Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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HARTING

Pushing Performance

People | Power | Partnership

HARTING F.O. Components and Systems

Transforming customer wishes into concrete solutions

The HARTING Technology Group is skilled in the fields of electrical, electronic and optical connection, transmission and networking, as well as in manufacturing, mechatronics and software creation. The Group uses these skills to develop customized solutions and products such as connectors for energy and data transmission applications including, for example, mechanical engineering, rail technology, wind energy plants, factory automation and the telecommunications sector. In addition, HARTING also produces electro-magnetic components for the automobile industry and offers solutions in the field of Enclosures and Shop Systems.
The HARTING Group currently comprises 36 subsidiary companies and worldwide distributors employing a total of approximately 3,500 staff.

HARTING Subsidiary company HARTING Representatives

We aspire to top performance.

Connectors ensure functionality. As core elements of electrical and optical wiring, connection and infrastructure technologies, they are essential in enabling the modular construction of devices, machines and systems across a very wide range of industrial applications. Their reliability is a crucial factor guaranteeing smooth functioning in the manufacturing area, in telecommunications, applications in medical technology – in fact, connectors are at work in virtually every conceivable application area. Thanks to the consistent further development of our technologies, customers enjoy investment security and benefit from durable, long term functionality.

Always at hand, wherever our customers may be.

Increasing industrialization is creating growing markets characterized by widely diverging demands and requirements. The search for perfection, increasingly efficient processes and reliable technologies is a common factor in all sectors across the globe.

HARTING is providing these technologies – in Europe, America and Asia. The HARTING professionals at our international subsidiaries engage in close, partnership based interaction with our customers, right from the very early product development phases, in order to realize customer demands and requirements in the best possible manner.

Our people on location form the interface to the centrally coordinated development and production departments. In this way, our customers can rely on consistently high, superior product quality – worldwide.

Our claim: pushing performance.

HARTING provides more than optimally attuned components. In order to serve our customers with the best possible solutions, HARTING is able to contribute a great deal more and play a closely integrative role in the value creation process.

From ready assembled cables through to control racks or ready-to-go control desks: Our aim is to generate the maximum benefits for our customers – without compromise!

Quality creates reliability – and warrants trust.

The HARTING brand stands for superior quality and reliability – worldwide. The standards we set are the result of consistent, stringent quality management that is subject to regular certifications and audits.

EN ISO 9001, the EU Eco-Audit and ISO 14001:2004 are key elements here. We take a proactive stance to new requirements, which is why HARTING ranks among the first companies worldwide to have obtained the new IRIS quality certificate for rail vehicles.

HARTING technology creates added value for customers.
Technologies by HARTING are at work worldwide. HARTING's presence stands for smoothly functioning systems, powered by intelligent connectors, smart infrastructure solutions and mature network systems. In the course of many years of close, trust-based cooperation with its customers, the HARTING Technology Group has advanced to one of the worldwide leading specialists for connector technology. Extending beyond the basic functionalities demanded, we offer individual customers specific and innovative solutions. These tailored solutions deliver sustained effects, provide investment security and enable customers to achieve strong added value.

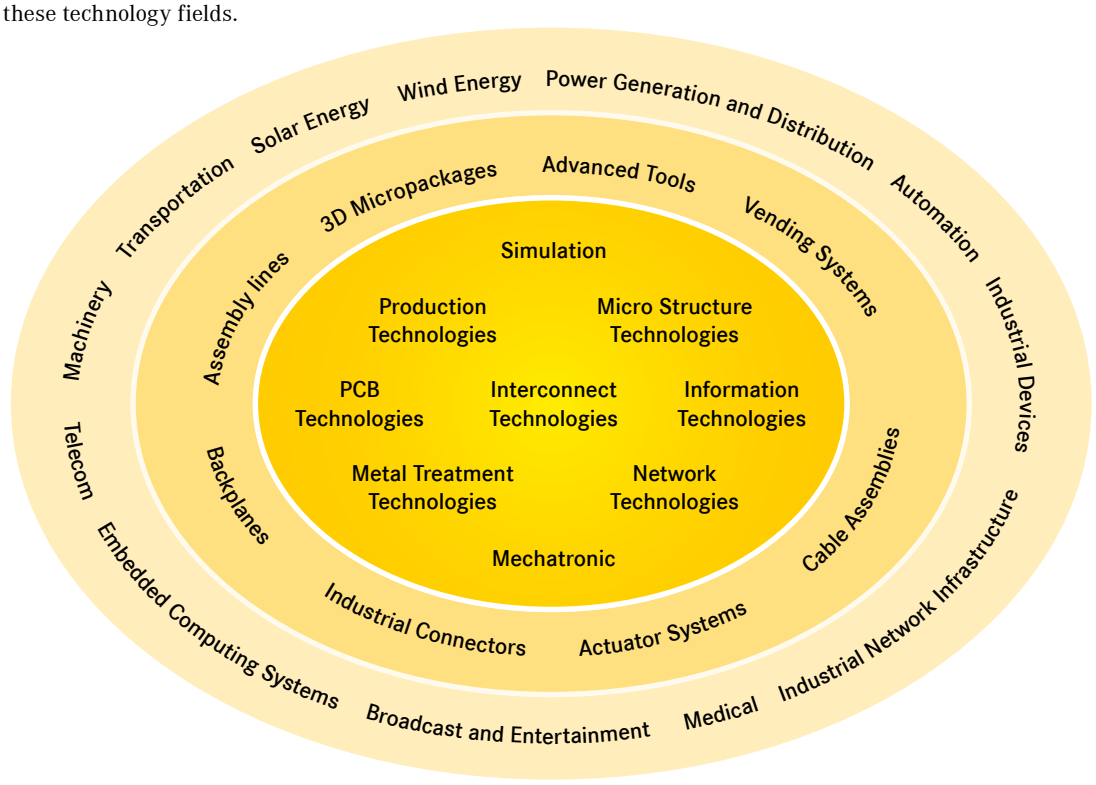
Opting for HARTING opens up an innovative, complex world of concepts and ideas.
In order to develop connectivity and network solutions serving an exceptionally wide range of connector applications and task scopes in a professional and cost optimized manner, HARTING not only commands the full array of conventional tools and basic technologies. Over and beyond these capabilities, HARTING is constantly harnessing and refining its broad base of knowledge and experience to create new solutions that ensure continuity at the same time. In securing this know-how lead, HARTING draws on a wealth of sources from both in-house research and the world of applications alike.
Salient examples of these sources of innovative knowledge include microstructure technologies, 3D design and construction technology, as well as high temperature or ultrahigh frequency applications that are finding use in telecommunications or automation networks, in the automotive industry, or in industrial sensor and actuator applications, RFID and wireless technologies, in addition to packaging and housing made of plastics, aluminum or stainless steel.

HARTING solutions extend across technology boundaries.
Drawing on the comprehensive resources of the group's technology pool, HARTING devises practical solutions for its customers. Whether this involves industrial networks for manufacturing automation, or hybrid interface solutions for wireless telecommunication infrastructures, 3D circuit carriers with microstructures, or cable assemblies for high-temperature applications in the automotive industry – HARTING technologies offer far more than components, and represent mature, comprehensive solutions attuned to individual customer requirements and wishes. The range covers ready-to-use cable configurations, completely assembled backplanes and board system carriers, as well as fully wired and tested control panels.
In order to ensure the future proof design of RF- and EMC-compatible interface solutions, the central HARTING laboratory (certified to EN 45001) provides simulation tools, as well as experimental, testing and diagnostics facilities all the way through to scanning electron microscopes. In the selection of materials and processes, lifecycle and environmental aspects play a key role, in addition to product and process capability considerations.

HARTING knowledge is practical know-how generating synergy effects.

HARTING commands decades of experience with regard to the applications conditions of connectors in telecommunications, computer and network technologies and medical technologies, as well as industrial automation technologies, such as the mechanical engineering and plant engineering areas, in addition to the power generation industry or the transportation sector. HARTING is highly conversant with the specific application areas in all of these technology fields.

The key focus is on applications in every solution approach. In this context, uncompromising, superior quality is our hallmark. Every new solution found will invariably flow back into the HARTING technology pool, thereby enriching our resources. And every new solution we go on to create will draw on this wealth of resources in order to optimize each and every individual solution. In this way, HARTING is synergy in action.



Field of application

HARTING Industrial Connectors are applicable in a wide variety of electronic and electrical applications. The degree of protection of all hoods and housings is in accordance with International Standard IEC 60 529, EN 60 529.

- Power Utilities
- Robotics
- Chemical Plants
- Machine Tool Controls
- Injection Moulding
- Industrial Instrumentation
- Conveyor Equipment
- Transportation
- and many more.

Certified according to EN ISO 9001 in design/development, production, installation and servicing

Specifications:

VDE 0110
Table concerning clearance and creepage distances

VDE 0627
Connectors and plug devices

Standards:
DIN EN 175301-801, DIN EN 61 984

Approvals:
UL, CSA for inserts
Nema 4/12 and 4x for hoods and housings

Note:
Connectors should not be coupled and decoupled under electrical load. Connectors of the same or different series being mounted side by side may be protected against incorrect mating by the use of coding options.

General information:

It is the user's responsibility to check whether the components illustrated in this catalogue comply with different regulations from those stated in special fields of application which we are unable to foresee.

We reserve the right to modify designs in order to improve quality, keep pace with technological advancement or meet particular requirements in production.

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General

Apart from applications in the field of telecommunications, fibre optic technology is of great importance in the industrial market sector. In telecommunications there are requirements for:

- High transmission capacity
- Low cable attenuation
- No crosstalk

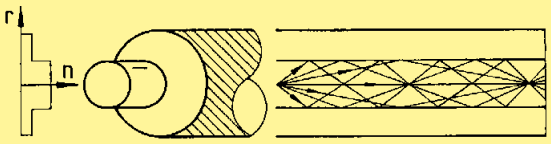
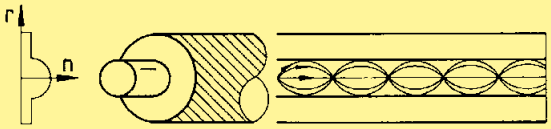
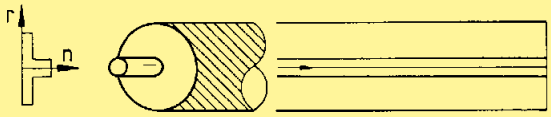
These features are also required in the industrial sector along with the following major considerations:

- Zero susceptibility to electromagnetic interference
- Electrical insulation between transmitter and receiver
- Small cable diameter

Fibre optic communication works by pulses of light. When feeding them in at one end of the fibre optic cable, the pulses are passed to the other end by total internal reflection.

Total internal reflection occurs at the boundary layer between core and cladding by virtue of the different values of optical refractive index (n) between the two materials (n cladding less than n core).

There are three different types of optical fibres:

		Typical Dimensions Core/Cladding Ø	Attenuation
Step index (SI) fibre HCS® [1] / POF[2]		200 / 230 µm	5 dB/km ... 8 dB/km 0.2 dB/km
Gradient index(GI) fibre		50 /125 µm	2.6 dB/km 3.2 dB/km
Single modem fibre		9 / 125 µm	< 0.3 dB/km

optical refractive index profile

The single-mode fibre is mainly used in telecommunications because of its low attenuation and wide bandwidth.

The gradient index fibre and the step fibre with their large core diameters are chiefly used as communication cables in industrial applications due to their easy handling and relatively low costs. The link length ranges from several meters to several kilometers.

Mounting of connectors for gradient fibres is achieved by the use of adhesive.

For POF[2] or HCS® [1] fibres, the crimping technique eases the connector attachment.

With the advanced HARTING quick assembly components, POF-cables can be mounted without the need of special tools. HARTING F.O. systems are designed for gradient index fibres with a core diameter of 50 and 62.5 µm as well as for 200 µm (HCS® [1]) and 1 mm (POF[2]) step index fibres.

The typical operating wavelengths are 660 nm (POF[2], HCS® [1]), 850 nm (GI, HCS® [1]) and 1300 nm (GI).

[1] HCS® (=Hard Clad Silica) is registered trade mark of SpecTran Corporation
[2] POF = Polymer Optical Fibre

Dimensioning of F.O. Transmission Systems

For reliable operation of a F.O. data transmission system it is essential that the transmitted optical signals arrive at the receiver with sufficient amplitude. The incident power should at least exceed twice (+ 3 dB) the value of the minimum sensitivity of the receiver. Otherwise, the inherent noise of the system may result in increasing randomly distributed transmission errors in the data transfer. Therefore, in system design the power budget of the optical path has to be checked. The following aspects have to be considered:

- Optical power output of the transmitter
  The optical power generated by the LED does mainly depend on the applied forward current.Typical power levels coupled into the core are:

  for glass-fibre (λ = 850 nm):
  50/ 125 µm GI fibre: 80 µW
  200/ 230 µm SI fibre: 250 µW
  for Polymer fibre (λ = 660 nm):
  980/1000 µm: 600 µW

- Specific attenuation-coefficient of the fibre
  The specific attenuation of optical fibres depends on the wavelength applied and is specified in dB/km.
  Typical values are:

  for glass-fibres (λ = 850 nm):
  50/ 125 µm GI fibre: ---3 dB/km
  200/ 230 µm HCS: ---5 dB/km
  for polymer fibre (λ = 660 nm):
  980/1000 µm (PMMA): ---0.2 dB/m
  The fibre loss usually contributes to the highest amount to the overall transmission index of the optical link.

- Additional interconnections in the cable system
  Interconnections in the optical link create some further attenuation for the travelling optical signals.
  Typical insertion loss is
  - for a spliced connection ≤0.3 dB
  - for a connector-set 0.8 dB ... 0.5 dB

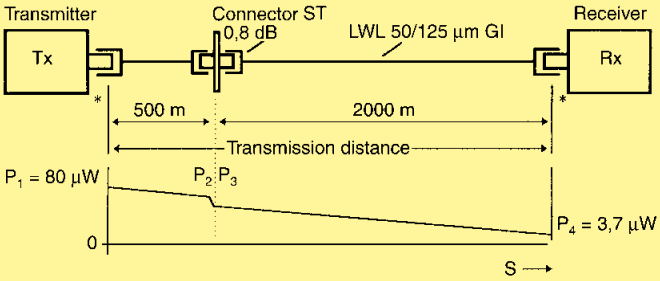
  depending on the type of fibre and the connectors applied.

- Sensitivity of the optical receiver DC-coupled optical receivers, commonly used, with SI-diodes as receiving elements show typical minimum sensitivities of
  ≤ 3 µW at 850 nm (glass fibre systems)
  ≤ 5 µW at 660 nm (polymer fibre systems)

- Temperature dependence and ageing of LED, thermal influence on cable loss
  These items should be taken into account with an amount of 2 dB. Thus, in total a system reserve of 5 dB has to be considered in the link power budget.

Examples

a) Glass fibre system (λ = 850 nm)



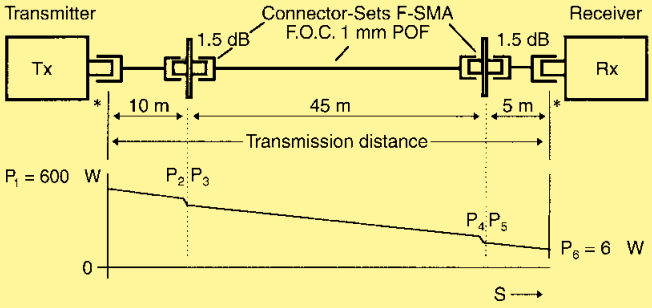
Link budget analysis:
Transmitter:
P1 = 80 µW = -11 dBm
power coupled into fibre core

Cable Loss: 2.5 km x 3 dB/km	= 7.5 dB
Loss per connector set ST	= 0.8 dB
System reserves (3 dB + 2 dB)	= 5.0 dB
Total system losses:	**13.3 dB**

Incident power at receiver: P4 = - 24.3 dBm = 3.7 µW
This satisfies the required minimum-conditions ≥ 3 µW

* The injection- and decoupling-loss at the transmitter- and receiver-ends of the fibre has not additionally to be taken into account as they are alraedy included in the given power ratings of these elements.

b) Polymer fibre system (λ = 660 nm)

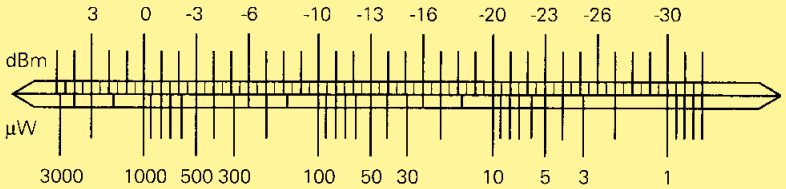


Link budget analysis:
Transmitter:
P1 = 600 µW = -2.2 dBm
power coupled into fibre core

Cable loss: 60 m x 0,2 dB/m	= 12 dB
2 connector-sets F-SMA (2 x 1.5 dB)	= 3.0 dB
System reserves (3 dB + 2 dB)	= 5.0 dB
Total system losses:	**20.0 dB**

Incident power at receiver:
P6 = - 22.2 dBm = 6.0 µW
This satisfies the required minimum-conditions ≥ 5 µW
Omitting the additional interconnections in the cable (here e.g. the 2 F-SMA connector sets) results in larger maximum transmission distances.

Conversion Diagram



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Features

- The technical specifications for the SERCOS Interface[1)] are fulfilled by the LED 660 nm and the receiver 5 MBit/s.

Technical characteristics

Standards	DIN EN 60 664-1 DIN EN 61 984
Approvals	

General and limiting values at T = 25 °C

Transmitter (LED 850 nm): OPF 370 A

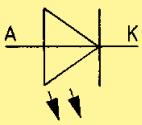
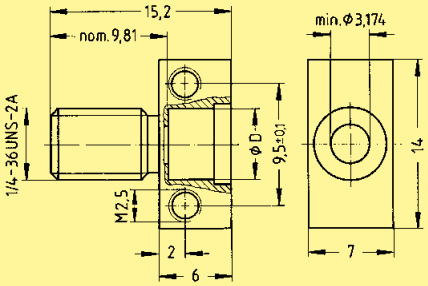
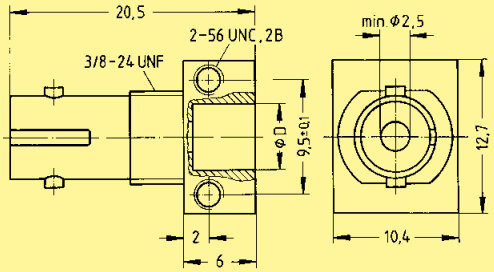
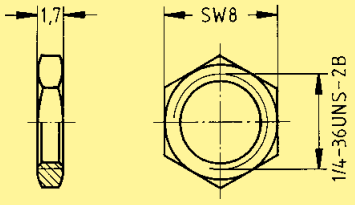
Analog band-width	BWE	80 MHz (I_F = 100 mA DC)
Optical wave-length	λ	830 mm ... 870 nm
Spektral band-width	Δλ	35 nm
Drive current	I_{Fmax}	100 mA
Forward voltage	U_V	1.8 V ... 2.0 V typ.
Derating at 25 °C	I_F	0.8 mA/°C
Reverse voltage	U_{Rmax}	4 V
Storage temperature		-55 °C ... +115 °C
Operating temperature		-40 °C ... +100 °C
Power coupled into fibre (at IF = max.)		
in 50/125 GI	P_S	15 µW ... 25 µW typ.
in 200/230 SI	P_S	650 µW max.

Transmitter (LED 650 nm): SFH 757

Analog band-width	BWE	7 MHz (I_F = 30 mA DC)
Optical wave-length	λ	650 nm
Spektral band-width	Δλ	25 nm
Drive current	I_{Fmax}	50 mA
Forward voltage	U_V	2.1 V typ.
Derating at 25 °C	I_F	0.93 mA/°C
Reverse voltage	U_{Rmax}	4 V
Storage temperature		-40 °C ... +100 °C
Operating temperature		-40 °C ... +80 °C
Power coupled into fibre (at I_F = 10 mA)		
in 980/1000 POF	P_S	150 µW typ.

1) **SERCOS** = **SE**riell **R**ealtime **CO**mmunication **S**ystem

for fibre optic transmission

Identification	Part Number	Drawing	Dimensions in mm
F.O. transmitter for PBC mounting receptacle (metall)			
LED 850 nm OPF 370 A in F-SMA housing in F-ST housing	 20 50 000 1111 20 50 000 1121		F-SMA
LED 650 nm SFH 757 in F-SMA housing in F-ST housing	 20 40 000 1112 20 40 000 1122		F-ST
F-SMA			
fixing nut	20 80 000 1072		

Features

- The technical specifications for the SERCOS Interface[1)] are fulfilled by the LED 660 nm and the receiver 5 MBit/s.

Technical characteristics

Standards	DIN EN 60 664-1 DIN EN 61 984
Approvals	

General and limiting values at T = 25 °C

Receiver (LED 850 nm): OPF 520

Receiver type		0 Mbit/s... 5 Mbit/s (DC coupled)
Supply voltage	V_{CC}	4.5 V ... 5.5 V DC
Supply current	I_{CC}	10 mA max.
Opt. power input		4 µW ... 100 µW (at 850 nm)
Operating temperature		-40 °C ... +85 °C

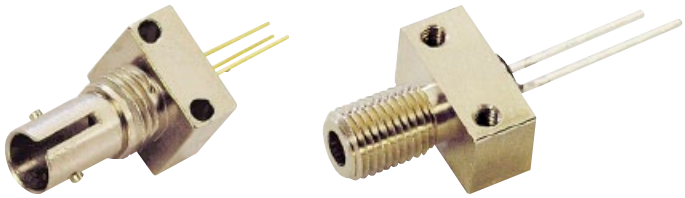
Receiver (digital): SFH 551

Wave-length	600 nm ... 780 nm
Data rate	5 Mbit/s
Sensitivity	-22 dBm typ.
Optical input power	typ. 6 µW ... 1000 µW (at λ = 650 nm)
Electrical output	TTL, open collector
Operating voltage	5 V DC ±5 %
Operating temperature	-40 °C ... +85 °C

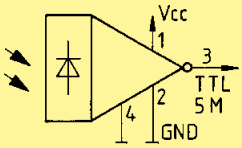
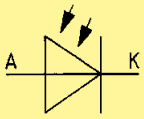
Receiver (photo diode): BPX 65

Wave-length	350 nm ... 1100 nm
Switching times	typ. 12 ns
Photo current	typ. 4 µA (t λ = 650 nm; input power 10 µW; reverse voltage 5 V)
Dark current	1 nA typ. (bei V_R = 20 V)
Capacity	11 pF typ.
Operating temperature	-40 °C ... +85 °C

[1)] **SERCOS** = **SE**riell **R**ealtime **CO**mmunication **S**ystem



for fibre optic transmission

Identification	Part Number	Drawing	Dimensions in mm
F.O. Receiver for PBC mounting receptacle (metall)			
TTL 5 Mbit/s OPF 520 in F-SMA housing in F-ST housing	 20 50 000 2112 20 50 000 2222		The mounted, integrated receivers are suitable for applications in combination with glass fibre as well as polymer fibre. Dimensions of housing see page for F.O. transmitter.
TTL 5 Mbit/s SFH 551 in F-SMA housing in F-ST housing	 20 50 000 2116 20 50 000 2226		
Si-PIN photo diode BPX 65 in F-SMA housing in F-ST housing	 20 50 000 2119 20 50 000 2229		

Features

- Electro-optical converters integrated into D-Sub connector shell housings
- Cost-effective solution for fibre optic duplex links
- Transmission distance up to 60 m
- Standard accessories for D-S ub can be applied
- Suitable for 1 mm Ø polymer optical fibres (λ = 660 nm)
- Special housing for heavy duty applications is available

Technical characteristics

Standards	DIN EN 60 664-1 DIN EN 61 984
Approvals	

General and limiting values at T = 25 °C

Transmitter (LED): SFH 757

Drive current (max.)	I_{Fmax}	max. 70 mA
Optical power		
at 20 mA		300 µW
at 50 mA		600 µW
Wave-length		660 nm
Storage temperature		-35 °C ... +100 °C
Operating temperature		-30 °C ... +85 °C

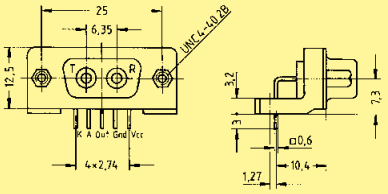
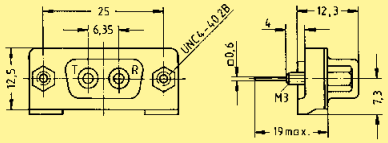
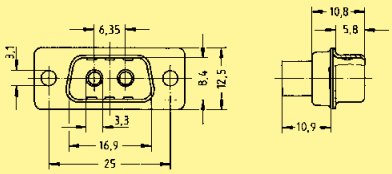
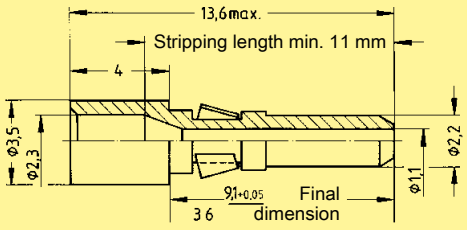
Receiver (digital): SFH 551

Wave-length	600 nm ... 780 nm
Data rate	5 Mbit/s
Sensitivity	-22 dBm typ.
Optical input power	typ. 6 µW ... 1000 µW (at λ = 650 nm)
Electrical output	TTL, open collector
Operating voltage	5 V DC ±5 %
Operating temperature	-40 °C ... +85 °C

Receiver (photo diode): SFH 250

Wave-length	400 nm ... 1100 nm
Switching times	10 ns
Photo current	3 µA (at λ = 650 nm; input power 10 µW; reverse voltage 5 V) 4 µA (at λ = 950 nm; input power 10 µW; reverse voltage 5 V)
Dark current	1 nA typ. (at V_R = 20 V)
Capacity	11 pF typ.
Operating temperature	-40 °C ... +85 °C

in duplex style for short range transmission
with optical fibres (λ = 660 nm)

Identification	Part Number	Drawing	Dimensions in mm
F.O. D-Sub T/E female connector			
angled 1x SFH 757 / 1x SFH 551	20 66 009 3811		
2x pin diode (SFH 250)	20 66 009 3813		
straight 1x SFH 757 / 1x SFH 551	20 66 009 3812		
Outer dimensions like 9-pin D-Sub female			
F.O. D-Sub male connector	20 67 009 3811		Cavities are designed for HARTING POF[1] ferrules
Outer dimensions like 9-pin D-Sub male			
Ferrule			
for 1 mm POF[1] with cladding gauge 2.2 mm	20 10 001 3232		The mounting/endface-preparation of the ferrule can be achieved by crimping, hot-plate technique or by using adhesive
			The ferrules are snap-mounted into the male connector and can be released with aid of removal tool 09 99 000 0052 (see catalogue “Industrial Connectors Han®”)

[1] POF = Polymer Optical Fibre

Features

- Electro-optic converters integrated in multi-mode connectors
- Up to 16 optical lines via one connection
- Cost-effictive alternative to conventional connectors
- Suitable for 1 mm Ø polymer fibres (λ = 660nm)
- Transmission distance up to 60 m

Technical characteristics

Standards	DIN EN 60 664-1 DIN EN 61 984
Approvals	

General and limiting values at T = 25 °C

Transmitter (LED): SFH 757

Wave-length	650 nm
Switching times	100 ns
Übertragungsrate	max. 100 Mbit/s
Output power (I = 10 mA)	
typ.	150 µW
min.	100 µW
Drive current	max. 50 mA
Forward voltage	2.1 V DC
Operating temperature	-40 °C ... +80 °C

Receiver (digital): SFH 551

Wave-length	600 nm ... 780 nm
Data rate	5 Mbit/s
Sensitivity	-22 dBm typ.
Optical input power	typ. 6 µW ... 1000 µW (at λ = 650 nm)
Electrical output	TTL, open collector
Operating voltage	5 V DC ±5 %
Operating temperature	-40 °C ... +85 °C

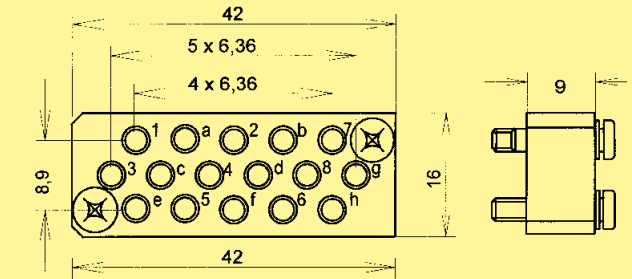
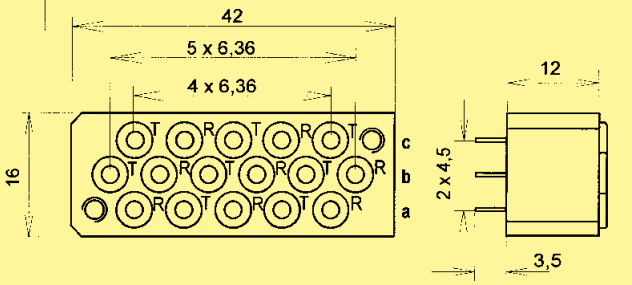
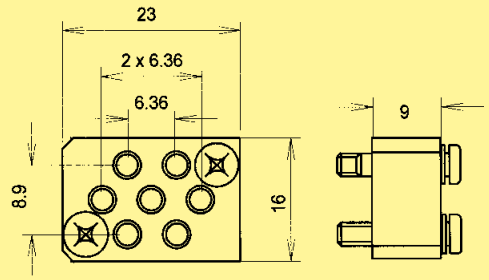
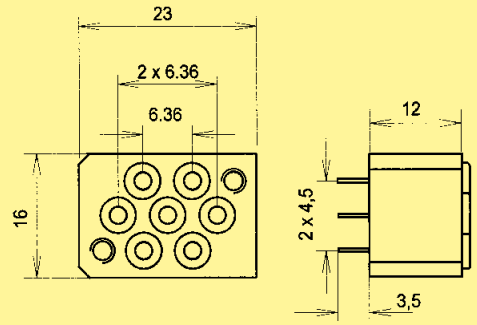
Receiver (photo diode): SFH 250

Wave-length	400 nm ... 1100 nm
Switching times	10 ns
Photo current	3 µA (at λ = 650 nm; input power 10 µW; reverse voltage 5 V)
Dark current	1 nA typ. (at V_R = 20 V)
Capacity	11 pF typ.
Operating temperature	-40 °C ... +85 °C

Receiver (photo diode): BPX 65

Wave-length	350 nm ... 1100 nm
Switching times	typ. 12 ns
Photo current	typ. 4 µA (t λ = 650 nm; input power 10 µW; reverse voltage 5 V)
Dark current	1 nA typ. (bei V_R = 20 V)
Capacity	11 pF typ.
Operating temperature	-40 °C ... +85 °C

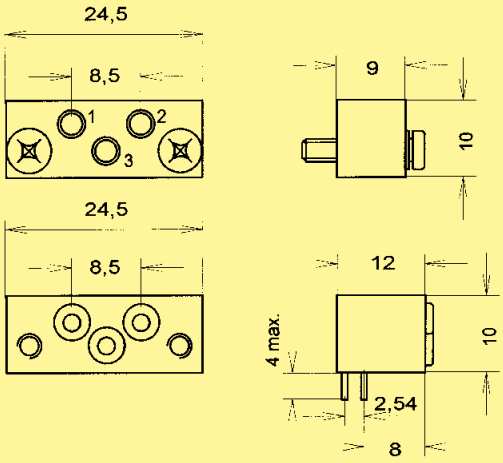
For short range data transmission with
polymer optical fibres (λ = 660 nm)
Multipole versions
for SFH 756, SFH 551 and SFH 250

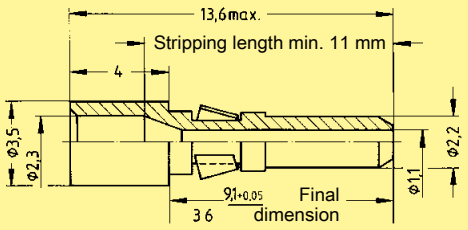
Identification	Part Number	Drawing	Dimensions in mm
Mounting device 16 cables for 1 mm POF[1] fibres with HARTING POF ferrules	20 10 016 3211		
Mounting device 16 diodes solder straight with 8x SFH 757 and 8x SFH 551	20 40 016 3823		
Mounting device 7 cables for 1 mm POF[1] fibres with HARTING POF ferrules	20 10 007 3211		
Mounting device 7 diodes abgewinkelt with 3x SFH 757 and 3x SFH 250	20 40 007 3821		
with 7x SFH 757	20 40 007 3841		

[1] POF = Polymer Optical Fibre

For short range data transmission with
polymer optical fibres (λ = 660 nm)
Multipole versions
for SFH 757, SFH 551 and SFH 250

Identification	Part Number	Drawing	Dimensions in mm
Mounting device 3 cables			
for 1 mm POF[1)] fibres with HARTING POF ferrules	20 10 003 3211		
Mounting device 3 diodes			
angled			
with 1x SFH 757 with 2x SFH 551	20 40 003 3821		
with 2x SFH 757 with 1x SFH 551	20 40 003 3822		
Ferrule			
1 mm POF[1)] with cladding gauge 2.2 mm	20 10 001 3232		





The mounting/endface-preparation of the ferrule can be achieved by crimping, hot-plate technique or by using adhesive

The ferrules are snap-mounted into the male connector and can be released with aid of removal tool 09 99 000 0052 (see catalogue “Industrial Connectors Han®”)

[1)] POF = Polymer Optical Fibre

Stock items in bold type

For short range data transmission with
polymer optical fibres (λ = 660 nm)
Multipole versions
for SFH 757 and SFH 551

Identification	Part Number	Drawing	Dimensions in mm
Mounting device 3 cables			
for 1 mm POF[1)]	20 10 003 4811		
Mounting device 3 diodes			
angled			
with 2x SFH 757 with 1x SFH 551	20 40 003 4813		
with 1x SFH 757 with 2x SFH 551	20 40 003 4823		

1) POF = Polymer Optical Fibre

CONTENTS PAGE

Features

The standard hoods and housings can be equipped with a mix of FO contacts as well as contacts for other electrical applications

- FO contacts for 1 mm POF
- Suitable for industrial connectors Han for the series Han D®, Han DD®, Han E®, Han® EE, Han® K and Han-Modular®
- Mixed inserts using FO contacts and electrical contacts possible
- Combination of optical signals and electrical supply in one connector is possible
- Degree of protection IP 65, IP 67 or IP 68 in the locked position depending on the hoods and housings used

Attention

Please make sure the correct contacts are used only in combination with the inserts given with the series mentioned above.

For more technical information and Part-Numbers concerning the inserts please refer to the catalogue “Industrial Connectors Han®“.

Technical characteristics

Standards	DIN EN 60 664-1 DIN EN 61 984

Inserts

see catalogue „Industrial Connectors Han®“

Han D®	chapter 02
Han DD®	chapter 02
Han DD® module	chapter 06
Han® DDD module	chapter 06
Han E®	chapter 03
Han® EE	chapter 03
Han® K 8/24	chapter 05
Han® K 6/36	chapter 05
Han® K 12/2	chapter 05
Han® 4 A SC	chapter 19
Han® SC module	chapter 06
Han® Multi module	chapter 06

[1)] POF = Polymer Optical Fibre

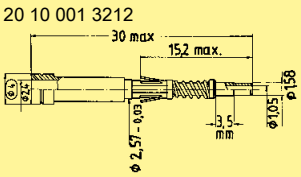
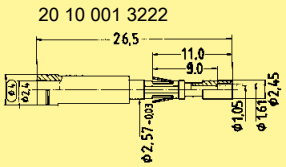
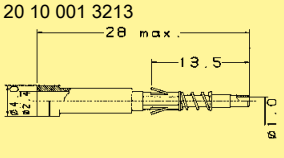
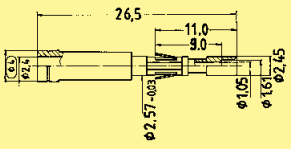
F.O. inserts for multi-pole connectors of serie Han D®

Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Han® Inserts				
for Han® 7 D ... Han® 128 D				
Han® 7 D	09 21 007 3031	09 21 007 3131		
Han® 8 D	09 36 008 3001	09 36 008 3101		
Han® 40 D	09 21 040 3001	09 21 040 3101		
Han® 64 D	09 21 064 3001	09 21 064 3101		
Han® 80 D	09 21 040 3001	09 21 040 3101		
	09 21 040 3001	09 21 040 3101		
Han® 128 D	09 21 064 3001	09 21 064 3101		
	09 21 064 3001	09 21 064 3101		

Identification	Size	max. number of F.O. contacts
Han® 7 D	Han® 3 A	7
Han® 8 D	Han® 3 A	8
Han® 40 D	Han® 16 B	40
Han® 64 D	Han® 24 B	64
Han® 80 D	Han® 32 B	80 (2x 40)
Han® 128 D	Han® 48 B	128 (2x 64)

for Han® 15 D ... Han® 50 D				
Han® 15 D	09 21 015 3001	09 21 015 3101		
Han® 25 D	09 21 025 3001	09 21 025 3101		
Han® 50 D	09 21 025 3001	09 21 025 3101		
	09 21 025 3001	09 21 025 3101		

Identification	Size	max. number of F.O. contacts
Han® 15 D	Han® 10 A	15
Han® 25 D	Han® 16 A	25
Han® 50 D	Han® 32 A	50 (2x 25)

Identification	Part number Male contact	Part number Female contact	Drawing	Dimensions in mm
F.O. contacts for Han D® contact cavity				
for 1 mm POF[1)] fibre				
for Han® 7 D ... Han® 128 D	20 10 001 3212	20 10 001 3222	20 10 001 3212 	20 10 001 3222 
for Han® 15 D ... Han® 50 D	20 10 001 3213	20 10 001 3222	20 10 001 3213 	20 10 001 3222 

[1)] POF = Polymer Optical Fibre