FTTH SOLUTIONS

Active and passive solutions Instruments Support Services

ABINET



THE ADVANTAGES OF OPTICAL FIBRE SOLUTIONS

The use of a system with **FTTH technology** has many advantages, for example to guarantee sustainable costs and to ensure that the system is ready for future technological developments, while ensuring equal opportunities to the users in terms of enjoying the digital content. These values represent a wide range of interesting advantages:

- One single network to distribute many new services.
- Reduction costs for maintenance activities and for technological implementation.
- Open and neutral platform to support every type of application.
- The simplification of the optical network means aesthetically more pleasing buildings.
- The technological structure improvement increases the building's value.

FRACARRO PROFESSIONAL SERVICES

Choosing a Fracarro hospitality solution means having access to cutting-edge technologies, **with a range of solutions** suitable for any type of installation. Fracarro also provides a series of important services to support installers.

DESIGN SUPPORT

Our technical engineers are available to design the system layout, complete with a materials list.

PHONE SUPPORT

Monday to Friday, from 8:30am to 5:30pm CEST, for any technical inquiries, product information, or remote system programming.

REMOTE COMMISSIONING AND TESTING

For system commissioning, testing and headend setup etc, Fracarro can provide skilled technicians, available for remote technical consulting.



PASSIVE COMPONENTS

TDT - Head Terminal Box

• Indoor or Outdoor applications

• IP66 rated protection

• Accessories included

The HEAD TERMINAL BOX (also referred to as TDT or STOM - Riser Optical Termination Box) serves the purpose of housing and terminating the optical fibres of building services originating from the roof, such as Terrestrial Digital signals like DVB-T2/T, DVB-S2 Satellite signals, or those from Wireless operators. It must accommodate the fibres from the Building Optical Cabinet and is suitable for both indoor and outdoor applications (IP66 rated).







TDT12

TDT48

TDT24

ITEM	CODE	DIMENSIONS mm	CAPACITY	MATERIAL
TDT8	287696	227x181x54,5	8 connectors	plastic
TDT12	287419	235x205x60	12 connectors	plastic
TDT24	287697	320x240x100	24 connectors	plastic
TDT48	287698	420x320x125	48 connectors	plastic



CSOE - Building Optical Main Cabinet and ROE - Building Optical Splitting Box

Installed in a suitable technical room, the CSOE (Centralized Optical Distribution Cabinet) is the central access point where all main building services (Digital Terrestrial TV, Satellite signals, ISP providers, etc.) converge. From here, optical fibres distribute services to individual apartments. Each ISP and Terrestrial/Satellite signal is routed through a dedicated ROE (Building Optical Splitting Box) before being distributed via the CSOE.

- Designed for splicing optical fibre cables or pre-terminated STOAs.
- Compatible with 19-inch rack installation (item 287418 CSOE 2U).
- Supports OPB24IR and OPB48IR optical splitter trays for rack setups.
- ROE units can use PLC optical splitters.



CSOE	2U
0001	

CSOE MINI P

ІТЕМ	CODE	DIMENSIONS mm	MATERIAL
CSOE 2U	287418	454x152x180	metal
CSOE_P	287567	450x180x150	plastics, with optical organiser included
CSOE_MINI_P	287566	332x155x105	plastics, with optical organiser included
OPB24IR	289404	240 x 482 x 88	metal optical drawer, up to 24x SC optical adapters included
OPB48IR	287757	240 x 482 x 88	metal optical drawer, up to 48x SC optical adapters included

Optical Splitters

The PLC splitters are based on planar waveguide technology, which ensures low insertion losses. Suitable for high performance optical distribution in many types of installations and are also available in miniaturised form.



PLC 1x8

ITEM	CODE	LENGTH m
PLC 1x2	287573	2
PLC 1x4	287455	4
PLC 1x8	287407	8
PLC 1x12	287574	12
PLC 1x16	287408	16
PLC 1x24	287575	24
PLC 1x32	287409	32
PLC 1x64	287410	64



PLC 1x2 MINI

ІТЕМ	CODE	LENGTH m
PLC 1x2 MINI	287576	2
PLC 1x4 MINI	287577	4
PLC 1x8 MINI	287578	8
PLC 1x12 MINI	287579	12
PLC 1x16 MINI	287580	16
PLC 1x24 MINI	287581	24
PLC 1x32 MINI	287582	32
PLC 1x64 MINI	287583	64



PLC 2x8 MINI

CODE	LENGTH m
287753	8
287754	16
287755	32
	287753 287754

* 2-inputs models

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PASSIVE COMPONENTS

QDSA - Apartment Signal Distribution Cabinet

Optical distribution wallboxes made of **plastic or metal**, available in various sizes, suitable for use as Apartment Signal Distribution Cabinet (QDSA), to which optical fibre cables from the Main Building Optical Cabinet (CSOE) are connected. **Inside the QDSA, the pre-terminated STOAs** and active and passive devices are organized.



DATA Service ONT equipped with optical fibre input

QDSA

ITEM	CODE	DIMENSIONS mm	CAPACITY	MATERIAL
QDSA	287472	610x455x136	Recessed pre-fitted 54 modules	plastic
QDSA36P	287758	430x410x80	Recessed 36 modules	plastic
QDSA54P	287759	618x430x80	Recessed 54 modules	plastic
QDSA-F	287565	577x407x100	Recessed 54 modules	metal
QDSA MINI F	287517	392x307x100	Recessed 36 modules	metal

QDSA Supports

ITEM	CODE	DESCRIPTION
SUPQDSAX6	270907	Perforated support for mounting products in the QDSA, replacing DIN rails. Screws included in the package.
SUPQDSA12KEYX2	270908	Perforated support for mounting products in the QDSA, replacing DIN rails, with 12 angled holes for Keystone sockets. Screws included in the package.
SUPSTAFFA	270909	Support bracket for QDSA. Can be fixed to the DIN rail or the perforated base SUPQDSAX6.

DIN Rail Supports

DIN rail supports for installing products within the Apartment Signal Distribution Panel (QDSA) or racks.

Available in various sizes, including modular options.

ITEM	CODE	DESCRIPTION
SUPDIN140	271201	14cm DIN Rail Support
SUPDIN265	271202	26.5cm DIN Rail modular support suitable for installation of different size products



STOA Apartment Optical Termination Box

It is the designated termination point of the FTTH multiservice system and should be installed in close proximity to the residential units, typically within the Apartment Signal Distribution Panel (QDSA). These plastic optical distribution boxes are equipped with 4x SC/APC adapters with shooters and are suitable for use as Apartment Optical Termination Boxes. They are available with pre-terminated G657 A2 3mm cables in various lengths.

- Fracarro STOAs are equipped with Cca, s1a, d0, a1 class cables according to the new CPR regulations.
- STOA 4 version with **SC/APC connectors on both ends**
- STOA 4 LITE version with SC/APC connectors only on the plastic box side
- Dimensions: 100 x 29 x 80 mm



STOA 4 various sizes







ITEM	CODE	LENGTH m
STOA 4 (only box)	287420	-
STOA 4C 10m	287738	10
STOA 4C 20m	287739	20
STOA 4C 30m	287740	30
STOA 4C 40m	287741	40
STOA 4C 50m	287742	50
STOA 4C 60m	287743	60
STOA 4C 70m	287744	70
STOA 4C 80m	287745	80
STOA 4C 90m	287746	90
STOA4C 100m	287727	100
STOA4C 10m LITE	287747	10
STOA4C 20m LITE	287748	20
STOA4C 30m LITE	287749	30
STOA4C 40m LITE	287750	40
STOA4C 50m LITE	287751	50
STOA4C 100m LITE	287752	100

Optical Attenuators

In-line optical fibre attenuators equipped with SC/APC connectors.



ITEM	CODE	DESCRIPTION
OPTATT14dB	287237	14dB optical attenuator (SC/APC connector)
OPTATT7dB	287238	7dB optical attenuator (SC/APC connector)
OPTATT3dB	287239	3dB optical attenuator (SC/APC connector)

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PASSIVE FIBRE COMPONENTS

Single-fibre patch cords and pigtails

Single-mode optical fibre patch cords with a semi-loose tube configuration, available in **single or duplex versions** (657 A1 type). Also available with a PULL traction system for additional support during installation.



					ESH LZSH Low Smoke Zere Halogen
	BR1/2-AA		BR2E-LU-LU-D		
CONNECTORS	-	LENGTH (M)	ITEM	CODE	PULL
SC/APC - SC/APC		1	PIG TAIL	287426	-
SC/APC - SC/APC		0,5	BR1/2-AA	287832	-
		1	BR1-AA	287522	-
		2	BR2-AA	289360	-
		4	BR4-AA	289362	-
		5	BR5-AA	287690	-
		10	BR10-AA-PS	287689	Yes
		20	BR20-AA-PS	287645	Yes
SC/APC - SC/UPC		1	BR1-PA	287828	-
		2	BR2-PA	289359	-
		4	BR4-PA	289361	-
		5	BR5-PA	287688	-
		10	BR10-PA-PS	287687	Yes
		20	BR20-PA-PS	287686	Yes
SC/APC - FC/APC		1	FC-SC/APC PATCH	280011	-
		2	BR2SCAPC-FCAPC	287427	-
SC/APC - FC/PC		2	BR2FC/PC-SC/AP	287521	-
SC/UPC - SC/UPC		1	BR1-PP	287691	_
SC/APC - LC/UPC		1	BR1E-SA-LU-D	287695	-
		2	BR2E-SA-LU-D	287694	-
LC/UPC - LC/UPC		1	BR1E-LU-LU-D	287693	-
		2	BR2E-LU-LU-D	287692	-

MULTIFIBRE CABLES

Single-mode multifibre cables for indoor use and **armored cables for** outdoor use. The loose tube structure provides enhanced protection against moisture and mechanical stress, while the 9/125 single-mode fibres ensure high performance and reduced signal loss.



OPC4IN_CCA

OPC24MULTI457



OPC8ARM457

INDOOR CABLES							
No. Fibres	Class	Item	Code	Diameter (mm)	Sheath	Length (m)	
4	CCA	OPC4IN_CCA	287736	3	Single	250	
8	CCA	OPC8IN457CCA	287795	3	Single	457	
4	B2CA	OPC4IN_DG_B2CA	287840	4	Double	250	
8	B2CA	OPC8IN_DG_B2CA	287841	4	Double	457	
24	B2CA	OPC24MULTI457	287819	8.5	Single	457	

OUTDOOR CABLES						
No. Fibres	Class	Item	Code	Diameter (mm)	Sheath	Length (m)
4	FCA	OPC4ARM457	287814	6	Single	457
8	FCA	OPC8ARM457	287815	6	Single	457

PRE-TERMINATED MULTIFIBRE CABLES

Pre-terminated 4-fibre cables with SC/APC connectors and a PULL traction system. They offer increased robustness in critical situations thanks to the dual sheath design of the cable.



No. Fibres	Class	ltem	Code	Diameter (mm)	Sheath	Length (m)	
4	B2CA	BR4B30-AA-PS	287846	4	Double	30	NEW
4	B2CA	BR4B40-AA-PS	287847	4	Double	40	NEW
4	B2CA	BR4B50-AA-PS	287848	4	Double	50	NEW
4	B2CA	BR4B70-AA-PS	287849	4	Double	70	NEW
4	B2CA	BR4B100-AA-PS	287850	4	Double	100	NEW







ACTIVE DEVICES

Digital Terrestrial and Full Satellite distribution

HOME FIBRE includes a series of optical transmitters and receivers designed to convert and distribute satellite polarities, digital terrestrial TV signals, and radio signals via FTTH fibre optic infrastructure. The HOME FIBRE transmitter series includes multiple models, each operating at different optical wavelengths, facilitating the distribution of up to four complete satellite positions over a single optical fibre using CWDM (Coarse Wavelength Division Multiplexing) technology.

HOME FIBRE transmitters advantages

- Installation of "traditional" satellite dish with quattro LNB
- Transmitter equipped with AGC, allowing the use of dishes with various diameters
- Cascade solution typical of MSW systems Up to 21dB optical path attenuation
- Easy and intuitive installation
- Transmission of the complete terrestrial band



ІТЕМ	CODE	DESCRIPTION
OPT-TX RP	270652	Optical transmitter equipped with 5 separate independent inputs (VL, VH, HL, HH and TV). Output power 7dBm @ 1310nm. Remote powered with F connector. Recommended power supply PSU1430F/UK (code 287647) or PSU1430F (code 287614)
OPT-TX DT	270694	Optical transmitter equipped with 5 separate independent inputs (VL, VH, HL, HH and TV). Output power 7dBm @ 1310nm.
KIT OPT-TX RP	270651	KIT composed by OPT-TX RP remote powered optical transmitter and PSU1430F (287614) power supply.
OPT-TX 1510	270667	Optical transmitter equipped with 5 separate independent inputs (VL, VH, HL, HH and TV). Output power 7dBm @ 1510nm.
OPT-TX 1530	270668	Optical transmitter equipped with 5 separate independent inputs (VL, VH, HL, HH and TV). Output power 7dBm @ 1530nm.
OPT-TX 1550	270669	Optical transmitter equipped with 5 separate independent inputs (VL, VH, HL, HH and TV). Output power 7dBm @ 1550nm.
OPT-TX 1570	270670	Optical transmitter equipped with 5 separate independent inputs (VL, VH, HL, HH and TV). Output power 7dBm @ 1570nm.

HOME FIBRE receivers key points

- Compact size for easy installation
- Multicolour LED for receiver diagnostics
- Ideal for managing TV/SAT signals in fibre optic systems
- Compatible with dCSS, SCR and dSCR/SKY UK systems



ITEM	CODE	DESCRIPTION
OPT-RX 4 MICRO	270662	Optical receiver equipped with 5 independent outputs for VL, VH, HL, HH and TV. Extended optical receiving range (-8dBmo to -14dBmo). Multifunction LEDs and very low current consumption.
OPT-RX QD MICRO	270661	Optical receiver equipped with four universal and independent outputs (mixed SAT+TV+FM). Extended optical receiving range (-8dBmo to -14dBmo). Multifunction LEDs and very low current consumption. Auxiliary input connector for external power supply.
OPT-RX SCD2 MICRO	270660	Optical receiver equipped with four outputs, two with dCSS and mixed TV+FM signal and two with SAT Legacy and mixed TV+FM. Extended optical receiving range (-8dBmo to -14dBmo). Multifunction LEDs and very low current consumption. SCR/dCSS protocol compliance.
OPT-RX dSCR UK	270658	Optical receiver equipped with four outputs, two with dSCR UK and mixed TV+FM signal and two with SAT Legacy and mixed TV+FM. Extended optical receiving range (-8dBmo to -14dBmo). Multifunction LEDs and very low current consumption. dSCR/SKY UK protocol compliance .



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ACTIVE DEVICES

Digital Terrestrial and Full Satellite distribution

WIDE FIBRE is our latest range of optical transmitters and receivers, exclusively designed and manufactured by Fracarro, capable of managing satellite and terrestrial signals, utilising **WIDEBAND technology**. The number of coaxial cables connecting the satellite signals to the input of the optical transmitter is halved and enables distribution over large optical networks, without compromising the quality of the signals available from all optical receivers. Our range now includes solutions to distribute one or two full satellite positions plus terrestrial signals at the same time.

WIDEBAND optical transmitters advantages

- Dual DC in connector for redundant power supply: **continuity of service**
- AGC on all coaxial inputs: **maximum operating stability**
- Dedicated lasers for each H, V and TV: **maximum** signal quality
- Status LEDs for each input: **quick visual diagnostics**

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WIDEBAND optical receivers key points

- Extremely **compact**
- Integrated AGC: maximum stability of the RF output signal
- Multi-standard receiver (**dSCR/SKY Q/Legacy**): maximum flexibility
- Status LEDs for each output: quick visual diagnostics
- Extended optical budget (-5dBm to -16dBm): enables up to 1 x 64 optical split
- Dedicated optical wavelength for each SAT polarity and TV band: **maximum RF signal quality**



ITEM	CODE	DESCRIPTION
OPT-TX WB1	270901	Wideband optical transmitter for 1 satellite + TV
OPT-RX WB1 SCD2	270902	Wideband optical receiver for 1 satellite. 2 x SCR/dCSS/dSCR/Legacy + TV outputs
OPT-RX WB1 HV	270903	Wideband optical receiver for 1 satellite. Vertical, Horizontal wideband outputs + independent TV
OPT-TX WB2	270904	Wideband optical transmitter for 2 satellites + TV
OPT-RX WB2 SCD2	270906	Wideband optical receiver for 2 satellites. 2 x SCR/dCSS/dSCR/Legacy + TV outputs
OPT-RX WB2 HV	270905	Wideband optical receiver for 2 satellites. Vertical, Horizontal wideband outputs for each SAT + independent TV

Digital Terrestrial and IF-IF Satellite distribution

The **OPT MBJ Series optical transmitters and receivers** are able to mix bands 3, UHF and SAT (IF-IF) and distribute them over fibre optic cable through the infrastructure, **in small and medium sized installations**. Equipped with A.B.L.A technology in the transmitters and **Automatic Gain Control** (AGC) in the receivers this ensures maximum signal quality.

OPT MBJ key points

- "Plug & Play": no adjustments required
- **A.B.L.A technology**: in transmitters, the optical signal output level remains constant if the input TV and SAT RF levels are between 60dBuV and 85dBuV;
- The **OPT RX** optical receiver is equipped **with Automatic Gain Control** (AGC), maintaining a constant RF output level if the received optical signal is within its working range.
- Non-propagating or flame-retardant ABS plastic protective shell (Class V0)
- Very low power consumption;
- A.B.L.A circuit operation LEDs for immediate diagnosis of input RF levels in the transmitters;
- Diagnostic LEDs for correct optical signal and presence of RF level in the OPT RX receiver
- Wall mounting or DIN rail mounting.







ITEM	CODE	DESCRIPTION
OPT 3US TX	270657	Plug&Play optical transmitter equipped with 3 separate independent inputs: VHF, UHF and SAT (IF-IF). SC/APC optical output and RF Test output. Optical power 5dBm@1550nm. Up to 1 x 32 optical splits when used with OPT-RX receiver. Remote power enable on UHF input.
OPT T+S TX PLUS	270656	Plug&Play optical transmitter equipped with 1 TV/SAT (IF-IF) mixed input. SC/APC optical output and RF Test output. Very high optical power output 9dBm@1550nm. Up to 1 x 64 optical splits when used with OPT-RX receiver. Remote power enable on TV+SAT input.
OPT RX	270655	Plug&Play optical receiver equipped with SC/APC optical input (from 0dBm to -14dBm extended optical input range). Automatic Gain Control for TV/SAT RF output level stabilization. It can be also used as alternative of OPT RX TV (270696). Diagnostic LED for the optical and RF signals .

ACTIVE DEVICES

Digital Terrestrial distribution

Fracarro's OPT-PDM series miniaturised passive receivers revolutionises FTTH (Fibre To The Home) systems. Ideal for single dwelling or small installations, their miniature size enables them to be installed directly behind the TV set.

Key points

- Extremely small: 55 x 18 x 38mm
- Passive: no power supply required
- Fullband: distribution of TV and SAT signals (IF-IF)
- **Electrostatic protection**: electrically isolated from the distribution network.

Fibre optic advantages

- Allows for technological evolution
- LTE free: immune to 5G interferences
- F.O. vs coax plant longevity



OPT-PDM-MINI



OPT-PDM-SCA

ITEM	CODE	OPTICAL CONNECTOR	WAVELENGTH nm	OUTPUT RF MHz	DIMENSIONS nm	PACKAGE pcs
OPT-PDM-MINI	270654	1 MINI	1270-1610	88-2350	55x18x38	4
OPT-PDM-SCA	270653	1 SC/APC	1270-1610	88-2350	55x18x38	4



K OPT-PDM-MINI code 270700

The kit contains:

- 1 x optical transmitter OPT 3US TX (270657)
- 1 x miniaturised VOV4 splitter (287211)
- 5 x MINI 10m optical patch cords (287221)
- 1 x MINI-SC/APC PR ADAPT adaptor (287226)
- 4 x OPT-PDM-MINI miniaturised passive optical receivers (270654)

VIDEO INTERCOM OVER FTTH

GPON solution for video intercom

Thanks to the capabilities of GPON active devices, Fracarro has developed an innovative solution to integrate video intercom systems into FTTH fibre optic networks, providing significant advantages in terms of system simplification and cost reduction. The solution allows for the connection of **up to 128 devices** (video intercoms and external units) and enables the management of additional services:

- Up to 30 cameras for CCTV video surveillance
- Access control for common areas
- Monitoring of special systems: photovoltaic systems, air conditioning and heating systems, emergency lights, home automation, Building Management Systems and so on.



ITEM	CODE	DESCRIPTION
OLTG-1P2G1S	287787	OLT line optical transmitter for data management on 9/125 single-mode optical fibre
GPON RX BASIC	287616	ONT network optical receiver for data reception via optical fibre. Includes PoE Injector
CSOE_P	287567	IP54 degrees protection Building Main Optical Cabinet for FTTH fibre optic networks.
PLC 1x32 MINI	287582	Miniaturized 32-way PLC splitter for building optical splitting box, utilizing planar waveguide technology that ensures very low insertion loss.
BR2-PA	289359	2-meter single-mode optical fibre patch cord with SC/APC to SC/PC connectors
BR2-AA	289360	2-meter single-mode optical fibre patch cord with SC/APC connectors



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SCHEMATIC DIAGRAM



PROFESSIONAL FIBER FUSION SPLICER

FST-V6S Professional Fusion Splicer

The **FST-V6S splicer** (code 287008) significantly reduces splicing and heating times. Its 6-motor core alignment and advanced contour inspection technology ensure precise splicing and accurate loss estimation.

All menus are accessible via a **5" LCD touchscreen**, and the fully automated splicing process optimises installation time.



Features

- Automated splicing process with a chipset to minimise optical fusion loss
- High-precision electrodes with "Digital Analysis Core
 Alignment System" for arc fusion control
- 6-motor active core alignment
- 5" high-resolution touchscreen display
- Supports a wide range of optical fibres: SM, MM, DS, NZDS
- User-friendly graphical interface
- Optical zoom: fibre magnification up to 500x

Included Accessories

- Battery
- Cutter
- Cable stripper
- 3-hole fibre stripper
- Power adapter
- Spare pair of electrodes
- User manual
- Hard case
- Power supply





INSTRUMENTS

Optical Meters

Fracarro's equipment also includes a **range of multimeters** for the correct installation of fibre optic systems.





OPTmet+RJ45test

OPT METER

ITEM	CODE	DESCRIPTION
OPTmet+RJ45test	287568	Portable multifunction optical power meter with Visual Fault Locator and electrical continuity testing functionality for RJ-45 cables.
OPT METER	287537	Optical multimeter for various wavelengths, with an integrated source for verifying multiservice systems and fibre optic distributions.

Certified test equipment

The Fracarro measurement instruments portfolio is complemented by a range of **certified optical test equipment**, consisting of a source and a meter with AWD functionality, which automatically recognizes the optical wavelength used between the two devices.





CERT-OPT-METER

CERT-OPT-SOURCE

ITEM	CODE	DESCRIPTION
CERT-OPT-SOURCE	287589	Certified optical source suitable for verifying and certifying FTTH multiservice installations and various fibre optic distributions. It's equipped with two outputs with two light sources on each port, managing a total of four wavelengths in a single device.
CERT-OPT-METER	287590	Power meter suitable for verifying and certifying FTTH multiservice installations and various fibre optic distributions. Selectable wavelengths (850-1300-1310-1490-1550-1625nm). Measures absolute or relative optical power.

ACCESSORIES

Optical Fibre Cleaning Tools

The kit allows cleaning of $9/125\mu m$ single-mode fibres and SC/APC, SC/PC, and LC connectors.

The kit includes:

- Pre-moistened wipes
- Dry wipes
- Cleaning spray (isopropyl alcohol)
- Connector cleaning sticks
- Torch

ITEM	CODE	DESCRIPTION
CLEANING KIT	287536	Optical cleaning kit



Fracarro, always by your side.

With **over 20 years of experience in fibre optics**, Fracarro is the ideal partner for the design, deployment, and management of GPON solutions. Our specialist technicians support professionals at every stage of the installation process, offering a comprehensive range of services.







Fracarro Radioindustrie SRL

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