{SURGE}	220 (50Hz)				A
	Frequency	f	50, 60				Hz
Input	Maximum Input Voltage	V _{IMAX}	32	250 (V _{ACrms})	32	250 (V _{ACrms})	V _{DC}
	Maximum Input Current	I _{IMAX}	5	—	5	—	mA
	Input Impedance	R _{IN}	—	50 ± 20%	—	50 ± 20%	KΩ
General	Dielectric Strength	V _{ISO}	2,500/1 min.(Between input-output-case)				V _{ACrms}
	Isolation Resistance	R _{ISO}	10 ⁸ and above DC500V(Between input-output-case)				Ω
	Operating Temperature Range	T _{OPR}	- 20 ~ + 80				°C
	Storage Temperature Range	T _{STG}	- 30 ~ + 100				°C

■ Electrical Characteristics

(Ta = 25 °C)

	Item	Symbols	F1C-220WD	F1C-220AD	F1C-420WD	F1C-420AD	Units
Output	Load Voltage Range	V _O	50 ~ 264		50 ~ 484		V _{ACrms}
	Off State Leakage Current	I _{LEK}	12 and below(V _O = 200V)		12 and below(V _O = 400V)		mA _{ACrms}
	On State Voltage Drop	V _{SAT}	1.5 and below				V _{ACrms}
	Minimum Load Current	I _{OMIN}	100				mA
Input	Input Voltage Range	V _I	4.5 ~ 32	50 ~ 250 (V _{ACrms})	4.5 ~ 32	50 ~ 250 (V _{ACrms})	V _{DC}
	Operate Voltage	V _P	4.5 and below	50 and below (V _{ACrms})	4.5 and below	50 and below (V _{ACrms})	V _{DC}
	Release Voltage	V _D	1 and above	10 and above (V _{ACrms})	1 and above	10 and above (V _{ACrms})	V _{DC}
General	Operate Time	T _{ON}	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	/
	Release Time	T _{OFF}	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	/
	Capacitance	C _{IO}	15 and below				PF
	Zero Cross Turn On		Built In				/
	Approved Standards		UL				/

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■ Ratings

(Ta = 25 °C)

	Item	Symbols	F1C-240WD	F1C-240AD	F1C-440WD	F1C-440AD	Units
Output	Rated Load Voltage	—	120, 240		440		V _{ACrms}
	Maximum Load Current	I _{OMAX}	40				A _{ACrms}
	Maximum Load Voltage	V _{OMAX}	264		484		V _{ACrms}
	Peak Non Repetitive Off State Voltage	V _{DSM}	600		800		V
	Peak 1 Cycle Surge Current	I _{SURGE}	440 (50Hz)				A
	Frequency	f	50, 60				Hz
Input	Maximum Input Voltage	V _{IMAX}	32	250 (V _{ACrms})	32	250 (V _{ACrms})	V _{DC}
	Maximum Input Current	I _{IMAX}	5	—	5	—	mA
	Input Impedance	R _{IN}	—	50 ± 20%	—	50 ± 20%	KΩ
General	Dielectric Strength	V _{ISO}	2,500/1 min.(Between input-output-case)				V _{ACrms}
	Isolation Resistance	R _{ISO}	10 ⁸ and above DC500V(Between input-output-case)				Ω
	Operating Temperature Range	T _{OPR}	- 20 ~ + 80				°C
	Storage Temperature Range	T _{STG}	- 30 ~ + 100				°C

■ Electrical Characteristics

(Ta = 25 °C)

	Item	Symbols	F1C-240WD	F1C-240AD	F1C-440WD	F1C-440AD	Units
Output	Load Voltage Range	V _O	50 ~ 264		50 ~ 484		V _{ACrms}
	Off State Leakage Current	I _{LEK}	12 and below(V _O =200V)		12 and below(V _O =400V)		mA _{ACrms}
	On State Voltage Drop	V _{SAT}	1.5 and below				V _{ACrms}
	Minimum Load Current	I _{OMIN}	100				mA
Input	Input Voltage Range	V _I	4.5 ~ 32	50 ~ 250 (V _{ACrms})	4.5 ~ 32	50 ~ 250 (V _{ACrms})	V _{DC}
	Operate Voltage	V _P	4.5 and below	50 and below (V _{ACrms})	4.5 and below	50 and below (V _{ACrms})	V _{DC}
	Release Voltage	V _D	1 and above	10 and above (V _{ACrms})	1 and above	10 and above (V _{ACrms})	V _{DC}
General	Operate Time	T _{ON}	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	/
	Release Time	T _{OFF}	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	1/2 Cycle + 1ms and below	1 1/2 Cycle + 1ms and below	/
	Capacitance	C _{IO}	15 and below				PF
	Zero Cross Turn On		Built In				/
	Approved Standards		—				/

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■ Ratings

(Ta = 25 °C)

	Item	Symbols	F1C-260WD	F1C-260AD	Units
Output	Rated Load Voltage	—	120, 240		V _{ACrms}
	Maximum Load Current	I _{OMAX}	60		A _{ACrms}
	Maximum Load Voltage	V _{OMAX}	264		V _{ACrms}
	Peak Non Repetitive Off State Voltage	V _{DSM}	600		V
	Peak 1 Cycle Surge Current	I _{SURGE}	440 (50Hz)		A
	Frequency	f	50, 60		Hz
Input	Maximum Input Voltage	V _{IMAX}	32	250 (V _{ACrms})	V _{DC}
	Maximum Input Current	I _{IMAX}	5	—	mA
	Input Impedance	R _{IN}	—	50 ± 20%	KΩ
General	Dielectric Strength	V _{ISO}	2,500/1 min.(Between input-output-case)		V _{ACrms}
	Isolation Resistance	R _{ISO}	10 ⁸ and above DC500V(Between input-output-case)		Ω
	Operating Temperature Range	T _{OPR}	- 20 ~ + 80		°C
	Storage Temperature Range	T _{STG}	- 30 ~ + 100		°C

■ Electrical Characteristics

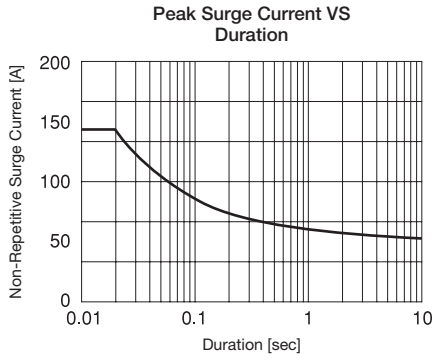
(Ta = 25 °C)

	Item	Symbols	F1C-260WD	F1C-260AD	Units
Output	Load Voltage Range	V _O	50 ~ 264		V _{ACrms}
	Off State Leakage Current	I _{LEK}	12 and below (V _O = 200V)		mA _{ACrms}
	On State Voltage Drop	V _{SAT}	1.5 and below		V _{ACrms}
	Minimum Load Current	I _{OMIN}	100		mA
Input	Input Voltage Range	V _I	4.5 ~ 32	50 ~ 250 (V _{ACrms})	V _{DC}
	Operate Voltage	V _P	4.5 and below	50 and below (V _{ACrms})	V _{DC}
	Release Voltage	V _D	1 and above	10 and above (V _{ACrms})	V _{DC}
General	Operate Time	T _{ON}	1/2 Cycle + 1 ms and below	1 1/2 Cycle + 1 ms and below	/
	Release Time	T _{OFF}	1/2 Cycle + 1 ms and below	1 1/2 Cycle + 1 ms and below	/
	Capacitance	C _{IO}	15 and below		PF
	Zero Cross Turn On		Built In		/
	Approved Standards		—		/

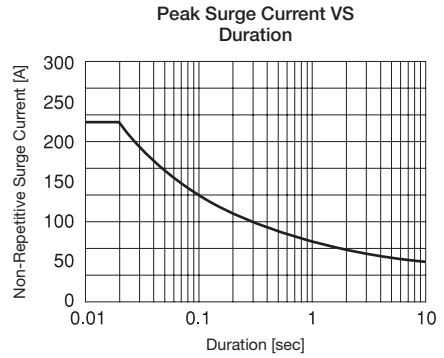
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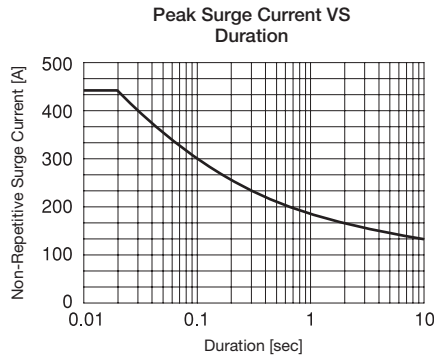
F1C-210, F1C-410



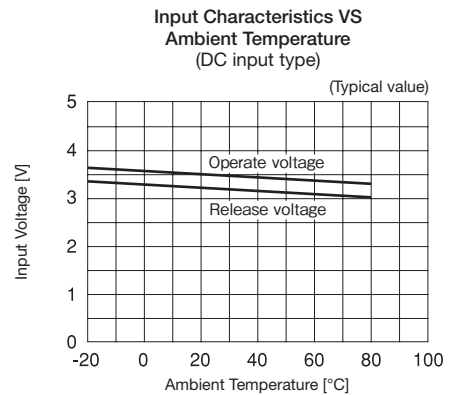
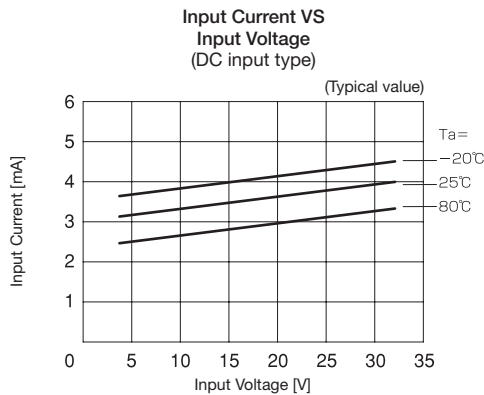
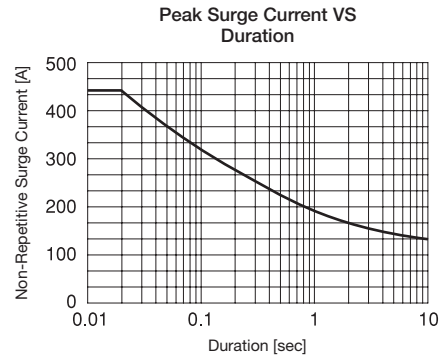
F1C-220, F1C-420



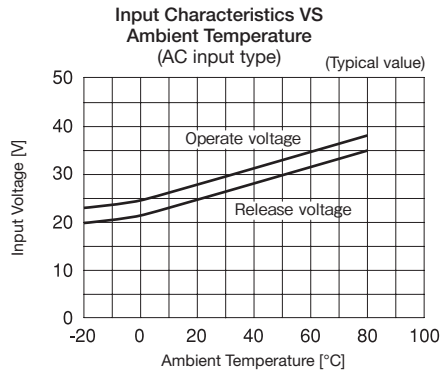
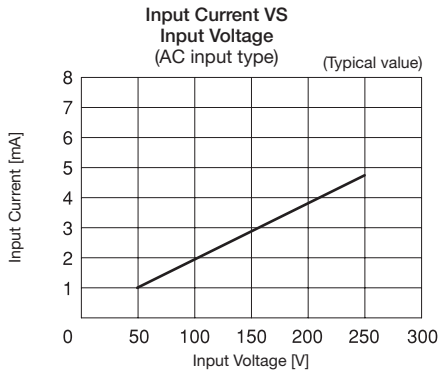
F1C-240, F1C-440



F1C-260



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