

**Cable Clamp Heat-Shrink Grommet**

**Product Facts**

- Less assembly time
- Superior strain-relief
- Fewer errors — less rework
- Rework made easier
- No build-up taping or feeding wire through grommet
- Typical installation in just 10-20 seconds
- Re-expandable I.D. allows wire addition to a cable bundle



**Applications**

shrinkHOoP grommet (URHR) is an ultra high ratio heat-shrinkable-strain-relief grommet that can be placed over the cable assembly after the connector pinning operation is completed. The ultra-high expansion ratio material conveniently fills the space between the clamp type connector accessory and the cable. (When clamped into position, shrinkHOoP grommet provides strain relief that is more consistent and convenient than many conventional practices — for example, taping, grommet, or tape/grommet combination). The high ratio conformity of shrinkHOoP grommets will match most

typical cable configurations from single conductor to the high density multiple conductor arrangements.

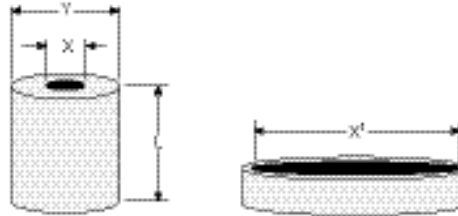
With shrinkHOoP grommet, repairs and rework are a snap – simply heat the grommet until soft, slide a NON-METALLIC probe through the center of the wire bundle (enlarging the grommet I.D.). Once cooled, the grommet will remain open allowing wires to be added, removed or reworked. The system can then be checked, the grommet reheated (shrinking it down again), positioned, and clamped in place.

**Operating Temperature Range**

-55°C to 135°C  
[-67°F to 275°F]

shrinkHOoP (Continued)

RW



Product Dimensions  
Inches (millimeters)

Part No.	I.D. Expanded (X1) min.	I.D. Recovered (X) max.	O.D. (Y) Ref.	Length (L) Ref.	Wt. (gm) Ref.	Notes
URHR-1	1 [25]	.08 [2.1]	0.25 [6]	0.5 [13]	0.75	
URHR-2	1.23 [31]	.10 [2.6]	0.375 [10]	0.5 [13]	1	
URHR-3	1.44 [37]	.14 [3.6]	0.5 [13]	0.5 [13]	1.5	
URHR-4	1.85 [47]	0.18 [4.7]	0.562 [14]	0.75 [19]	3.5	
URHR-5	2 [51]	0.20 [5.1]	0.812 [21]	0.75 [19]	5	

a) Recovered length will allow for 1.91 [0.075] either side of the collar, minimum in most cases.

Typical shrinkHOoP Grommet Performance

	Property	Performance	Test Method
Physical	Tensile strength	1500 psi (10.3 Mpa)	ASTM D-412
	Ultimate elongation	250% minimum	ASTM D-412
	Specific gravity	1.4 maximum	ASTM D-792
	Water absorption	0.5 % maximum	ASTM D-570 A
	Flammability	Pass	ASTM D-635
	Corrosion resistance	Pass	ASTM D-2671 A
	Low temperature flex 4 hours at -55+/-1°C [67+/-2°F]	Pass	ASTM D-2671 C
	Heat resistance	200% ultimate elongation, minimum	ASTM D-2671
	168 hrs at 175+/-1°C [347+/-2°F]	1200 psi (8.3 Mpa) tensile strength, minimum	
	Heat shock 4 hrs at 225+/-2°C [437+/-5°F]	No cracking, dripping or flowing	ASTM D 2671
Elastic Memory	—	275% minimum expansion to 4 inch (10 cm) of a fully recovered test specimen, and 93% recovery of expanded specimen after oven conditioning for 1 minute at 150+/-2°C [302 +/- 4°F]	—
Electrical	Dielectric strength	200 v/mil (7880 v/mm) minimum	ASTM D-876
	Volume resistivity	10 14 ohm-cm minimum	ASTM D-257
Chemical Fluid Resistance	—	200% ultimate Elongation, minimum 1200 psi (8.3 Mpa) tensile strength, minimum	ASTM F-146

Selection chart

Accessories

shrinkHOoP (Continued)

Connector Series	Connector Size				
	8 (9)	10, 12 (11, 13)	14, 16 (15, 17)	18, 20 (19, 21)	22, 24, 28*
<b>MIL-C-5015</b>					
MS3451, 52, 56, 59	1	2	3	4	5
MS3450	2	3	4	5	*
<b>MIL-C-26500**</b>					
MS24266	1	2	3	4	5
MS24264, 265	2	3	4	5	*
<b>MIL-C-26482</b>					
MS3120, 21, 22, 26	1	2	3	4	5
MS3470, 71, 74, 75, 76	1	2	3	4	5
MS3124, MS3472	2	3	4	5	*
<b>MIL-C-83723 Series I</b>					
M83723/01 & 02, 05 & 06	1	2	3	4	5
07 & 08, 13 & 14, 23 & 24	1	2	3	4	5
M83723/03 & 04	2	3	4	5	*
<b>MIL-C-83723 Series II</b>					
M83723/17 & 18, 23 & 24	1	2	3	4	5
M83723/12 & 20, 21 & 22	2	3	4	5	*
<b>MIL-C-83723 Series III</b>					
M83723/71 & 72 thru 97 & 98	1	2	3	4	5
M83723/66, 67, 68 & 69	2	3	4	5	*
<b>MIL-C-38999 Series I</b>					
MS27469	1	2	3	4	5
MS27466, 68, 96, 27505, 27656	2	3	4	5	*
<b>MIL-C-38999 Series II</b>					
MS27472, 97, 98, 27508, 27513	1	2	3	4	5
MS27473, 84, 27474	2	3	4	5	*
<b>MIL-C-38999 Series III</b>					
38999/26	1	2	3	4	5
38999/20, 24	3	4	5	5	*
<b>Boeing</b>					
BACC45, F, M, N, P, R, S, T	—	2	3	4	5
BACC 63X	—	3	4	5	*
<b>Boeing</b>					
DC39, 31, 34, 35, 50-57	1	2	3	4	5
DC32, 33, 36, 37, 60, 61, 62, 63	2	3	4	5	*

\* Consult Tyco Electronics for availability of larger sizes.

\*\* Note: cable support clamp I.D. may effect the size of shrinkHOoPgrommet selected.

Tyco Electronics Corporation has acquired XL Technologies. Use the information in the following table to convert the XL part number into the new Tyco Electronics Raychem product description.



### Ordering Information

Description	Convert to
XL Part No.	Description
080EK025	SSC-2/239
080EK025-woA	SSC-2/U
137EK050	SSC-3/239
137EK050-woA	SSC-3/U
1-8117-2A	CES-2A-D1
1-8117-3A	CES-2A-T1
1-8117-4A	CES-2A-F1
200EK075	SSC-4/239
200EK075-woA	SSC-4/U
20432242	CES-4/HR-3
2-8115-2A	CES-2-D1A
2-8115-2AOE	CES-2-D1A
2-8115-2B	CES-2-D1
2-8115-3A	CES-2-T1
2-8115-3B	CES-2-T1B
2-8115-4A	CES-2-F1A
2-8115-4B	CES-2-F1
2-8117-2A	CES-2A-D1
2-8117-2AOE	CES-2A-D1
2-8117-3A	CES-2A-T2
2-8117-4A	CES-2A-F2
2-8118-3A	CES-2-T1
2S-8115-2A	CES-2-D1A
2S-8115-3A	CES-2-T1
2S-8115-4A	CES-2-F1A
380EK150	SSC-6/239
380EK150woA	SSC-6/U
3-8115-2B	CES-3-D1
3-8115-3B	CES-3-T1
3-8115-4B	CES-3-F1
3-8118-4B	CES-3-F1
3A-8117-2B	CES-3A-D1
3A-8117-3B	CES-2A-T3
3A-8117-4B	CES-3A-F1
4-8115-2C	CES-4-D3
4-8115-3C	CES-4-T1
4-8115-4C	CES-4-F1
4-8117-2B	CES-3A-D2
4-8117-3B	CES-3A-T2
4-8117-4B	CES-3A-F2
4A-8117-2C	CES-4A-D3
4A-8117-3C	CES-4A-T3
4A-8117-4C	CES-4A-F3
52451-2X12A	91385-2/12
5-8115-3D	CES-5-T4
8114-1	CES-1
1/2/14	CES-1-2
8114-1-49R	CES-1R
8114-2	CES-2
8114-2-50R	CES-2R
8114-2S	CES-2
8114-2V	CES-2V
8114-2VL	CES-2V
8114-3	CES-3
8114-3-51R	CES-3R
8114-3L	CES-3L
8114-3S	CES-3S
8114-4	CES-4
8114-4-54R	CES-4R
8114-4N	CES-4
8114-4S	CES-4S

Description	Convert to
XL Part No.	Description
8114-4S/C	CES-4S
8114-5	CES-5
8116-1	CES-2-A50
8116-1-49R	CES-2R-A50
8116-1A	CES-2-A50
8116-2	CES-2-A75
8116-2-50R	CES-2R-A75
8116-3	CES2-A100
8116-3-51R	CES-3R-A100
8116-3A	CES-3-A100
8116-4	CES-3-A150
8116-4-52R	CES-3R-A150
8116-4A	CES-4A-A150
8116-5	CES-5-A250
8118-2	CES-2
91342-1	D3-9 FR
91342-12	D3-30 FR
91342-2	D14-30 FR
91342-23	D14-100 FR
91342-3X2.5	D50-200 FR
91342-3	D50-100 FR
91342-34	D50-400 FR
91342-4	D200-400 FR
91343-1	T3-9 FR
91343-2	T14-23 FR
91343-2A	T14-50 FR
91343-3	T42-100 FR
91343-4	T150-300 FR
91343-5	T-400 FR
91343-5678	T3-100 FR
91343-6	T500-600 FR
91343-910	T150-400 FR
91344-1	F3-9 FR
91344-1213	F3-23 FR
91344-1415	F42-100 FR
91344-1617	F75-200 FR
91344-2	F-23 FR
91344-3	F42-60 FR
91344-4	F75-100 FR
91344-5	F133-200 FR
91344-6	F150-400 FR
91346-3	6S100-200 FR
91346-30	202A111-3-0
91346-31	202A111-3/42-0
91346-32	202A111-3/86-0
91347-30	202A121-3-0
91347-31	202A121-3/42-0
91347-32	202A121-3/86-0
91348-1	8S23-75 FR
91348-2	8S14-50 FR
91348-3	8S42-100 FR
91348-30	202A132-3-0
91348-31	202A132-3/42-0
91348-32	202A132-3/86-0
91349-30	202A142-3-0
91349-31	202A142-3/42-0
91349-32	202A142-3/86-0
91350-30	202A153-3-0
91350-31	202A153-3/42-0
91350-32	202A153-3/86-0
91351-30	202A163-3-0

**Ordering Information** (Continued)

Description	Convert to
XL Part No.	Description
91351-31	202A163-3/42-0
91351-32	202A163-3/86-0
91352-30	202A174-3-0
91352-31	202A174-3/42-0
91352-32	202A174-3/86-0
91353-30	202A185-3-0
91353-31	202A185-3/42-0
91353-32	202A185-3/86-0
91354-30	202A196-3-0
91354-31	202A196-3/42-0
91354-32	202A196-3/86-0
913L87-30	202D921-3/-0
913L87-31	202D921-3/42-0
913L87-32	202D921-3/86-0
91387-30	202A921-3/-0
91387-31	202A921-3/42-0
913L47-30	202D121-3/-0
913L47-31	202D121-3/42-0
913L47-32	202D121-3/86-0
913L48-30	202D132-3/-0
913L48-31	202D132-3/42-0
913L48-32	202D132-3/86-0
913L49-30	202D142-3/-0
913L49-31	202D142-3/42-0
913L49-32	202D142-3/86-0
913L50-30	202D153-3-0
913L50-31	202D153-3/42-0
913L50-32	202D153-3/86-0
913L51-30	202D163-3-0
913L51-31	202D163-3/42-0
913L51-32	202D163-3/86-0
913L52-30	202D174-3-0
913L52-31	202D174-3/42-0
913L52-32	202D174-3/86-0
913L53-30	202D185-3-0
913L53-31	202D185-3/42-0
913L53-32	202D185-3/86-0
913L54-30	202D196-3-0
913L54-31	202D196-3/42-0
913L54-32	202D196-3/86-0
913L66-30	202D211-3-0
913L66-31	202D211-3/42-0
913L66-32	202D211-3/86-0
913L67-30	202D221-3-0
913L67-31	202D221-3/42-0
913L67-32	202D221-3/86-0
913L68-30	202D232-3-0
913L68-31	202D232-3/42-0
913L68-32	202D232-3/86-0
913L69-30	202D242-3-0
913L69-31	202D242-3/42-0
913L69-32	202D242-3/86-0
913L70-30	202D253-3-0
913L70-31	202D253-3/42-0

Description	Convert to
XL Part No.	Description
913L70-32	202D253-3/86-0
913L87-30	202D921-3-0
913L87-31	202D921-3/42-0
913L87-32	202D921-3/86-0
913R48-30	222A132-3-0
913R48-31	222A132-3/42-0
913R48-32	222A132-3/86-0
913R49-30	222A142-3-0
913R49-31	222A142-3/42-0
913R49-32	222A142-3/86-0
913R50-30	222A152-3-0
913R50-31	222A152-3/42-0
913R50-32	222A152-3/86-0
913R51-30	222A163-3-0
913R51-31	222A163-3/42-0
913R51-32	222A163-3/86-0
913R52-30	222A174-3-0
913R52-31	222A174-3/42-0
913R52-32	222A174-3/86-0
913RL48-30	222D132-3-0
913RL48-31	222D132-3/42-0
913RL48-32	222D132-3/86-0
913RL49-30	222D142-3-0
913RL49-31	222D142-3/42-0
913RL49-32	222D142-3/86-0
913RL50-30	222D152-3-0
913RL50-31	222D152-3/42-0
913RL50-32	222D152-3/86-0
913RL51-30	222D163-3-0
913RL51-31	222D163-3/42-0
913RL51-32	222D163-3/86-0
913RL52-30	222D174-3-0
913RL52-31	222D174-3/42-0
913RL52-32	222D174-3/86-0
913Y95-30	381A301-71/-0
913Y95-31	381A301-71/42-0
913Y95-32	381A301-71/86-0
913Y96-30	381A302-71/-0
913Y96-31	381A302-71/42-0
913Y96-32	381A302-71/86-0
HHW-1.3/6A	SST-6-13FR/97-0
HHW-13/6A	SST-6-13FR/97-0
HHW-15/12	SST-12-15FR/97-0
HHW-15/6	SST-6-15FR/97-0
HHW-15/9	SST-9-15FR/97-0
HHW-20/9	SST-9-20FR/97-0
HRSR-1	URHR-1
HRSR-2	URHR-2
HRSR-3	URHR-3
HRSR-4	URHR-4
HRSR-5	URHR-5
XHTA	RHW
XHTU	RHW
XMTA	RPRD

