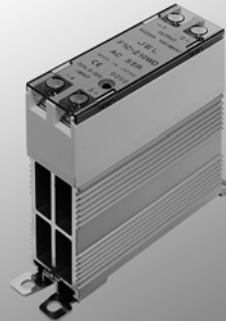


AC Solid State Relay



F1 SERIES



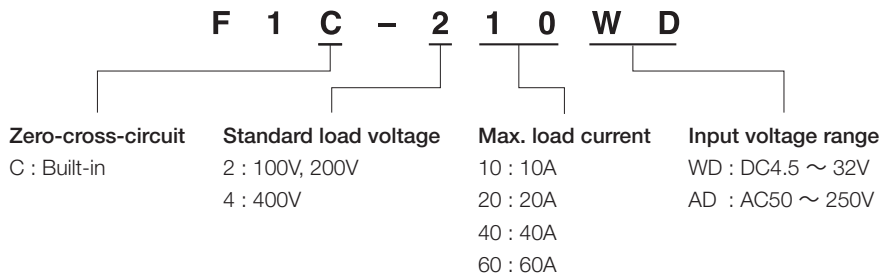
Solid State Relay

F1 series

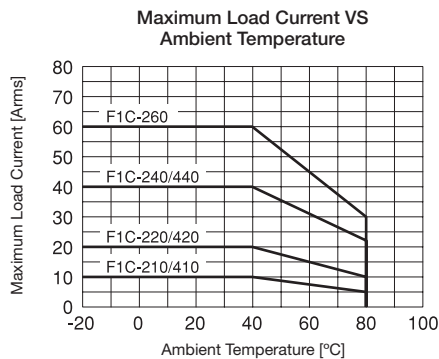
Features

- 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



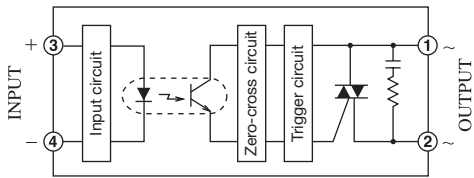
Characteristics



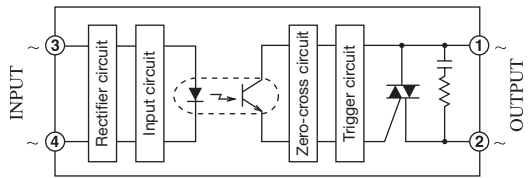
※ Description in the catalogue is subject to change without notice. Please read the specifications thoroughly before using.
 ※ Please contact JEL SYSTEM for further information.

Equivalent Circuit

F1C-WD type (DC INPUT)

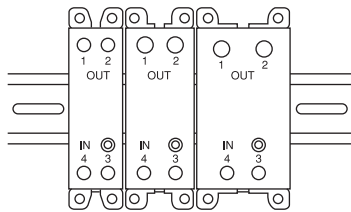


F1C-AD type (AC INPUT)

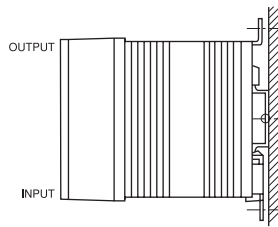
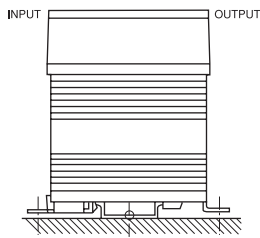


Installation (by DIN-Rail or Screws)

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.

※ Description in the catalogue is subject to change without notice. Please read the specifications thoroughly before using.
 ※ 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 | | | | |

※ Description in the catalogue is subject to change without notice. Please read the specifications thoroughly before using.

※ 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 | | | | / |

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

■ 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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※ Please contact JEL SYSTEM for further information.

■ 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

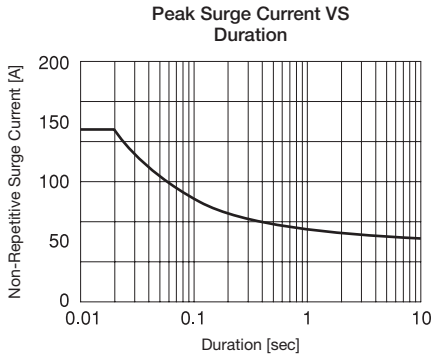
(Ta = 25 °C)

| | 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 | | — | | / |

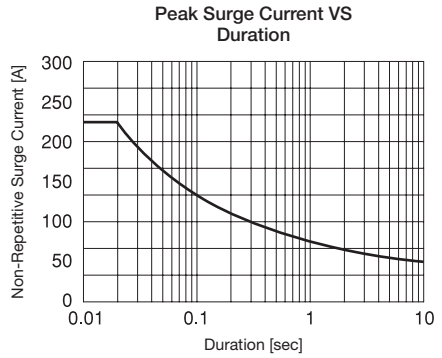
※ Description in the catalogue is subject to change without notice. Please read the specifications thoroughly before using.

※ Please contact JEL SYSTEM for further information.

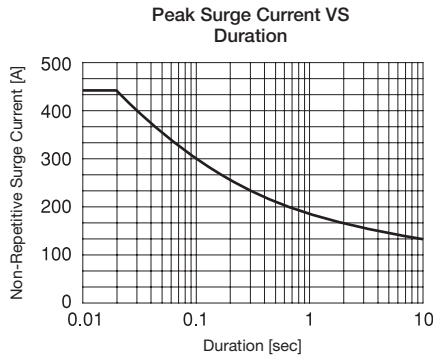
F1C-210, F1C-410



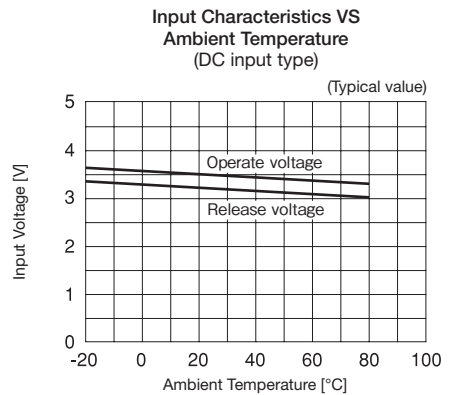
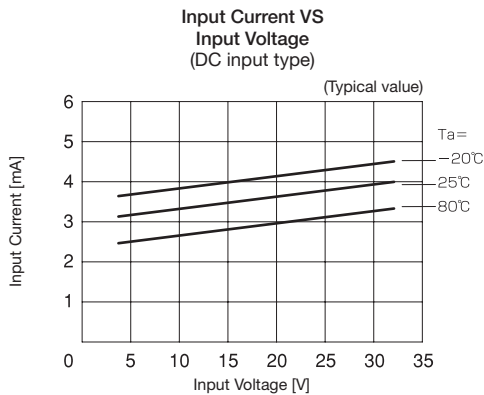
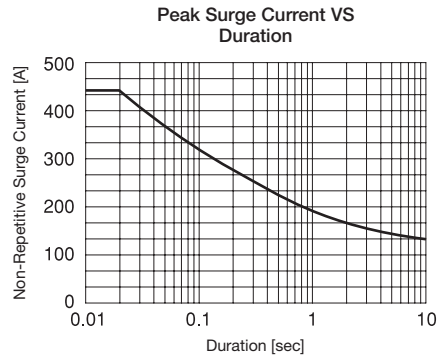
F1C-220, F1C-420



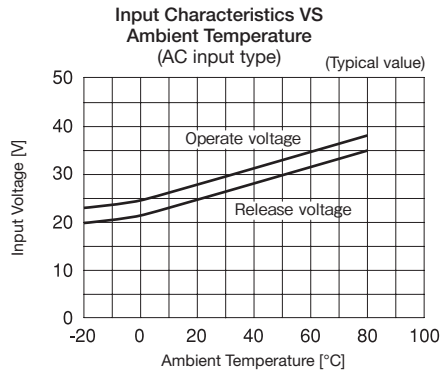
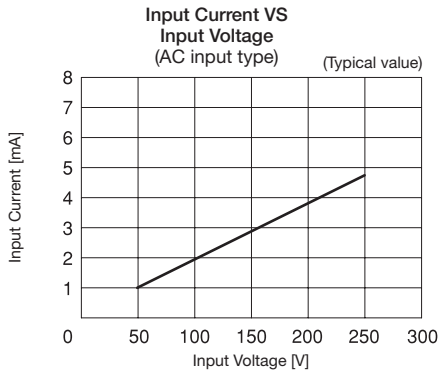
F1C-240, F1C-440



F1C-260



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 ※ Please contact JEL SYSTEM for further information.



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