

VI : Optical Cable Closures 056



Overview

The optical cable closure (hereafter referred to as "closure") is intended to accommodate the optical fiber fusion splice section and its excess fiber safely and efficiently at the optical cable trunk joint point or branching joint point and lastly protect the exposed optical fiber against water and external force.

Features

The closure is characterized by the following items.

- ① The outer circumference of the closure is made of lightweight and very strong plastics.
- ② The closure is generally called "mechanical closure" and assembled by a mechanical method using bolts and others. This allow changes to be made to the optical fiber and branch cables used.
- ③ The full water-proof closure is applicable to underground and aerial uses.

Lineup

- **Slim type** (installable in the aerial, man hole, etc.)

FSCO-12B series (for both underground and aerial use)	
FSCO-12B2	(Medium-capacity 2-cable x 2-branch closure)
FSCO-12B3	(Medium-capacity 3 cable x 2-branch closure)
FSCO-12BW4	(Large-capacity 4 cable x 2-branch closure)

- **Space saving type** (installable in the hand hole)

FSCO-CB series (for both underground and aerial use)	
FSCO-CB	(Small-capacity 2-cable x 2-branch closure)
FSCO-CB3	(Medium-capacity 3-cable x 2-branch closure)
FSCO-1200HS	(Large-capacity 3-cable x 2-branch closure)

- **High water-pressure resisting type** (Pressurised is possible.)

FMCO series (for both underground and aerial use)	
FMCO-MS	(Medium-capacity 1-cable x 2 line closure)
FMCO-MB	(Medium-capacity 2-cable x 2-branch closure)
FMCO-L	(Medium-capacity 3-cable x 2-branch closure)

- **Buckle tightening type** (easy tightening for underground use)

FSCO series (for both underground and aerial use)	
FSCO-L66	(Medium-capacity 3-cable x 2-branch closure)

Products are subjected to change in specifications and other contents without previous notice.

- **Butt type** (installable in a small underground or aerial space)

For both underground and aerial use	
FSCO-HHS	(Small-capacity 8-branch closure)
FSCO-B76	(Medium-capacity 6-branch closure)

- **Aerial use dedicated type** (Easy sleeve tightening without re-entry materials)

FSCO-RAB3	(Medium-capacity 3-cable x 2-branch closure)
FSCO-AO	(Medium-capacity 3-cable x 2-branch closure or drop cable pull-down closure)
FBCO-B3	(Small-capacity 3-cable x 2-branch closure)

- **Type compatible with mid span joint**

For both underground and aerial use	
FSCO-CB/OA	(Small-capacity mid span closure)
FSCO-CB3/OA	(Small-capacity mid span closure)
FSCO-12B/OA	(Medium-capacity mid span closure)
FSCO-12BW4/OA	(Large-capacity mid span closure)
FSCO-1200HS/OA	(Large-capacity mid span closure)

*Mid span joint

When the closure is installed, the fibers are accommodated in the closure without cutting. When a branch occurs, joint work is performed. Any joint work other than this branch is not required, thereby greatly reducing the joint loss, installation time, and cost.

057 Selection Standard for Optical Cable Closures

Closure Selection Table

	Model	Installation cavity			Number of cable entries	Number of cores accommodated and jointed (C)					Applicable cable dia.(mm) *The number in parentheses denotes an applicable branch cable diameter.
		H.H. (Note1)	Aerial	Under-ground		ø0.25 mm single fiber	ø0.9mm single fiber	2-fiber ribbon	4-fiber ribbon	8-fiber ribbon	
Slim	FSCO-12B2	-	O	O	2 cablesX2	78	78	208	260	-	ø8-32
	FSCO-12B3	-	O	O	3cablesX2						ø8-28 (ø8-16)
	FSCO-12BW4	-	O	O	4cablesX2	180	180	480	600	1000	ø8-32
Space saving	FSCO-CB	O	O	O	2cablesX2	72	36	96	120	-	ø8-21
	FSCO-CB3	O	O	O	3cablesX2	96	48	128	160	-	
	FSCO-1200HS	O	O	O	3cablesX2	180 (Note 2)	180 (Note 2)	240	600	1200	ø13-31
High water pressure resistant	FSCO-MS	-	O	O	1cableX2	-	60	96	120	-	ø11-25
	FSCO-MB	-	O	O	2cablesX2	-	60	96	120	-	
	FSCO-L	-	O	O	3cablesX2	-	100	160	200	-	
Buckle tightening	FSCO-L66	-	O	O	3cablesX2	192	96	256	320	640	ø8-27 (ø8-21)
Butt	FSCO-HHS	O	O	O	8cables	96	48	128	160	-	ø8-24 (ø8-19.5)
	FSCO-B76	O	O	O	6cables	144	72	96	240	480	ø21-27 (ø8-21)
For aerial use	FSCO-RAB3	X	O	X	3cablesX2	78	78	208	260	-	ø9-30
	FSCO-AO	X	O	X	3cablesX2	50	50	100	200	-	ø8-26
					2cables+24cables	24 (Note 4)	24 (Note 4)	24 (Note 1)	24 (Note 1)	-	
FBCO-B3	X	O	X	3cablesX2	30	30	80	100	-	ø9-21 (ø8-14)	

Note 1: HH denotes the hand hole.

Note 2: The applicable splice protector should be a 40 mm long type.

Note 3: In the number of cores accommodated, the upper step is for the TFSC type and the lower step is for the SFSC type.

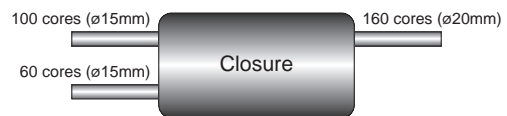
Note 4: In the case of the tray for drop, joint is performed on the center line of ø0.25 mm of the drop cable.

Requirements for placing an order

- Select a proper closure in the lineup on the left page and in the above selection table.
- When placing an order, check the following points beforehand:
Cable diameter
Cable type: space type, loose tube type, etc.
Fiber type: ø0.25 mm single fiber, 2-fiber ribbon, etc.

Legend:

One 160-core cable (4-fiber ribbon) is branched into 2 cables, namely, 100-core cable and 60-core cable.



Joint form 1 x 2 one-side 2 branches
Place of use: Underground (man hole)
Number of cores accommodated 160 cores

Closure selection table

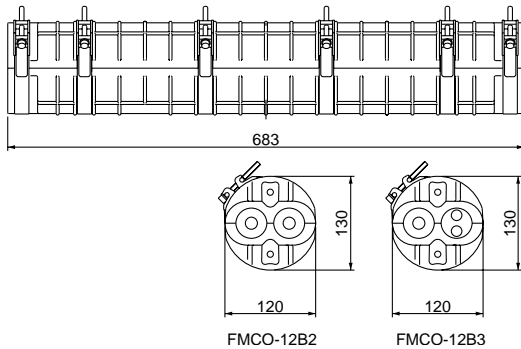
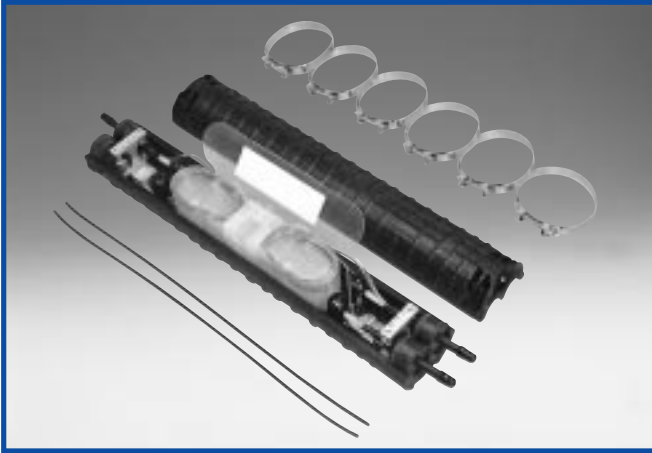
Select FSCO-12B2.

The requirements for placing an order are as follows:

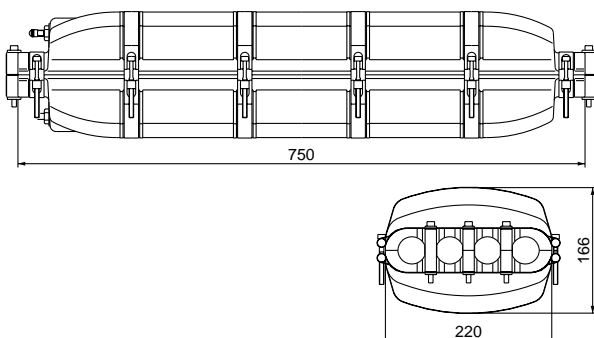
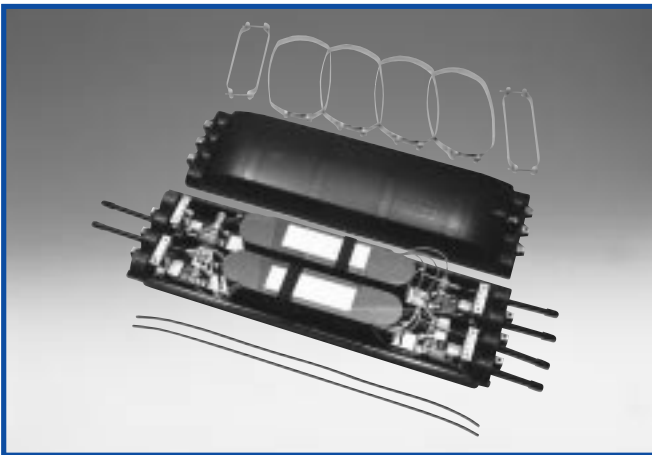
- Model: FSCO-12B2
- Cable diameter: ①ø20mm, ②ø15mm, ③ø15mm
- Fiber type: 4-fiber ribbon
- Cable type: Spacer type

Underground and aerial (slim type)

FSCO-12B2, 12B3



FSCO-12BW4



Features

- Using an opening/closing type slack tray attains higher density and permits increasing the number of cores accommodated and reducing the dimensions.
- The cable lead-in section adopts an end rubber packing fit for the external cable diameter, hence shorten the work time.
- The FSCO-12B2 is provided with 2 cables on one side of the cable lead-in section.
- The FSCO-12B3 is provided with 3 cables on one side of the cable lead-in section.
- The FSCO-12BW4 is provided with 4 cables on one side of the cable lead-in section.

FSCO-12B end rubber packing selection table 1

External cable dia. (mm)	End rubber packing
	(One-hole) size
8<D≤9	T9
9<D≤11	T11
11<D≤14	T14
14<D≤16	T16
16<D≤18	T18
18<D≤21	T21
21<D≤23	T23
23<D≤25	T25
25<D≤28	T28
28<D≤30	T30
30<D≤32	T32
End cap	T0

FSCO-12B3 branch end rubber packing selection table 2

External cable dia. (mm)		End rubber packing (2-hole) size
Upper-side hole	Lower-side hole	
8<D≤11	8<D≤11	T11-11
11<D≤16	8<D≤11	T16-11
11<D≤16	11<D≤16	T16-16
8<D≤11	End cap	T11-[11]
11<D≤16	End cap	T16-[11]
End cap	8<D≤11	T[16]-11
11<D≤16	End cap	T16-[16]
End cap		T0

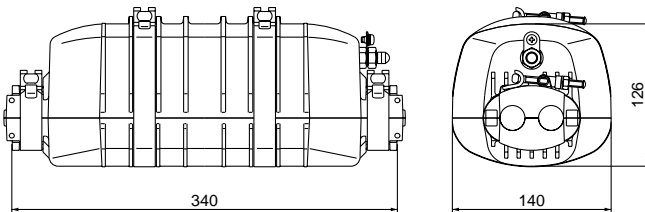
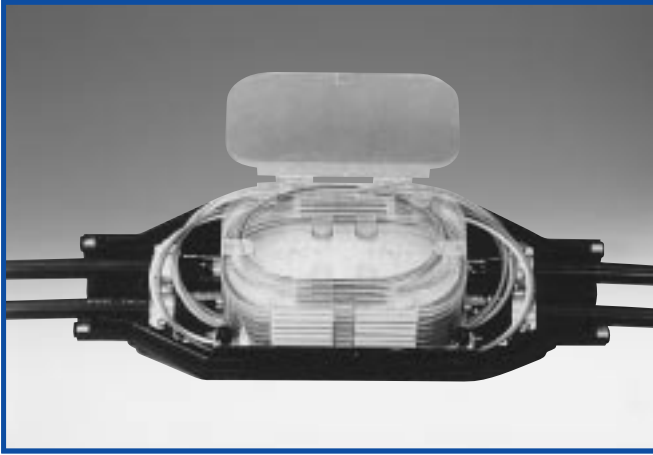
Specifications

Product name	FSCO-12B2	FSCO-12B3	FSCO-12BW4
Number of slack trays	13 trays max.		30 trays max.
Number of cores accommodated	∅0.25mm single-fiber	78 cores	180 cores
	∅0.9mm single-fiber	78 cores	180 cores
	2 fiber ribbon	208 cores	480 cores
	4 fiber ribbon	260 cores	600 cores
	8 fiber ribbon	-	
Number of cable entries	4 cables (2 cables x 2)	6 cables (3 cables x 2)	8 cables (4 cables x 2)
Applicable external cable dia. (mm)	∅8-32	∅8-28 (Main 2 cables) ∅8-16 (Branch 4 cables)	∅8-32
Nominal dimensions (mm)	120W X 130H X 683L		220W X 166H X 750L
Weight (kg)	Approx. 8		Approx. 12

Note: This type is provided with 25 8-fiber ribbon slack trays to accommodate 1000 cores.

Underground and aerial (space saving type)

FSCO-CB



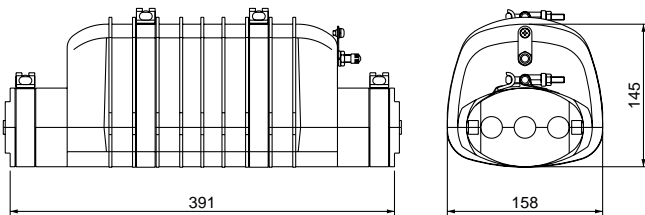
Features

- Adopting the upper/lower asymmetrical sleeve attains a very small, lightweight, and high-density type.
- Easily applicable to a small hand hole.
- Small number of parts that shortens the assembly time.
- The cable lead-in section is provided with 2 cables on one side.

Specifications

Product name		FSCO-CB
Number of slack trays		6 trays max.
Number of cores accommodated	ø0.25mm single-fiber	72 cores
	ø0.9mm single-fiber	36 cores
	2-fiber ribbon	96 cores
	4-fiber ribbon	120 cores
Number of cable entries		4 cables (2 cables x 2)
Applicable external cable dia. (mm)		ø8–21
Nominal dimensions (mm)		140WX126HX340L
Weight (kg)		Approx. 3

FSCO-CB3



Features

- Adopting the upper/lower asymmetrical sleeve attains a very small, lightweight, and high-density type.
- Easily applicable to a small hand hole.
- Small number of parts that shortens the assembly time.
- The cable lead-in section is provided with 3 cables on one side.

Specifications

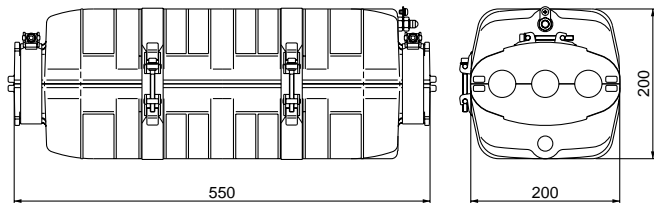
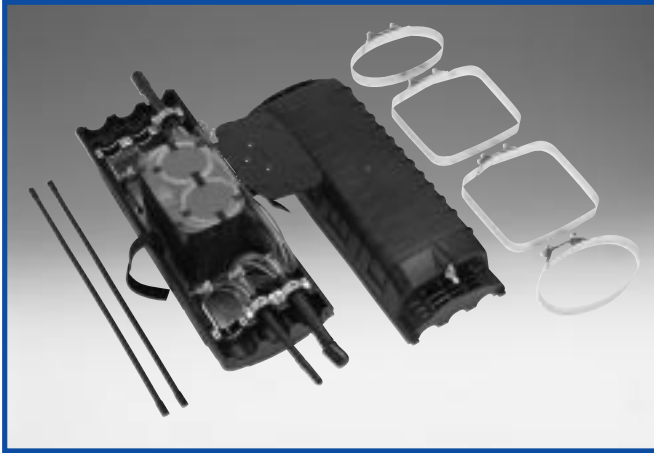
Product name		FSCO-CB3
Number of slack trays		8 trays max
Number of cores accommodated	ø0.25mm single-fiber	96 cores
	ø0.9mm single-fiber	48 cores
	2-fiber ribbon	128 cores
	4-fiber ribbon	160 cores
Number of cable entries		6 cables (3 cables x 2)
Applicable external cable dia. (mm)		ø8–21
Nominal dimensions (mm)		158WX145HX391L
Weight (kg)		Approx. 3

FSCO-CB/CB-3 cable clamp and sealing washer selection table

External cable dia. (mm)	Cable clamping washer size
$8 \leq D \leq 11$	S
$11 < D \leq 16$	M
$16 < D \leq 21$	L
End cap	E

Underground and aerial (space saving type)

FSCO-1200HS



Features

- Short and high-density type that is easily applicable to a small hand hole
- Can joint and accommodate up to 1200 cores.
- Adopting a 3-cable integrated end rubber packing can shorten the assembly and re-entry work time.
- The cable lead-in section is provided with 3 cables on one side.

Specifications

Product name		FSCO-1200HS
Number of slack trays		15 trays max.
Number of cores accommodated	ø0.25mm single-fiber	180 cores (Note)
	ø0.9mm single-fiber	180 cores (Note)
	2-fiber ribbon	240 cores
	4-fiber ribbon	600 cores
	8-fiber ribbon	1200 cores
Number of cable entries		6 cables (3 cables x 2)
Applicable external cable dia. (mm)		ø13-31
Nominal dimensions (mm)		200WX200HX550L
Weight (kg)		Approx. 8

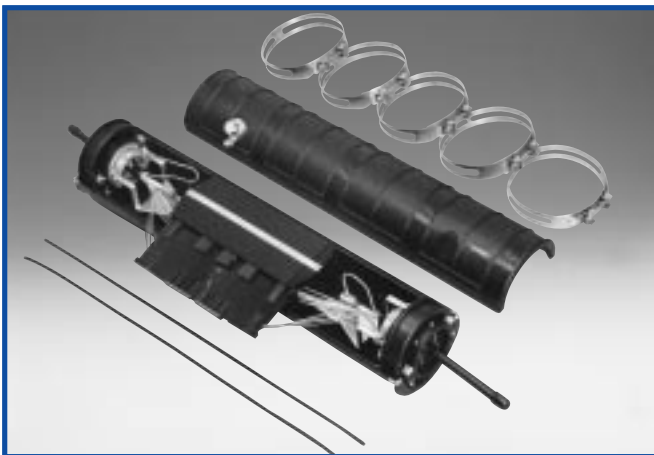
Note: The splice protector should be a 40 mm long type.

Underground and aerial (high water pressure resistant)

FMCO-MS

FMCO-MB

FMCO-L



Features

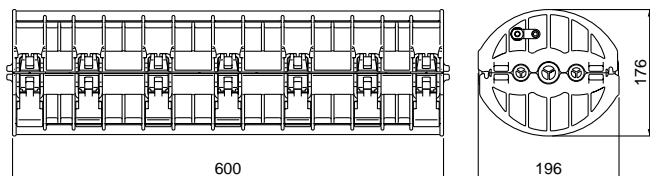
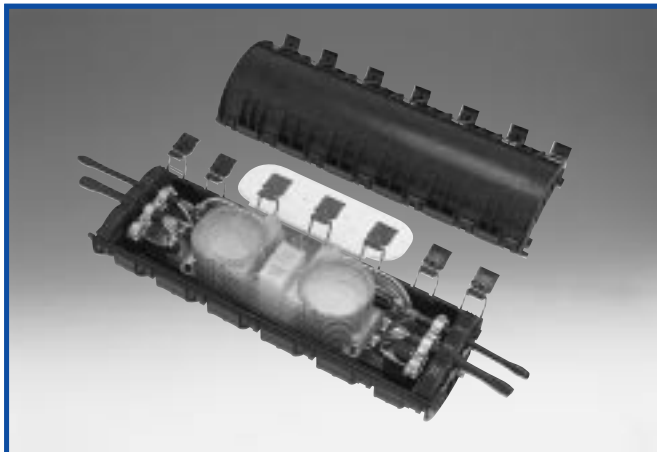
- High water pressure resistant
- Applicable to a line requiring pressurised
- The cable lead-in section uses an air-tight tape compatible with a wide range of external cable diameters.
- Applicable to both aerial and underground use.

Specifications

Product name		FMCO-MS	FMCO-MB	FMCO-L
Number of slack trays		6 trays max.	6 trays max.	10 trays max.
Number of cores accommodated	ø0.25mm single-fiber	—	—	—
	ø0.9mm single-fiber	60 cores	60 cores	100 cores
	2-fiber ribbon	96 cores	96 cores	160 cores
	4-fiber ribbon	120 cores	120 cores	200 cores
Number of cable entries		2 cables (1 cables x 2)	24 cables (2 cables x 2)	6 cables (3 cables x 2)
Applicable external cable dia. (mm)		ø11-25	ø11-25	ø11-25
Nominal dimensions (mm)		152WX148HX685L	152WX148HX685L	212WX208HX685L
Weight (kg)		Approx. 7	Approx. 7	Approx. 14

Underground and aerial (buckle tightening type)

FSCO-L66



Features

- Buckle type closure
- Applicable to hand hole, manhole, and aerial uses.
- Using an end entry rubber packing facilitates work and re-entry.
- Applicable to single-fiber to 12-fiber ribbon
- The cable lead-in section is provided with 3 cables on one side.
- Applicable to any loose tube cable. (24 cores/tray and 192 cores/closure)

Specifications

Product name		FSCO-L66
Number of slack trays		8 trays max.
Number of cores accommodated	∅0.25mm single-fiber	192 cores
	∅0.9mm single-fiber	96 cores
	2-fiber ribbon	256 cores
	4-fiber ribbon	320 cores
	8-fiber ribbon	640 cores
Number of cable entries		6 cables (3 cables x 2)
Applicable external cable dia. (mm)		∅8–27 (main cable: 2 cables) ∅8–21 (branch cable: 4 cables)
Nominal dimensions (mm)		192WX176HX600L
Weight (kg)		Approx. 6

Underground and aerial (butt type)

FSCO-HHS



Features

- The cable lead-in section is a butt type on one side and applicable to narrow hand holes. (It can be installed in a manhole, tube way, aerial use, etc.)
- The closure tightening structure adopts a hinge and buckle type. This facilitates easy assembly and dis assembly.
- The cable lead-in section permits up to 8-cable branching.
- The branch cable lead-in port can be easily made in the field.
- The cable lead-in section uses specific rubber for sealing. This facilitates assembly.

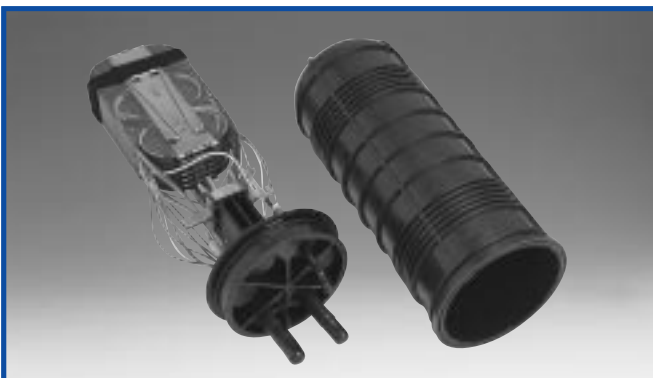
Specifications

Product name		FSCO-HHS
Number of slack trays		8 trays max.
Number of cores accommodated	ø0.25mm single-fiber	96 cores
	ø0.9mm single-fiber	48 cores
	2-fiber ribbon	128 cores
	4-fiber ribbon	160 cores
Number of cable entries		8 cables
Applicable external cable dia. (mm)		ø8–24 (main cable: 2 cables) ø8–19 (branch cable: 6 cables)
Nominal dimensions (mm)		320HX280WX210D
Weight (kg)		Approx. 2

Passed cores accommodating type

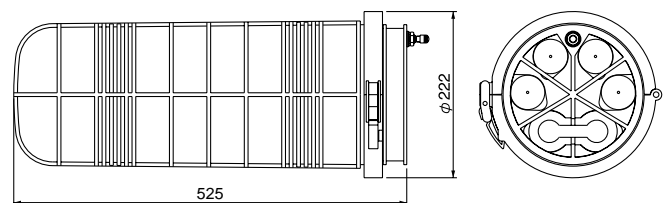
Number of passed cores accommodated		200 cores
Number of slack trays		8 trays max.
Number of slack trays	4-fiber ribbon	160 cores
Weight (kg)		Approx. 2

FSCO-B76



Features

- The cable lead-in section is a butt type on one side and applicable to narrow hand holes. (It can be installed in a manhole, tube way, aerial use, etc.)
- The closure tightening structure adopts a hinge and buckle type. This facilitates easy assembly and dis assembly.
- The cable lead-in section is provided with a branch section of up to 4 cables. Blocking is not required, if it is unused.
- Up to 12-fiber ribbon can be accommodated.
- The cable lead-in section uses specific rubber for sealing. This facilitates assembly.
- The structure that does not expose any metal section on the closure surface. This product is applicable to an environment that is corrosive to metal.



Specifications

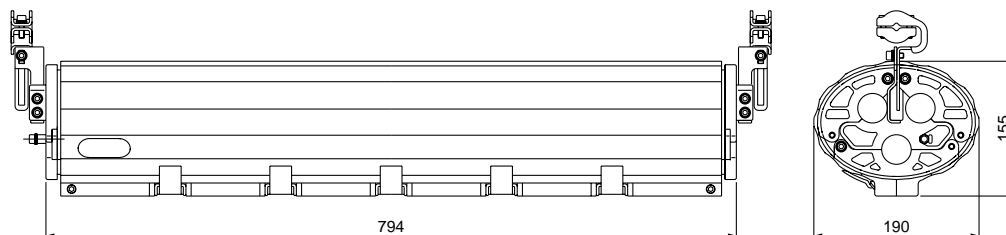
Product name		FSCO-B76
Number of slack trays		8 trays max.
Number of cores accommodated	ø0.25mm single-fiber	144 cores
	ø0.9mm single-fiber	72 cores
	2-fiber ribbon	96 cores
	4-fiber ribbon	240 cores
	8-fiber ribbon	480 cores
Number of cable entries		6 cables (4-cable branch)
Applicable external cable dia. (mm)		ø21–27 (main cable: 2 cables) ø8–21 (branch cable: 4 cables)
Nominal dimensions (mm)		ø222X525L
Weight (kg)		Approx. 5

Passed cores accommodating type

Number of passed cores accommodated		400 cores
Number of slack trays		3 trays max.
Number of slack trays	4-fiber ribbon	180 cores
	8-fiber ribbon	240 cores
Weight (kg)		Approx. 5

Aerial dedicated type

FSCO-RAB3



Features

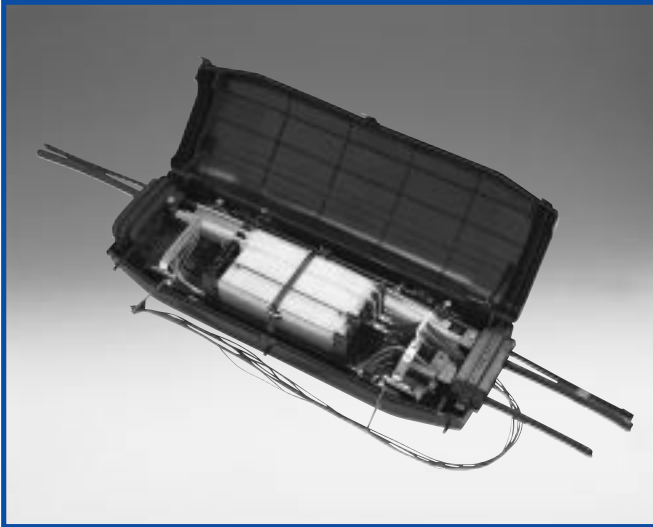
- Using a gel type material for the grommet in the cable lead-in section permits one-touch installation, enabling re-use of the material.
- For cables, slot clamping and sheath clamping are performed. This can simplify the tension member lead-out work as compared with the conventional tension member clamping and sheath clamping.
- The end plate can be mounted and dismantled for each cable.
- In the hanging status, the closure can be opened and closed and internal work can be done.
- The cable lead-in section is provided with 3 cables on one side.

Specifications

Product name		FSCO-RAB3
Number of slack trays		13 trays max.
Number of cores accommodated	ø0.25mm single-fiber	78 cores
	ø0.9mm single-fiber	78 cores
	2-fiber ribbon	208 cores
	4-fiber ribbon	260 cores
Number of cable entries		6 cables (3 cables x 2)
Applicable external cable dia. (mm)		ø9–30
Nominal dimensions (mm)		190WX155HX794L
Weight (kg)		Approx. 7

Aerial dedicated type

FSCO-AO



Features

- This enables truck joint, branch joint, and drop cable joint.
- Mid span can be performed without cutting the SZ cable slot.
- The cable lead-in section is provided with 3 cables on one side.
- For a drop cable, multi-cable pull-down can be performed.
- No additional component is required.

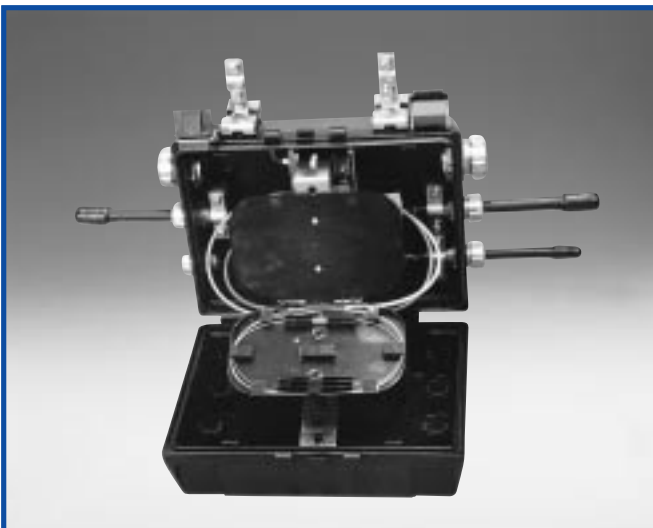
Specifications

Product name		FSCO-AO	
Number of slack trays		Tray	Tray for drop
		10 trays max.	6 trays max.
Number of cores accommodated	ø0.25mm single-fiber	50 cores	24 cores
	ø0.9mm single-fiber	50 cores	24 cores
	2-fiber ribbon	100 cores	24 cores (Note 1)
	4-fiber ribbon	200 cores	24 cores (Note 1)
Number of cable entries (Note 2)		Main cable: 2 cables, branch cable: 4 cables Or drop cable: 24 cables	
Applicable external cable dia. (mm)		ø8-ø26	
Nominal dimensions (mm)		150WX200HX620L	
Weight (kg)		Approx. 4	

Note 1: For the drop tray, each ribbon fiber is divided and single-fiber fusion is performed.

Note 2: Eight drop cables require a space for one branch cable.

FBCO-B3



Features

- Aerial dedicated BOX type small closure for an optical cable of 100 cores or less.
- The cable lead-in section adopts a cable joint that requires no tape winding, and the closure opening/closing structure adopts a buckle.
- In the hanging status, the closure can be opened and closed and the internal work can be done.
- The cable lead-in section is provided with 3 cables on one side.

Specifications

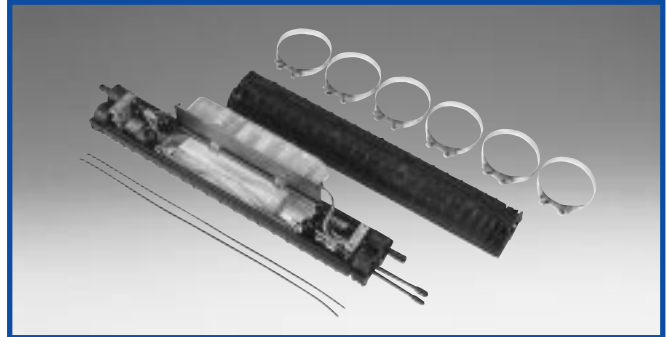
Product name		FBCO-B3
Number of slack trays		5 trays max.
Number of cores accommodated	ø0.25mm single-fiber	30 cores
	ø0.9mm single-fiber	30 cores
	2-fiber ribbon	80 cores
	4-fiber ribbon	100 cores
Number of cable entries		6 cables (3 cables x 2)
Applicable external cable dia. (mm)	Cable connector size L	ø9-21
	Cable connector size S	ø8-14
Nominal dimensions (mm)		120WX200HX270L
Weight (kg)		Approx. 4

Mid span compatible type

FSC0-CB/OA



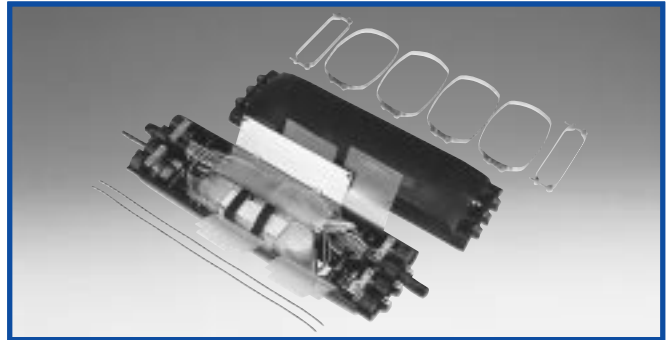
FSC0-12B/OA



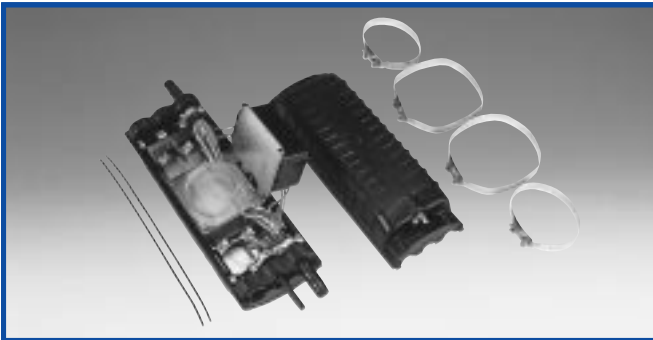
FSC0-CB3/OA



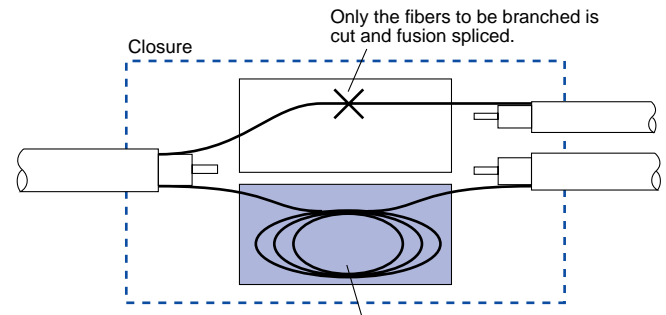
FSC0-12BW4/OA



FSC0-1200HS/OA



Outline drawing of mid span closure



Features

- A connection box for mid span that can accommodate optical cables without cutting and can be installed in a manhole, ducts, aerial use, etc.
- Joint work is not required at closure installation but is performed when a branch occurs. This can greatly reduce the installation time and the cost.
- Even if the optical cable is in use, it can be installed and accommodated in the closure later.

Specifications

Product name	FSC0-CB/OA	FSC0-CB3/OA	FSC0-12B/OA	FSC0-12BW4/OA	FSC0-1200HS/OA
capacity	100 cores	200 cores	200 cores	1000 cores	1000 cores
Number of slack trays	3 trays	2 trays	9 trays	10 trays	7 trays
Number of cores accommodated	4-fiber ribbon	60 cores	80 cores	180 cores	200 cores
	8-fiber ribbon	—	—	—	400 cores
Number of cable entries	4 cables (2 cables x 2)	6 cables (3 cables x 2)	6 cables (3 cables x 2)	8 cables (4 cables x 2)	6 cables (3 cables x 2)
Applicable external cable dia. (mm)	ø8–21	ø8–21	ø8–28 ø8–16	ø8–32	ø13–31
Nominal dimensions (mm)	140WX126HX340L	145WX158HX405L	120WX130HX683L	220WX166HX750L	220WX200HX550L
Weight (kg)	Approx. 3	Approx. 4	Approx. 6	Approx. 12	Approx. 8

Mid span can be performed using the FSC0-HHS, FSC0-B76, and aerial-dedicated FSC0-AO.