




# M18A DC WITH N.O.+N.C. PROGRAMMABLE OUTPUT

Type	M18		M18		
Sensing mode	Through-beam mode		Diffuse mode		
Sensing picture					
Switching distance(sn)	15mm		500mm		
Picture					
Nominal Voltage	10-30VDC		10-30VDC		
Residual Ripple	≤10%		≤10%		
Tolerance	±10%Sn		±10%Sn		
Hysteresis	10%		10%		
Emission	Infrared(880nm)		Infrared(880nm)		
Output	NPN or PNP (programmable)		NPN or PNP (programmable)		
Contact	N.O. & N.C. (programmable)		N.O. & N.C. (programmable)		
Max. Output Current	200mA		200mA		
No Load Current	30mA or less		30mA or less		
Voltage Drop(Sensor On)	≤2.5V		≤2.5V		
Sensitivity Adjustment	Trimmer 1 tum		Trimmer 1 tum		
Response Time	1mS		1mS		
Short Circuit Protection	Yes		Yes		
Electric Protections	Yes		Yes		
Temperature Limits	-25 ~ +55°C		-25 ~ +55 °C		
Ambient humidity	35 to 85% RH		35 to 85% RH		
Light Immunity	>10.000Lux		>10.000Lux		
Protection Degree	IP67		IP67		
Housing Material	PBT Plastic or Nickel plated brass		PBT Plastic or Nickel plated brass		
Sensing object	φ8mm or more		20x20cm white paper		
Wiring diagram(see page 21-16)					
Brass Housing	Emitter :	F1CTM18015MDEI3B2-A <a href="#">A28</a>	F1CTM18015MDEIEB4-A <a href="#">A29</a>	F1CDM180500NSI4A2-A <a href="#">A24</a>	F1CDM180500NSIEA4-A <a href="#">A25</a>
	NPN N.O.+N.C.	F1CTM18015MNSI4A2-A <a href="#">A24</a>	F1CTM18015MNSIEA4-A <a href="#">A25</a>	F1CDM180500PSI4A2-A <a href="#">A26</a>	F1CDM180500PSIEA4-A <a href="#">A27</a>
	PNP N.O.+N.C.	F1CTM18015MPSI4A2-A <a href="#">A26</a>	F1CTM18015MPSIEA4-A <a href="#">A27</a>		
Plastic Housing	Emitter :	F1CTP18015MDEI3B2-A <a href="#">A28</a>	F1CTP18015MDEIEB4-A <a href="#">A29</a>	F1CDP180500NSI4A2-A <a href="#">A24</a>	F1CDP180500NSIEA4-A <a href="#">A25</a>
	NPN N.O.+N.C.	F1CTP18015MNSI4A2-A <a href="#">A24</a>	F1CTP18015MNSIEA4-A <a href="#">A25</a>	F1CDP180500PSI4A2-A <a href="#">A26</a>	F1CDP180500PSIEA4-A <a href="#">A27</a>
	PNP N.O.+N.C.	F1CTP18015MPSI4A2-A <a href="#">A26</a>	F1CTP18015MPSIEA4-A <a href="#">A27</a>		
Dimensions (unit: mm)					
Connect	2m PVC (φ4x0.25mm <sup>2</sup> )	M12 Euro style	2m PVC (φ4x0.25mm <sup>2</sup> )	M12 Euro style	
Weight	Approx.112 g	Approx.75 g	Approx.112 g	Approx.75 g	

# M18A DC WITH N.O.+N.C. PROGRAMMABLE OUTPUT

M18
Diffuse mode

150mm

M18
Retro-reflective mode

3m

M18
Retro-reflective mode (With Polarizing Filters)

1m



10-30VDC
≤10%
±10%Sn
10%
Infrared(880nm)
NPN or PNP (programmable)
N.O. & N.C. (programmable)
200mA
30mA or less
≤2.5V
Trimmer 1 tum
1mS
Yes
Yes
-25 ~ +55 °C
35 to 85% RH
>10.000Lux
IP67
PBT Plastic or Nickel plated brass
10x10cm white paper

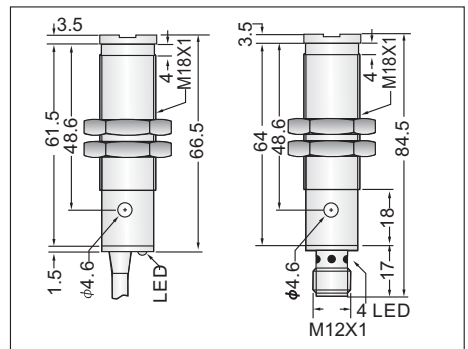
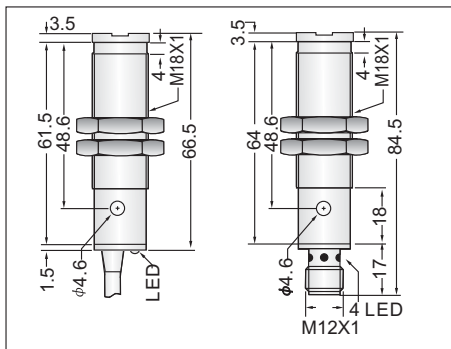
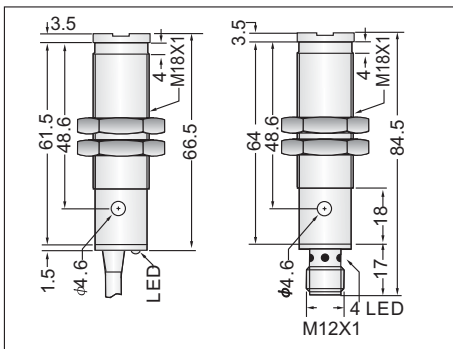
10-30VDC
≤10%
±10%Sn
10%
Infrared(880nm)
NPN or PNP (programmable)
N.O. & N.C. (programmable)
200mA
30mA or less
≤2.5V
Trimmer 1 tum
1mS
Yes
Yes
-25 ~ +55 °C
35 to 85% RH
>10.000Lux
IP67
PBT Plastic or Nickel plated brass
D51 Mirror

10-30VDC
≤10%
±10%Sn
10%
Red(660nm)
NPN or PNP (programmable)
N.O. & N.C. (programmable)
200mA
30mA or less
≤2.5V
Trimmer 1 tum
1mS
Yes
Yes
-25 ~ +55 °C
35 to 85% RH
>10.000Lux
IP67
PBT Plastic or Nickel plated brass
D51 Mirror

F1CDM180150NSI4A2-A <sup>A24</sup>	F1CDM180150NSIEA4-A <sup>A25</sup>
F1CDM180150PSI4A2-A <sup>A26</sup>	F1CDM180150PSIEA4-A <sup>A27</sup>
F1CDP180150NSI4A2-A <sup>A24</sup>	F1CDP180150NSIEA4-A <sup>A25</sup>
F1CDP180150PSI4A2-A <sup>A26</sup>	F1CDP180150PSIEA4-A <sup>A27</sup>

F1CLM183000NSI4A2-A <sup>A24</sup>	F1CLM183000NSIEA4-A <sup>A25</sup>
F1CLM183000PSI4A2-A <sup>A26</sup>	F1CLM183000PSIEA4-A <sup>A27</sup>
F1CLP183000NSI4A2-A <sup>A24</sup>	F1CLP183000NSIEA4-A <sup>A25</sup>
F1CLP183000PSI4A2-A <sup>A26</sup>	F1CLP183000PSIEA4-A <sup>A27</sup>

F1CLM181000NSI4A2/F-A <sup>A24</sup>	F1CLM181000NSIEA4/F-A <sup>A25</sup>
F1CLM181000PSI4A2/F-A <sup>A26</sup>	F1CLM181000PSIEA4/F-A <sup>A27</sup>
F1CLP181000NSI4A2/F-A <sup>A24</sup>	F1CLP181000NSIEA4/F-A <sup>A25</sup>
F1CLP181000PSI4A2/F-A <sup>A26</sup>	F1CLP181000PSIEA4/F-A <sup>A27</sup>



2m PVC (φ4x0.25mm <sup>2</sup> ) Approx.112 g	M12 Euro style Approx.75 g
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2m PVC (φ4x0.25mm <sup>2</sup> ) Approx.112 g	M12 Euro style Approx.75 g
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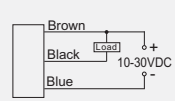
2m PVC (φ4x0.25mm <sup>2</sup> ) Approx.112 g	M12 Euro style Approx.75 g
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# FR SERIES PHOTOELECTRIC SENSORS

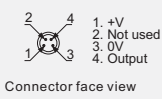
## FR Series wiring diagrams

### • M8 Receiver: NPN output (Through-beam)

#### A1 Cable output

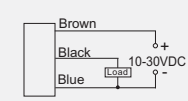


#### A2 Pico-style

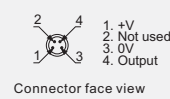


### • M8 Receiver: PNP output(Through-beam)

#### A3 Cable output

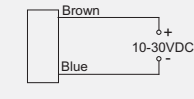


#### A4 Pico-style

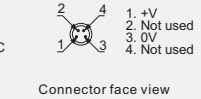


### • M8 Emitter: Wiring diagram(Through-beam)

#### A5 Cable output

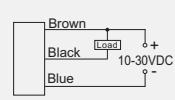


#### A6 Pico-style(M8)

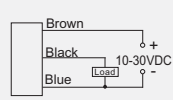


### • M12 Receiver Cable Output

#### A7 NPN output

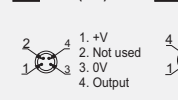


#### A8 PNP output

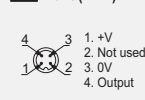


### • M12 Receiver Connector Output

#### A9 Pico(M8)



#### A10 Euro(M12)



### • M12 Emitter Cable Output

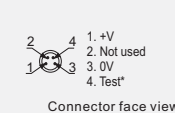
#### A11 Cable output



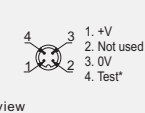
\* Test(black wire)=0V, Emitter off

### • M12 Emitter Connector Output

#### A12 Pico(M8)

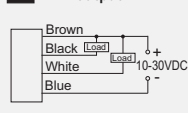


#### A13 Euro(M12)

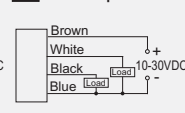


### • M12 NPN Cable Output

#### A14 NPN output

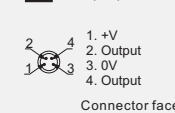


#### A15 PNP output

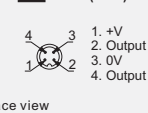


### • M12 Connector Output

#### A16 Pico(M8)

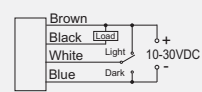


#### A17 Euro(M12)

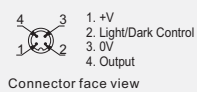


### • M18 NPN output

#### A18 Cable output

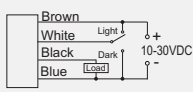


#### A19 Euro-style

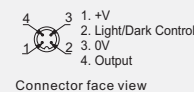


### • M18 PNP output

#### A20 Cable output

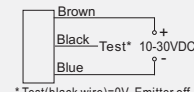


#### A21 Euro-style



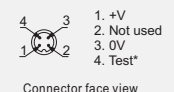
### • M18 Emitter: (Through-beam)

#### A22 Cable output



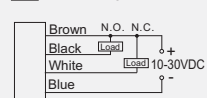
\* Test(black wire)=0V, Emitter off

#### A23 Euro-style

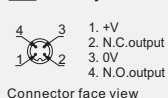


### • M18A DC NPN N.O. &N.C. Output

#### A24 Cable output

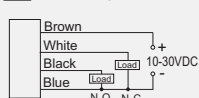


#### A25 Euro-style

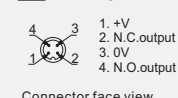


### • M18A PNP output

#### A26 Cable output

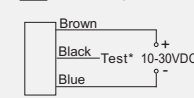


#### A27 Euro-style

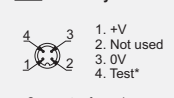


### • M18A Emitter(Through-beam)

#### A28 Cable output

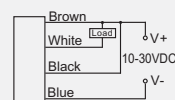


#### A29 Euro-style

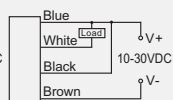


### A29 M18B DC Cable

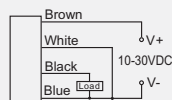
#### NPN-N.O.



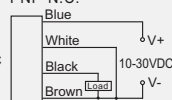
#### NPN-N.C.



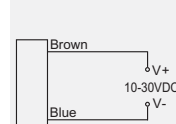
#### PNP-N.O.



#### PNP-N.C.



### A30 M18B Emitter(DC)



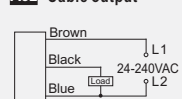
### A31 M18B Connection with connector (DC)



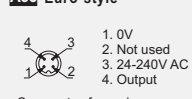
Output	Contact numbers			
	1	2	3	4
NPN N.O.	+	N.O.	-	+
NPN N.C.	-	N.C.	+	+
PNP N.O.	+	-	-	N.O.
PNP N.C.	-	-	+	N.C.
Emitter	+	-	-	+

### • M18 AC Wiring diagram

#### A32 Cable output

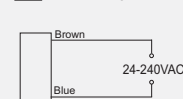


#### A33 Euro-style

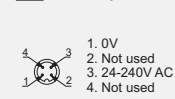


### • M18AC Emitter Wiring diagram

#### A34 Cable output



#### A35 Euro-style

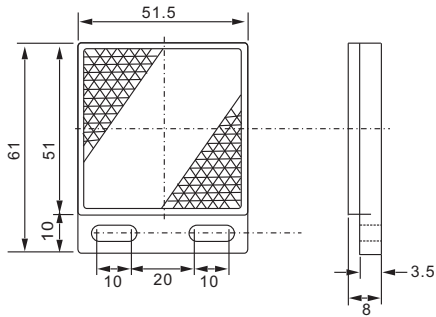


# FR SERIES PHOTOELECTRIC SENSORS

## FR Series Accessories

### Accessories (unit:mm)

• Reflectors D51



• Reflectors D83

