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□ - D C100 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 Product size	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	无 None	标准型 Normal form
⑤	安装形式 Installation form	D	漫反射 Bloom
		R	镜面反射 Specular reflection
		T	对射 Correlation
		Y	背景抑制 Background suppression
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
		S	12..240VDC/24..240VAC

⑧	输出方式 Output mode	N	NPN
		P	PNP
		R	继电器 Relay
		K	AC二线 2 wire
		L	DC二线 2 wire
		E	NPN/PNP
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
		L	激光光源 Laser source
		S	点光源 Point light source
		X	线光源 Line 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□□□□ Type DT connector D□□□□
		A□□□□	AMP型接插件 A□□□□ AMP type connector A□□□□
		S□□□□	SM型接插件 S□□□□ SM connector S□□□□
⑬	电线材质 Wire material	无 None	PVC
		U	PUR
		VP	PVC+屏蔽 shielding
		UP	PUC+屏蔽 shielding
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	CGF50-DC30SRC	CGF70-DC50SRC
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	24-250VDC/AC(高端型High-end type) 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, 2m	/
	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	CGF30-DC100DNC CGF30-DC100DPC	CGF50-DC30DNA CGF50-DC30DNB CGF50-DC30DNC CGF50-DC30DPA CGF50-DC30DPB CGF50-DC30DPC	CGF70-DC50DNA CGF70-DC50DNB CGF70-DC50DNC CGF70-DC50DPA CGF70-DC50DPB CGF70-DC50DPC
检测距离 Sensing distance	1m	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, 2m	φ6, 3P,4P, 2m	/
	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	CGF50-RM4SRC	CGF70-RM5SRC
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	24-250VDC/AC(高端型High-end type) 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, 2m	/
	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		CGF30-RM3DNC CGF30-RM3DPC	CGF50-RM4DNA CGF50-RM4DNB CGF50-RM4DNC CGF50-RM4DPA CGF50-RM4DPB CGF50-RM4DPC	CGF70-RM5DNA CGF70-RM5DNB CGF70-RM5DNC CGF70-RM5DPA CGF70-RM5DPB CGF70-RM5DPC
检测距离 Sensing distance		3m	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, 2m	φ6, 3P,4P, 2m	/
		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	CGF50-TM10SRC	CGF70-TM15SRC
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	24-250VDC/AC(高端型High-end type) 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, 2m	/
	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

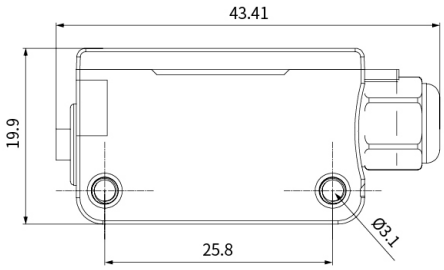
对射型 Through-bethod type

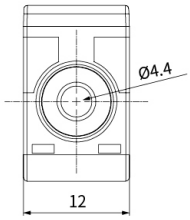
型号名 Model	CGF30-TM10DNC CGF30-TM10DPC	CGF50-TM10DNA CGF50-TM10DNB CGF50-TM10DNC CGF50-TM10DPA CGF50-TM10DPB CGF50-TM10DPC	CGF70-TM15DNA CGF70-TM15DNB CGF70-TM15DNC CGF70-TM15DPA CGF70-TM15DPB CGF70-TM15DPC
检测距离 Sensing distance	10m		15m
应差距离 Hysteresis	3-20%		
光源 Light source	红外LED (880nm) Infrared LED (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, 2m	φ6, 2P,3P,4P, 2m	/
	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

CGF30-D

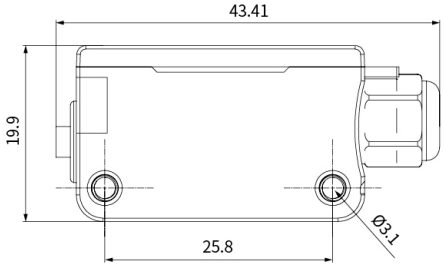
漫反射型
Diffuse-reflective type

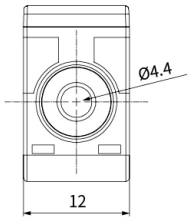




CGF70-R

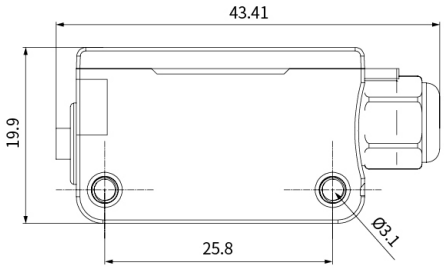
镜面反射型
Retro-reflective type

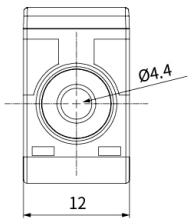




CGF70-T

对射型
Through-bethod type

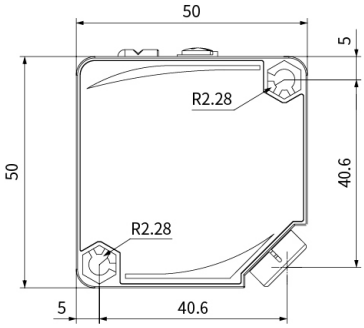


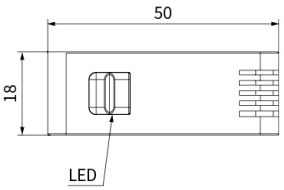


外观和尺寸 Appearance and Dimension

CGF50-D

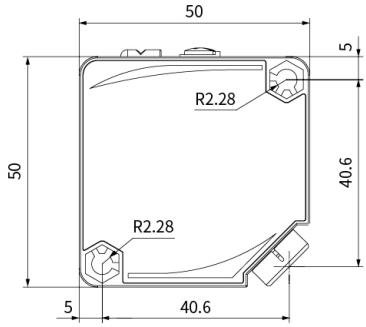
漫反射型
Diffuse-reflective type

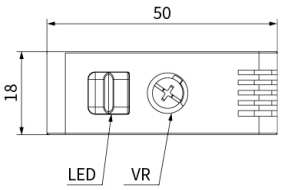




CGF50-R

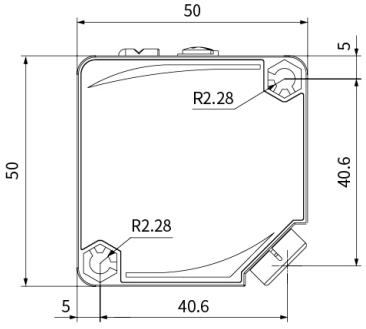
镜面反射型
Retro-reflective type

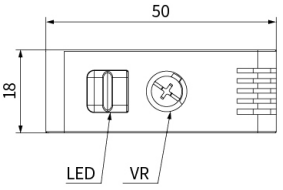




CGF50-T

对射型
Through-bethod type

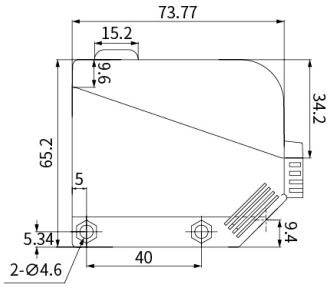


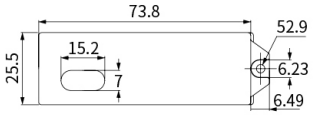


外观和尺寸 Appearance and Dimension

CGF70-D

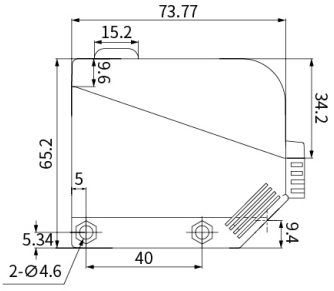
漫反射型
Diffuse-reflective type

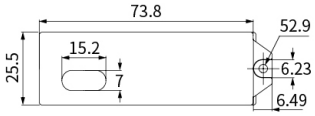




CGF70-R

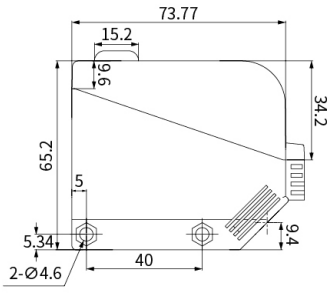
镜面反射型
Retro-reflective type

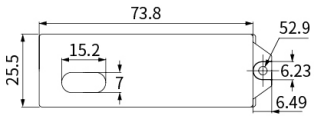




CGF70-T

对射型
Through-bethod type





使用注意事项 Using Precautions

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- 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。

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- 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.