

Price Index


Series E4-21

Special Options Available


Low noise version available
with special rubber pads



Cleanroom test upon request



ESD classification:
Electrically conductive ESD/
ATEX version upon request

Assembly Tips


Opening e-chains®: Remove crossbars
and clips - Insert screwdriver into the slot,
push down, release by lever action

Other Installation Methods

Vertical, hanging ≤ 131 ft (40 m)

Vertical, standing ≤ 9.84 ft (3 m)

Side-mounted, un_supp. ≤ 3.28 ft (1 m)

Rotary requires further calculation

Usage Guidelines

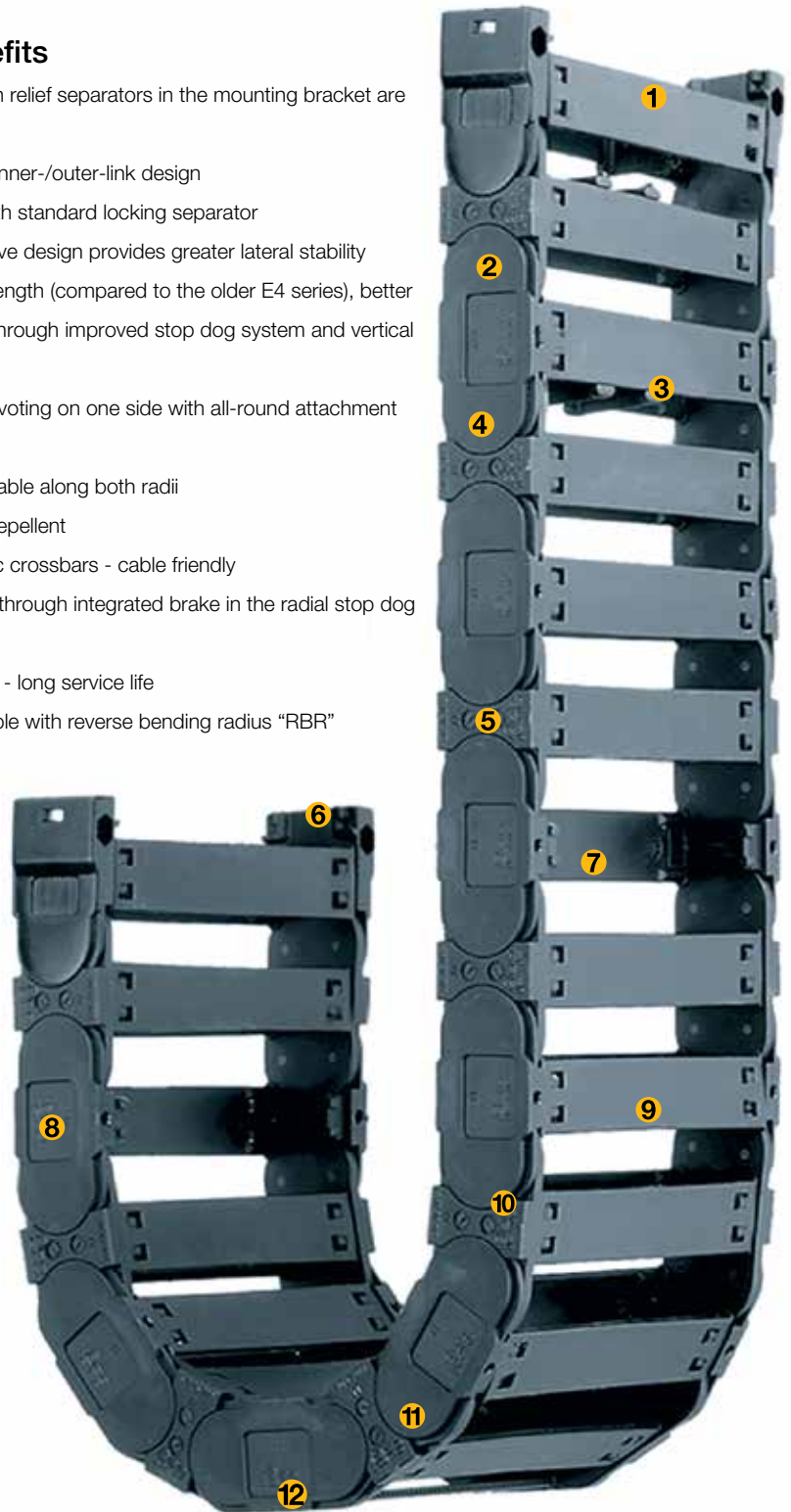

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights



- When an economic one-sided snap-open e-chain/tube is required
➤ **Series 1400/1500**
- When a one-sided snap-open e-tube is required at a low price
➤ **Series 1450/1480**

Features & Benefits

- 1 Strain relief with strain relief separators in the mounting bracket are available
- 2 Straight run through inner-/outer-link design
- 3 Interior separation with standard locking separator
- 4 The tongue and groove design provides greater lateral stability
- 5 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
- 6 Mounting brackets pivoting on one side with all-round attachment option
- 7 Crossbars are removable along both radii
- 8 Smooth outline, dirt repellent
- 9 Wide, rounded plastic crossbars - cable friendly
- 10 Low-noise operation through integrated brake in the radial stop dog system
- 11 Optimized glide pads - long service life
- 12 e-chains® also available with reverse bending radius "RBR"


Order Example: Complete e-chain®

Please indicate chain length or number of links. Example:

6.56 ft (2 m) **E4-21-120-100-0**

e-chain®

With 2 separators **T2112** assembled every 2nd link

Interior Separation

1 Set **E4-210-120-12**

Mounting Bracket

e-chain system® E4-1

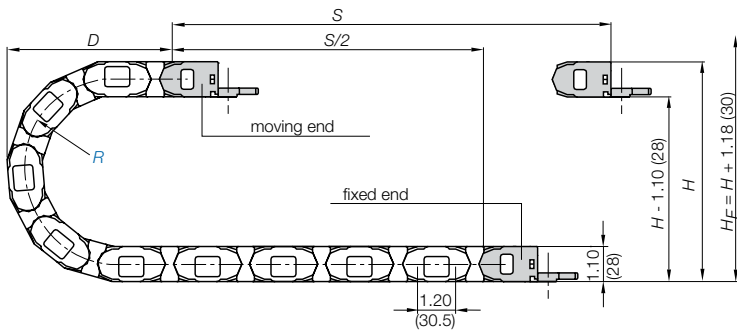
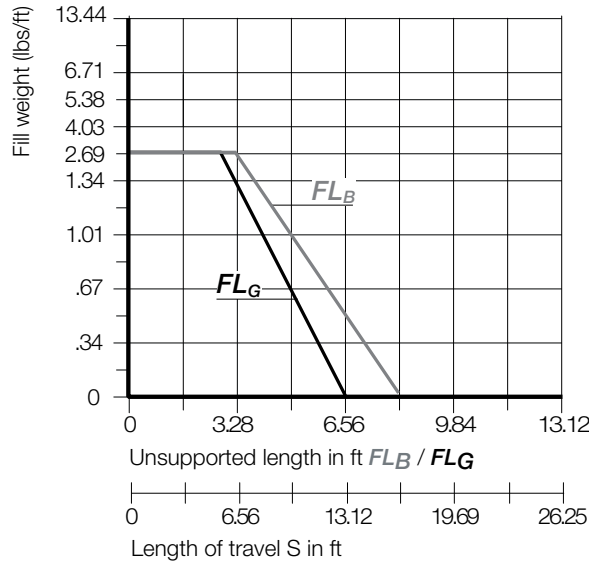
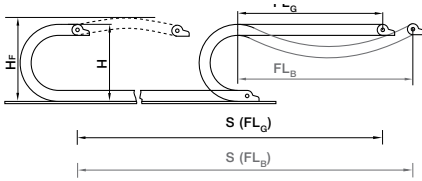
Series E4-21

Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ► Design, Chapter 1



Pitch per link = 1.20" (30.5 mm)
 Links per ft (m) = 10.06 (33)
 For center mount applications:
 Chain length = $\frac{S}{2} + K$

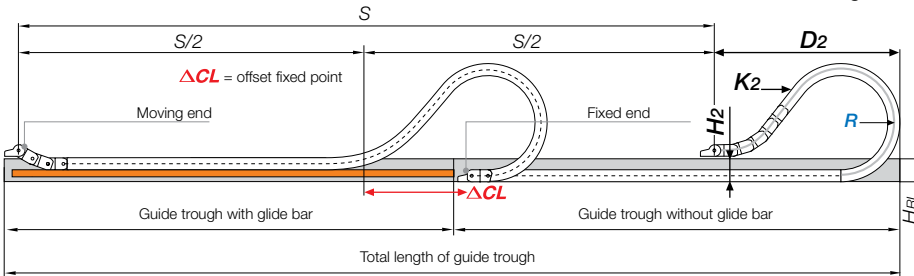
The required clearance height:
 $H_f = H + 1.18$ in. (30 mm) (with 1.01 lbs/ft (1.5 kg/m) fill weight).
 Please consult igus® if space is particularly restricted.

R	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H	4.09 (104)	4.88 (124)	6.06 (154)	7.01 (178)	8.98 (228)	12.91 (328)	16.85 (428)
D	3.86 (98)	4.25 (108)	4.84 (123)	5.31 (135)	6.30 (160)	8.27 (210)	10.24 (260)
K	7.28 (185)	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	21.06 (535)	27.17 (690)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10m) to max. 394 ft. (120m)

For center mount applications:
 Chain length = $\frac{S}{2} + K_2$



R	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
H ₂	-	-	-	-	5.31 (135)	5.31 (135)	5.31 (135)
D ₂₊₂₅	-	-	-	-	19.29 (490)	20.87 (530)	26.18 (665)
K ₂	-	-	-	-	30.79 (782)	36.22 (920)	43.46 (1104)
ΔACL	-	-	-	-	10.63 (270)	14.57 (370)	18.50 (470)

In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.



E4-21

Short Travels - Unsupported

Unsupported e-chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

- S = Length of travel
 - R = Bending radius
 - H = Nominal clearance height
 - D = Overlength e-chain® radius in final position
 - $K = \pi \cdot R + \text{safety buffer}$
 - H_f = Required clearance height
 - H_{ri} = Trough inner height
 - H₂ = *Mounting height
 - D₂ = Overlength - long travels, gliding
 - K₂ = *Add-on
- *If the mounting bracket location is set lower



PDF: igus.com/e-chain-pdfs
 Product information: igus.com/e-chains

Long Travels - Gliding



If the unsupported length is exceeded, the e-chain®/ Tube must glide on itself. This requires a guide trough.

Design, Chapter 1 main catalog



For support of the lower run, see Chapter 9 of the main catalog for the Support Tray tool kit

Technical Data



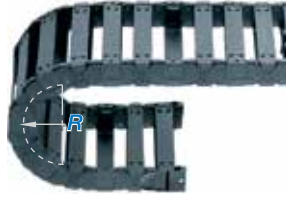
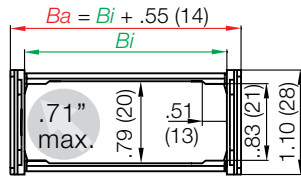
Details of material properties

► Chapter 1

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s ² (200 m/s ²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s ² (6 m/s ²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s ² (50 m/s ²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120°C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

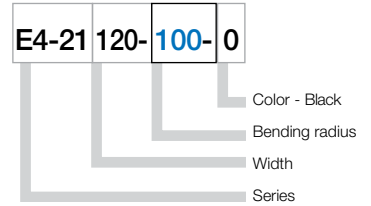
Series E4-21 - e-chain® with crossbars every link

igus®
e-chain system®

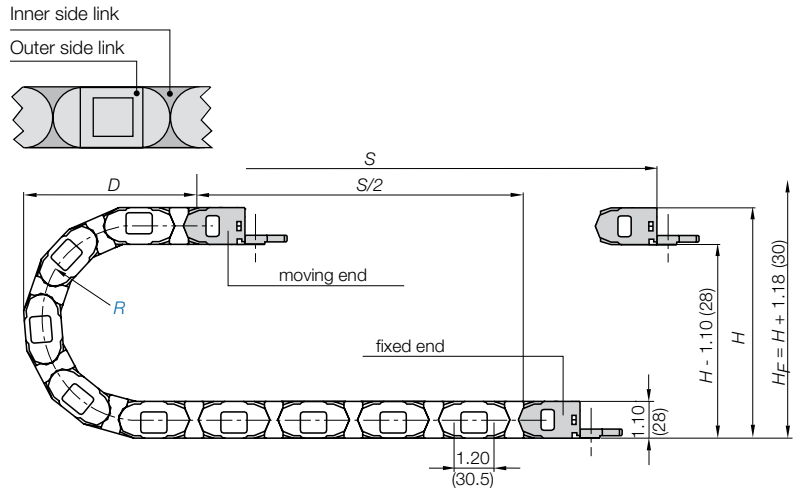
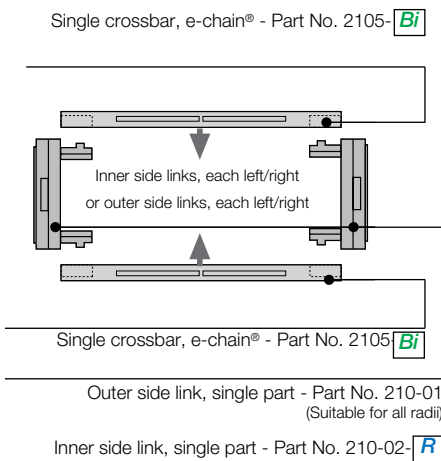


- Crossbars every link
- Removable crossbars
- Separator for locking crossbar (fixable) Standard
- Can be opened from both sides

Part Number Structure



e-chain® as separate parts, links and side plates



Supplement part number with required radius. Example: E4-21-120-100-0
Pitch: 1.20 in. (30.5 mm) per link links/ft(m) = 10.06 (33)

Part Number.	<i>Bi</i>	<i>Ba</i>	Weight
Snap-open inner radius	in. (mm)	in. (mm)	lbs/ft (kg/m)
E4-21-030-□-0	1.18 (30)	1.73 (44)	≈ 0.40 (0.60)
E4-21-040-□-0	1.57 (40)	2.13 (54)	≈ 0.43 (0.64)
E4-21-050-□-0	1.97 (50)	2.52 (64)	≈ 0.45 (0.67)
E4-21-060-□-0	2.36 (60)	2.91 (74)	≈ 0.48 (0.71)
E4-21-070-□-0	2.76 (70)	3.31 (84)	≈ 0.50 (0.74)
E4-21-080-□-0	3.15 (80)	3.70 (94)	≈ 0.52 (0.78)
E4-21-090-□-0	3.54 (90)	4.09 (104)	≈ 0.55 (0.82)
E4-21-100-□-0	3.94 (100)	4.49 (114)	≈ 0.57 (0.85)
E4-21-110-□-0	4.33 (110)	4.88 (124)	≈ 0.60 (0.89)
E4-21-120-□-0	4.72 (120)	5.28 (134)	≈ 0.62 (0.92)
E4-21-140-□-0	5.51 (140)	6.06 (154)	≈ 0.67 (0.99)

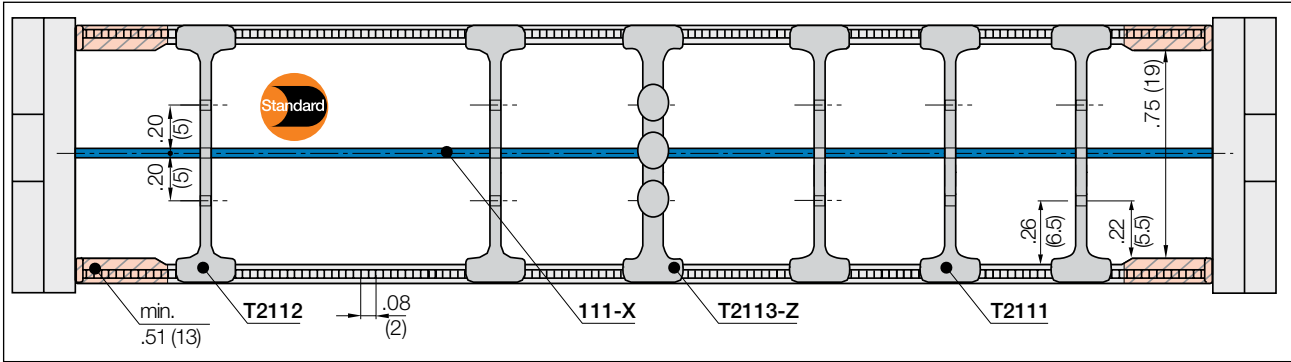
Choose from the radii below for all of the above sizes

Radius (mm) Example: E4-21-120-100-0

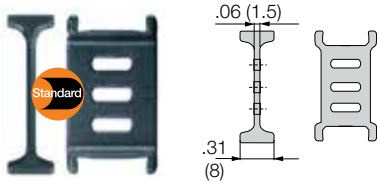
	038	048	063	075	100	150	200
<i>R</i>	1.50 (038)	1.89 (048)	2.48 (063)	2.95 (075)	3.94 (100)	5.91 (150)	7.87 (200)
<i>H</i>	4.09 (104)	4.88 (124)	6.06 (154)	7.01 (178)	8.98 (228)	12.91 (328)	16.85 (428)
<i>D</i>	3.86 (98)	4.25 (108)	4.84 (123)	5.31 (135)	6.30 (160)	8.27 (210)	10.24 (260)
<i>K</i>	7.28 (185)	8.46 (215)	10.24 (260)	11.81 (300)	14.96 (380)	21.06 (535)	27.17 (690)

Telephone 1-800-521-2747

Internet: igus.com
email: sales@igus.com
QuickSpec: igus.com/quickSpec



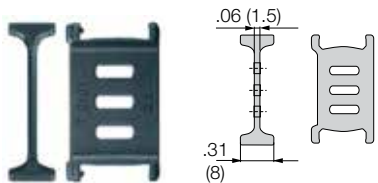
Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Separator, wide base

Unassembled	Part No. T2102
Assembled	Part No. T2112

- **Standard separator T2102**
 is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

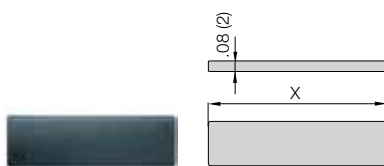


Separator, narrow head

Unassembled	Part No. T2101
Assembled	Part No. T2111

- **Notch separator T2101**
 Can be locked in .08 (2mm) increments due to notches on the crossbars of the e-chain®. The separator cannot slide sideways during operation.

Full-width shelves - for the standard interior separation



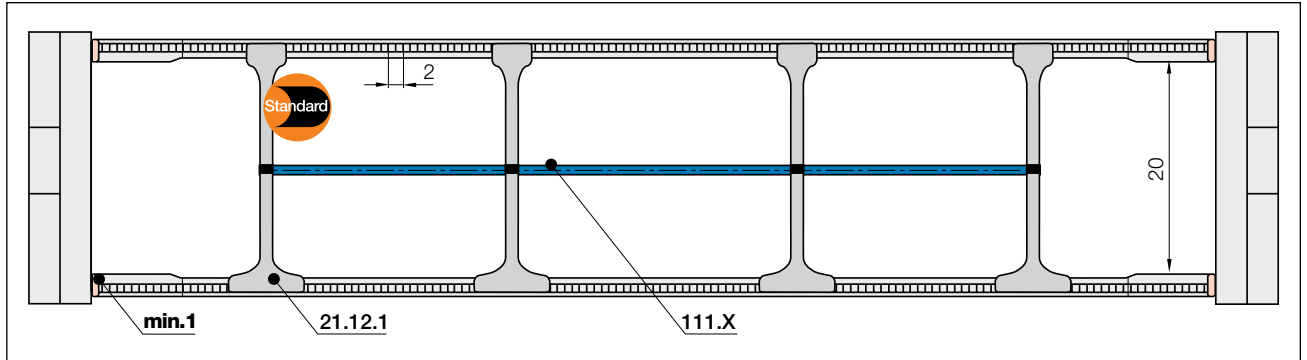
Full width shelf

Unassembled	Part No. 110-X
Assembled	Part No. 111-X

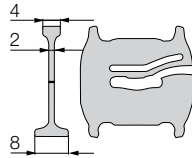
- **Full width shelf 110-X**
 is used in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Part No. Unassembled	Part No. Assembled
1.18 (30)	110-30	111-30	2.76 (70)	110-70	111-70	4.33 (110)	110-110	111-110
1.57 (40)	110-40	111-40	3.15 (80)	110-80	111-80	4.72 (120)	110-120	111-120
1.97 (50)	110-50	111-50	3.54 (90)	110-90	111-90			
2.36 (60)	110-60	111-60	3.94 (100)	110-100	111-100			





Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd e-chain® link



Lean Separator

Unassembled	Part No. 21-12
Assembled	Part No. 21-12-1

- **Lean separators 31-12**

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.



- **Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time** (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)

Separator with integrated strain relief teeth

- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. T2103.Z. **More information** ► Chapter 10



Aluminum support tray

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ► Chapter 9



Reduce assembly time - E4 e-chain® opener

- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information ► www.igus.com/E4savetime



e-chain system® E4-1

Series E4-21

Mounting Brackets - Polymer



E4-21

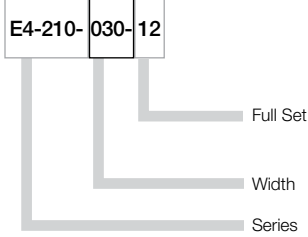


Option: pivoting

- Recommended for unsupported and gliding applications
- KMA mounting bracket with attachment points on all sides
- Well suited for tight installation conditions
- Integrated strain relief possible



Part Number Structure



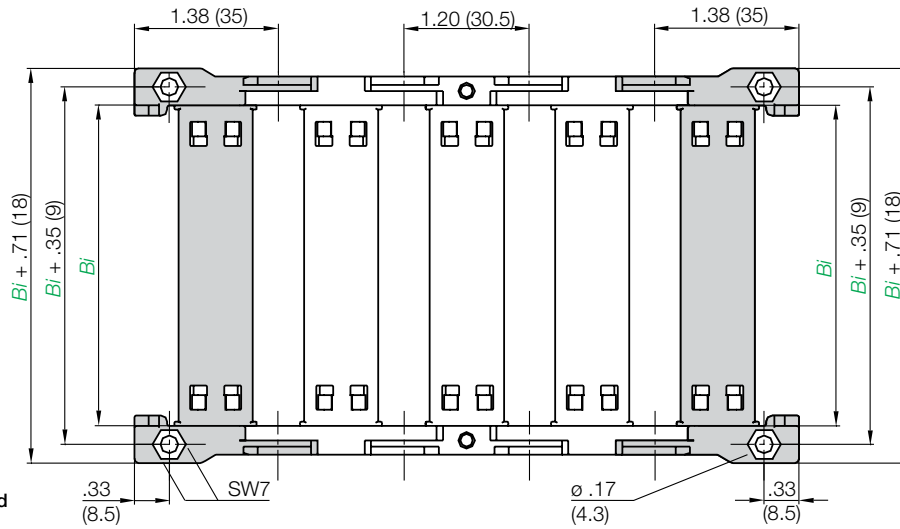
Full set, for both ends:

E4-210-030-12

Single-part order:

E4-210-030-1 Mounting bracket moving end

E4-210-030-2 Mounting bracket fixed end



Width	Part No. Full Set	Bi in. (mm)	Width	Part No. Full Set	Bi in. (mm)
-030	E4-210-030-12	1.18 (30)	-090	E4-210-090-12	3.54 (90)
-040	E4-210-040-12	1.57 (40)	-100	E4-210-100-12	3.94 (100)
-050	E4-210-050-12	1.97 (50)	-110	E4-210-110-12	4.33 (110)
-060	E4-210-060-12	2.36 (60)	-120	E4-210-120-12	4.72 (120)
-070	E4-210-070-12	2.75 (70)	-140	E4-210-140-12	5.51 (140)
-080	E4-210-080-12	3.15 (80)			



Special feature mounting brackets KMA: Series E4-21

- Mounting brackets with attachment points on all sides
- Mounting hole is countersunk for socket head screw (M4) and hexagon nut (M4)
- **Attention:** Series E4-21 always needs to end with an inner link (odd number of links)



igus®
e-chain system®

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QuickSpec: igus.com/quickspec