特点 Features

- 采用专用IC提高抗干扰能力
- 内置浪涌保护，电源反接保护电路
- 寿命长，高可靠性，操作简单，经济实惠
- 红色LED状态指示灯，易于识别运行状态
- IP65防护等级(IEC规格)

- Exclusively designed IC for improving anti-jamming capability
- Inside surge protection, reverse polarity protection
- Long use-life cycle and high reliability, easy install, enconomic price
- Red LED status indication, easy to confirm work situation
- Protection structure IP65(IEC standard)

选型说明 Model Designation

CG F 30 E - D C30 D N A / □ □ □ □ - L2
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭

序号 No	项目 Item	代号 Code	说明 Description
①	分类代号 Classification code	CG	光电式 Photoelectric type
②	外形代号 Shape code	F	方形 Quadrate
③	尺寸代码 Size code	30	30=□30、50=□50、70=□70
④	产品类别 Product category	E	经济型 Economical
⑤	安装形式 Installation form	D	漫反射 Bloom
		R	镜面反射 Specular reflection
		T	对射 Correlation
⑥	检测距离 Detection distance	C30	C10=10cm、C30=30cm、C50=50cm、C100=100cm
		M1	M1=1m、M5=5m、M10=10m
⑦	工作电压 Operating voltage	A	90...250VAC
		D	10...30VDC
		E	20...60VDC

Model ranges: CGF30E/50E-RM1 = 4m; CGF30E/50E-TM5 = 10m. Use the model tables.

⑧	输出方式 Output mode	N	NPN
		P	PNP
		R	继电器 Relay
		K	AC二线 Second-line
		L	DC二线 Second-line
⑨	输出状态 Output state	A	NO
		B	NC
		C	NO+NC
⑩	光源颜色 Light source color	无 None	红外 Infrared
		R	红色光源 Red light source
		G	绿色光源 Green light source
		B	蓝色光源 Blue light source
		W	白色光源 White light source
⑪	光源类型 Light source type	无 None	LED
		S	点光源 Point light source
⑫	连接形式 Connection form	无 None	引线式自由出线端 Lead type free outlet end
		M	M12针式 直头 4芯 A编码 M12 pin straight head 4-core A coding
		M□□□□	M型接插件 M□□□□ M-type connector M□□□□
		D□□□□	DT型接插件 D□□□□ DT-type connector D□□□□
		A□□□□	AMP型接插件A□□□□ AMP-type connector A□□□□
		S□□□□	SM型接插件 S□□□□ SM-type connector S□□□□
⑬	电线材质 Wire material	无 None	PVC
		U	PUR
		VP	PVC+屏蔽 Shield
		UP	Shielded PUR
⑭	引线长度 Lead length	L1-L5	L1表示1米线（线长不仅限L5）L1 means 1 meter line (line length is not limited to L5)

国际认证规格 International Certification Specifications

认证规格 Certification specifications	规格 Specifications	文件No. Document
CCC	GB/T14048.10	请咨询昌得代表处 Please consult the CNTD Representative Office
TUV	EN 60947-5-2	
CE		

安全规格认证额定值 Safety Specification Certification Rating

CCC(GB/T 14048.10)、TUV(EN60947-5-2)

类型与额定值 Type and Rating
AC-140 24~250VAC 200mA DC-13 10~30VDC 200mA

规格 Specifications

漫反射型 Diffuse-reflective type

型号名 Model	CGF50E-DC30DRC CGF50E-DC30ARC	CGF70E-DC50DRC CGF70E-DC50ARC
检测距离 Sensing distance	30cm(可调)	50cm(可调)
应差距离 Hysteresis	3-20%	
光源 Light source	红外LED (880nm) Infrared LED (880nm)	
消耗电流 Consumption current	25mA以下	
工作电压 Working voltage	10-30VDC / 90-250VAC(标准型Standard type)	
响应时间 Response time	< 8.2ms	
残留电压 Residual voltage	1V以下 Max. 1V	
温度的影响 Affection by Temp	在-25~+55°C温度范围内+20°C时的检测距离的±10%以内 Max. ±10% for sensing distance at ambient temperature 20°C	
控制输出 Control output	3A	
绝缘阻抗 Insulation resistance	50MΩ以上(500VDC为基准) Min. 50MΩ(at 500VDC megger)	
耐电压 Dielectric strength	1500VAC 50/60Hz1分钟 1500VAC 50/60Hz for 1minute	
耐振动 Vibration	10~55Hz(周期1分钟）振幅1mm X, Y, Z各方向2小时 1mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours	
耐冲击 Shock	500m/s^2 (50G) X, Y, Z 各方向3次 500m/s^2(approx. 50G) X, Y, Z directions for 3 times	
显示灯 Indicator	动作指示灯(红色LED) Operation indicator(red LED)	
使用周围温度 Ambient temperature	-15~+55°C(未结冰状态 No icing)	
储存温度 Storage temperature	-15~+55°C(未结冰状态 No icing)	
使用周围湿度 Ambient humidity	35~95%RH (未结露状态 No condensation)	
保护电路 Protection circuit	浪涌保护电路 Surge protection circuit	
材质 Material	外壳：ABS，检测面：PMMA，一般线缆(灰色)：聚氯乙烯(PVC)，耐油性线缆(黑色)：聚氯乙烯(耐油强化型PVC) Case: ABS, Sensing surface: PMMA, Standard cable(Gray): Polyvinyl chloride(PVC), Oil resistant cable(Black): Oil resistant Polyvinyl chloride(PVC)	
连接线缆 Cable	φ6, 5P, 1.5m	/
	AWG22, 芯线直径:0.1mm, 芯线数:22, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores: 22, Insulator diameter: φ1.25	/
防护等级 Protection	IP65	

规格 Specifications

Diffuse-reflective type

型号名 Model	CGF30E-DC30DNA CGF30E-DC30DNB CGF30E-DC30DNC CGF30E-DC30DPA CGF30E-DC30DPB CGF30E-DC30DPC	CGF50E-DC30DNA CGF50E-DC30DNB CGF50E-DC30DNC CGF50E-DC30DPA CGF50E-DC30DPB CGF50E-DC30DPC	CGF70E-DC50DNA CGF70E-DC50DNB CGF70E-DC50DNC CGF70E-DC50DPA CGF70E-DC50DPB CGF70E-DC50DPC
检测距离 Sensing distance	30cm(可调 Adjustable)		50cm(可调Adjustable)
应差距离 Hysteresis	3-20%		
光源 Light source	红外LED (880nm) Infrared LED (880nm)		
消耗电流 Consumption current	25mA以下		
工作电压 Working voltage	10-30VDC		
响应时间 Response time	< 8.2ms		
残留电压 Residual voltage	1V以下 Max.1V		
温度的影响 Affection by Temp	在-25~+55°C温度范围内+20°C时的检测距离的±10%以内 Max. ±10% for sensing distance at ambient temperature 20°C		
控制输出 Control output	200mA以下 Max. 200mA		
绝缘阻抗 Insulation resistance	50MΩ以上(500VDC为基准) Min. 50MΩ(at 500VDC megger)		
耐电压 Dielectric strength	1500VAC 50/60Hz1分钟 1500VAC 50/60Hz for 1minute		
耐振动 Vibration	10~55Hz(周期1分钟） 振幅1mm X, Y, Z各方向2小时 1mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours		
耐冲击 ShocA	500m/s^2 (50G) X, Y, Z 各方向3次 500m/s^2(approx. 50G) X, Y, Z directions for 3 times		
显示灯 Indicator	动作指示灯(红色LED) Operation indicator(red LED)		
使用周围温度 Ambient temperature	-15~+55°C(未结冰状态 No icing)		
储存温度 Storage temperature	-15~+55°C(未结冰状态 No icing)		
使用周围湿度 Ambient humidity	35~95%RH (未结露状态 No condensation)		
保护电路 Protection circuit	浪涌保护电路，过流保护电路 Surge protection circuit, Overcurrent protection circuit		
材质 Material	外壳：ABS，检测面：PMMA，一般线缆(灰色)：聚氯乙烯(PVC)，耐油性线缆(黑色)：聚氯乙烯(耐油强化型PVC) Case: ABS, Sensing surface: PMMA, Standard cable(Gray): Polyvinyl chloride(PVC), Oil resistant cable(BlacA): Oil resistant Polyvinyl chloride(PVC)		
连接线缆 Cable	φ3.8, 3P,4P, 1.5m	φ6, 3P,4P, 1.5m	/
	AWG22, 芯线直径:0.1mm, 芯线数:25, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores: 25, Insulator diameter: φ1.25	AWG22, 芯线直径:0.1mm, 芯线数:22, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores: 22, Insulator diameter: φ1.25	/
防护等级 Protection	IP65		

规格 Specifications

镜面反射型 Retro-reflective type

型号名 Model	CGF50E-RM4DRC CGF50E-RM4ARC	CGF70E-RM5DRC CGF70E-RM5ARC
检测距离 Sensing distance	4m	5m
应差距离 Hysteresis	3-20%	
光源 Light source	红外LED (880nm) Infrared LED (880nm)	
消耗电流 Consumption current	25mA以下	
工作电压 Working voltage	10-30VDC / 90-250VAC(标准型Standard type)	
响应时间 Response time	< 8.2ms	
反光板 Reflector	HD02	
残留电压 Residual voltage	1V以下 Max. 1V	
温度的影响 Affection by Temp	在-25~+55°C温度范围内+20°C时的检测距离的±10%以内 Max. ±10% for sensing distance at ambient temperature 20°C	
控制输出 Control output	3A	
绝缘阻抗 Insulation resistance	50MΩ以上(500VDC为基准) Min. 50MΩ(at 500VDC megger)	
耐电压 Dielectric strength	1500VAC 50/60Hz1分钟 1500VAC 50/60Hz for 1minute	
耐振动 Vibration	10~55Hz(周期1分钟）振幅1mm X, Y, Z各方向2小时 1mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours	
耐冲击 Shock	500m/s^2 (50G) X, Y, Z 各方向3次 500m/s^2(approx. 50G) X, Y, Z directions for 3 times	
显示灯 Indicator	动作指示灯(红色LED) Operation indicator(red LED)	
使用周围温度 Ambient temperature	-15~+55°C(未结冰状态 No icing)	
储存温度 Storage temperature	-15~+55°C(未结冰状态 No icing)	
使用周围湿度 Ambient humidity	35~95%RH (未结露状态 No condensation)	
保护电路 Protection circuit	浪涌保护电路 Surge protection circuit,	
材质 Material	外壳：ABS，检测面：PMMA，一般线缆(灰色)：聚氯乙烯(PVC)，耐油性线缆(黑色)：聚氯乙烯(耐油强化型PVC) Case: ABS, Sensing surface: PMMA, Standard cable(Gray): Polyvinyl chloride(PVC), Oil resistant cable(Black): Oil resistant Polyvinyl chloride(PVC)	
连接线缆 Cable	φ6, 5P, 1.5m	/
	AWG22, 芯线直径:0.1mm, 芯线数:22, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores: 22, Insulator diameter: φ1.25	/
防护等级 Protection	IP65	

规格 Specifications

镜面反射型 Retro-reflective type

型号名 Model		CGF30E-RM1DNA CGF30E-RM1DNB CGF30E-RM1DNC CGF30E-RM1DPA CGF30E-RM1DPB CGF30E-RM1DPC	CGF50E-RM1DNA CGF50E-RM1DNB CGF50E-RM1DNC CGF50E-RM1DPA CGF50E-RM1DPB CGF50E-RM1DPC	CGF70E-RM5DNA CGF70E-RM5DNB CGF70E-RM5DNC CGF70E-RM5DPA CGF70E-RM5DPB CGF70E-RM5DPC
检测距离 Sensing distance		4m		5m
应差距离 Hysteresis		3-20%		
光源 Light source		红外LED (880nm) Infrared LED (880nm)		
消耗电流 Consumption current		25mA以下		
工作电压 Working voltage		10-30VDC		
响应时间 Response time		< 8.2ms		
反光板 Reflector	高端型 High-end type	HD02		
	标准型 Standard type	HDE02		
残留电压 Residual voltage		1V以下 Max. 1V		
温度的影响 Affection by Temp		在-25~+55°C温度范围内+20°C时的检测距离的±10%以内 Max. ±10% for sensing distance at ambient temperature 20°C		
控制输出 Control output		200mA以下 Max. 200mA		
绝缘阻抗 Insulation resistance		50MΩ以上(500VDC为基准) Min. 50MΩ(at 500VDC megger)		
耐电压 Dielectric strength		1500VAC 50/60Hz1分钟 1500VAC 50/60Hz for 1minute		
耐振动 Vibration		10~55Hz(周期1分钟）振幅1mm X, Y, Z各方向2小时 1mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours		
耐冲击 Shock		500m/s^2 (50G) X, Y, Z 各方向3次 500m/s^2(approx. 50G) X, Y, Z directions for 3 times		
显示灯 Indicator		动作指示灯(红色LED) Operation indicator(red LED)		
使用周围温度 Ambient temperature		-15~+55°C(未结冰状态 No icing)		
储存温度 Storage temperature		-15~+55°C(未结冰状态 No icing)		
使用周围湿度 Ambient humidity		35~95%RH (未结露状态 No condensation)		
保护电路 Protection circuit		浪涌保护电路，过流保护电路 Surge protection circuit, Overcurrent protection circuit		
材质 Material		外壳：ABS，检测面：PMMA，一般线缆(灰色)：聚氯乙烯(PVC)，耐油性线缆(黑色)：聚氯乙烯(耐油强化型PVC) Case: ABS, Sensing surface: PMMA, Standard cable(Gray): Polyvinyl chloride(PVC), Oil resistant cable(Black): Oil resistant Polyvinyl chloride(PVC)		
连接线缆 Cable		φ3.8, 3P,4P, 1.5m	φ6, 3P,4P, 1.5m	/
		AWG22, 芯线直径:0.1mm, 芯线数:25, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores: 25, Insulator diameter: φ1.25	AWG22, 芯线直径:0.1mm, 芯线数:22, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores: 22, Insulator diameter: φ1.25	/
防护等级 Protection		IP65		

规格 Specifications

对射型 Through-bethod type

型号名 Model	CGF50E-TM10DRC CGF50E-TM10ARC	CGF70E-TM15DRC CGF70E-TM15ARC
检测距离 Sensing distance	10m	15m
应差距离 Hysteresis	3-20%	
光源 Light source	红外LED (880nm) Infrared LED (880nm)	
消耗电流 Consumption current	50mA以下	
工作电压 Working voltage	10-30VDC / 90-250VAC(标准型Standard type)	
响应时间 Response time	< 8.2ms	
残留电压 Residual voltage	1V以下 Max. 1V	
温度的影响 Affection by Temp	在-25~+55°C温度范围内+20°C时的检测距离的±10%以内 Max. ±10% for sensing distance at ambient temperature 20°C	
控制输出 Control output	3A	
绝缘阻抗 Insulation resistance	50MΩ以上(500VDC为基准) Min. 50MΩ(at 500VDC megger)	
耐电压 Dielectric strength	1500VAC 50/60Hz1分钟 1500VAC 50/60Hz for 1minute	
耐振动 Vibration	10~55Hz(周期1分钟）振幅1mm X, Y, Z各方向2小时 1mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours	
耐冲击 Shock	500m/s^2 (50G) X, Y, Z 各方向3次 500m/s^2(approx. 50G) X, Y, Z directions for 3 times	
显示灯 Indicator	动作指示灯(红色LED) Operation indicator(red LED)	
使用周围温度 Ambient temperature	-15~+55°C(未结冰状态 No icing)	
储存温度 Storage temperature	-15~+55°C(未结冰状态 No icing)	
使用周围湿度 Ambient humidity	35~95%RH (未结露状态 No condensation)	
保护电路 Protection circuit	浪涌保护电路 Surge protection circuit	
材质 Material	外壳：ABS，检测面：PMMA，一般线缆(灰色)：聚氯乙烯(PVC)，耐油性线缆(黑色)：聚氯乙烯(耐油强化型PVC) Case: ABS, Sensing surface: PMMA, Standard cable(Gray): Polyvinyl chloride(PVC), Oil resistant cable(Black): Oil resistant Polyvinyl chloride(PVC)	
连接线缆 Cable	φ6, 5P, 1.5m	/
	AWG22, 芯线直径:0.1mm, 芯线数:22, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores: 22, Insulator diameter: φ1.25	/
防护等级 Protection	IP65	

规格 Specifications

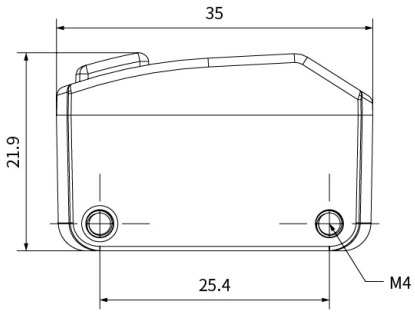
对射型 Through-bethod type

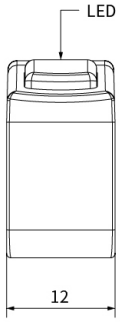
型号名 Model	CGF30E-TM5DNA CGF30E-TM5DNB CGF30E-TM5DNC CGF30E-TM5DPA CGF30E-TM5DPB CGF30E-TM5DPC	CGF50E-TM5DNA CGF50E-TM5DNB CGF50E-TM5DNC CGF50E-TM5DPA CGF50E-TM5DPB CGF50E-TM5DPC	CGF70E-TM15DNA CGF70E-TM15DNB CGF70E-TM15DNC CGF70E-TM15DPA CGF70E-TM15DPB CGF70E-TM15DPC
检测距离 Sensing distance	10m		15m
应差距离 Hysteresis	3-20%		
光源 Light source	红外LED (880nm) Infrared LED (880nm)		
消耗电流 Consumption current	40mA以下		
工作电压 Working voltage	10-30VDC		
响应时间 Response time	< 8.2ms		
残留电压 Residual voltage	1V以下 Max. 1V		
温度的影响 Affection by Temp	在-25~+55°C温度范围内+20°C时的检测距离的±10%以内 Max. ±10% for sensing distance at ambient temperature 20°C		
控制输出 Control output	200mA以下 Max. 200mA		
绝缘阻抗 Insulation resistance	50MΩ以上(500VDC为基准) Min. 50MΩ(at 500VDC megger)		
耐电压 Dielectric strength	1500VAC 50/60Hz1分钟 1500VAC 50/60Hz for 1minute		
耐振动 Vibration	10~55Hz(周期1分钟）振幅1mm X, Y, Z各方向2小时 1mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours		
耐冲击 Shock	500m/s^2 (50G) X, Y, Z 各方向3次 500m/s^2(approx. 50G) X, Y, Z directions for 3 times		
显示灯 Indicator	动作指示灯(红色LED) Operation indicator(red LED)		
使用周围温度 Ambient temperature	-15~+55°C(未结冰状态 No icing)		
储存温度 Storage temperature	-15~+55°C(未结冰状态 No icing)		
使用周围湿度 Ambient humidity	35~95%RH (未结露状态 No condensation)		
保护电路 Protection circuit	浪涌保护电路，过流保护电路 Surge protection circuit, Overcurrent protection circuit		
材质 Material	外壳：ABS，检测面：PMMA，一般线缆(灰色)：聚氯乙烯(PVC)，耐油性线缆(黑色)：聚氯乙烯(耐油强化型PVC) Case: ABS, Sensing surface: PMMA, Standard cable(Gray): Polyvinyl chloride(PVC), Oil resistant cable(Black): Oil resistant Polyvinyl chloride(PVC)		
连接线缆 Cable	φ3.8, 3P,4P, 1.5m	φ6, 2P,3P,4P, 1.5m	/
	AWG22, 芯线直径:0.1mm, 芯线数:25, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores: 25, Insulator diameter: φ1.25	AWG22, 芯线直径:0.1mm, 芯线数:22, 绝缘皮外径: φ1.25mm (AWG22, Core diameter: 0.1mm, Number of cores:22, Insulator diameter: φ1.25	/
防护等级 Protection	IP65		

外观和尺寸 Appearance and Dimension

CGF30E-D

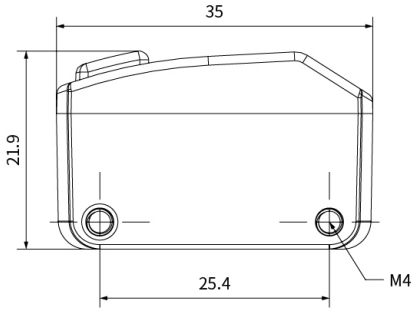
漫反射型
Diffuse-reflective type

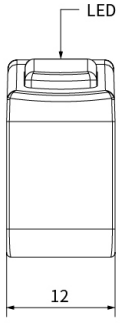




CGF30E-R

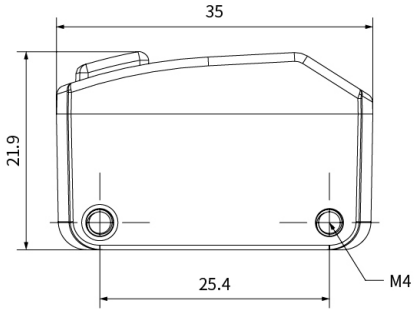
镜面反射型
Retro-reflective type

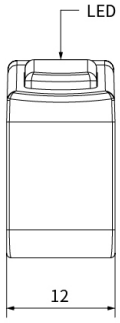




CGF30E-T

对射型
Through-bethod type

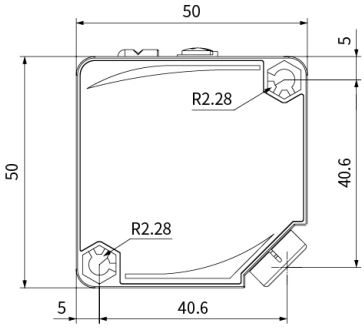


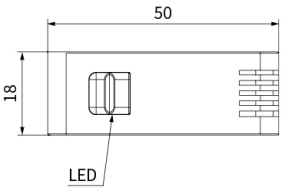


外观和尺寸 Appearance and Dimension

CGF50E-D

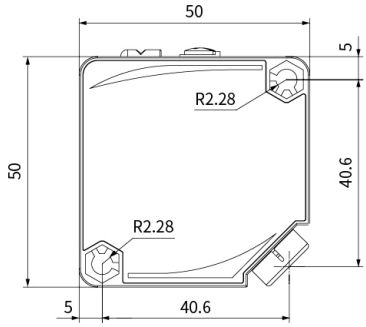
漫反射型
Diffuse-reflective type

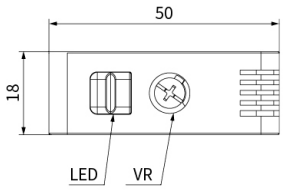




CGF50E-R

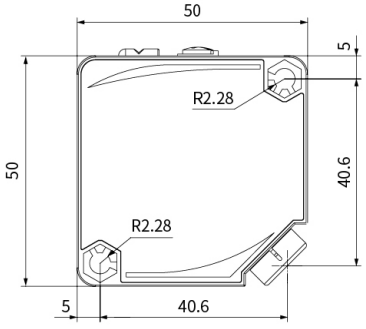
镜面反射型
Retro-reflective type

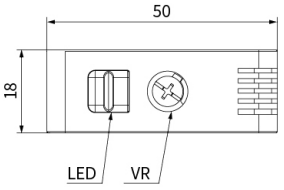




CGF50E-T

对射型
Through-bethod type

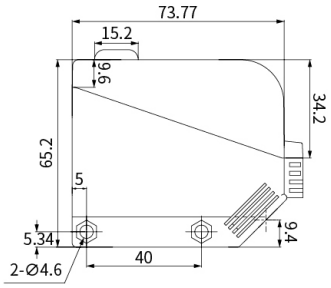


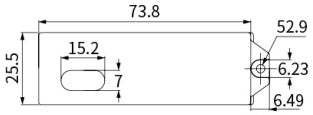


外观和尺寸 Appearance and Dimension

CGF70E-D

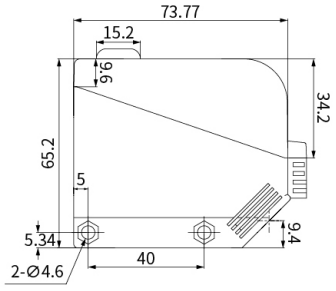
漫反射型
Diffuse-reflective type

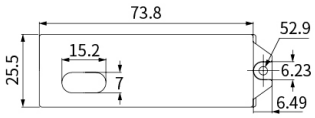




CGF70E-R

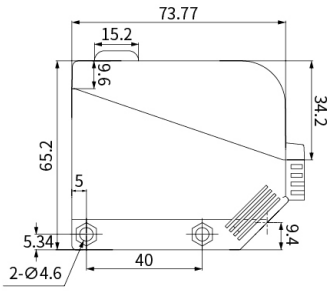
镜面反射型
Retro-reflective type

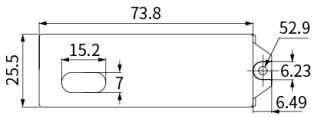




CGF70E-T

对射型
Through-bethod type





使用注意事项 Using Precautions

本公司产品是作为工业产品而设计生产，严格遵守工业产品标准。我司明确声明，除非经过特殊设计并得到我司明确书面确认，我司产品不适用于以下应用场合：

- 要求极高可靠性的应用场合，包括核能、燃气、电力等要求长期稳定运行的系统。
- 要求极高安全性的应用场合，涉及人身安全与财产的情况。
- 苛刻条件、严酷环境的应用场合，包括室外、存在化学污染、电磁、振动或冲击影响的环境。
- 有火灾或爆炸风险的应用场合，包括存在易燃爆性气体、强酸强碱化学品等物质的环境。
- 涉及军工用途、航天航空项目的应用场合。

The company’ s products are designed and produced as industrial products, in strict compliance with industrial product standards. We expressly declare that, unless specifically designed and expressly confirmed by us in writing, our products are not intended for the following applications:

- Applications that require high reliability, including nuclear, gas, electric and other systems that require long-term stable operation.
- Applications requiring very high security, situations involving personal safety and property.
- Applications in harsh conditions, harsh environments, including outdoor, chemical contamination, electromagnetic, vibration or shock effects.
- Applications where there is a risk of fire or explosion, including environments where flammable and explosive gases, strong acids and alkali chemicals are present.
- Applications involving military use and aerospace projects.