RE8040-SHN



High Rejection RO element for seawater and high salinity well water

SPECIFICATIONS:

General Features

Permeate flow rate:

6,000 GPD (22.7 m³/day)

Nominal salt rejection:

99.75%

Effective membrane area:

370 ft² (34.4 m²)

- 1. The stated product performance is based on data taken after 30 minutes of operation at the following test conditions:
 - 32,000 mg/L NaCl solution at 800 psig (5.5 MPa) applied pressure
 - 8% recovery
 - 77 °F (25 °C)
 - pH 6.5-7.0
- 2. Boron rejection is 92.0% at pH 8.0 and 5 mg/L boron feed with the same test conditions as above.
- 3. Minimum salt rejection is 99.6%.
- 4. Permeate flow rate for each element may vary but will be no more than 15%.
- 5. All elements are vacuum sealed in a polyethylene bag containing 1.0% SBS (sodium bisulfite) solution and individually packaged in a cardboard box.

Membrane type:

Thin-Film Composite

Membrane material:

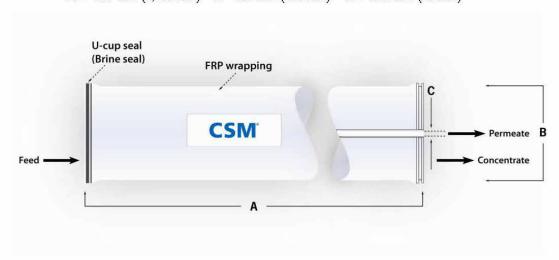
Polyamide (PA)

Element configuration:

Spiral-Wound, FRPWrapping

Dimensions

A = 40.0 inch (1,016 mm) B = 8.0 inch (201 mm) C = 1.12 inch (28 mm)



- 1. Each membrane element supplied with one brine seal, one interconnector (coupler) and four o-rings.
- 2. All RE8040 elements fit nominal 8.0 inch (201 mm) I.D. pressure vessels.

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2012 A 04-03-17-EN

RE8040-SHN



Normal grade RO element for seawater and high salinity well water

APPLICATION DATA:

Operating Limits	· Max. Pressure Drop / Element	15 psi (0.1 MPa)
	· Max. Pressure Drop / 240" Vessel	60 psi (0.41 Mpa)
	Max. Operating Pressure	1,200 psi (8.27 MPa)
	Max. Feed Flow Rate	75 gpm (17.0 m ³ /hr)
	· Min. Concentrate Flow Rate	16 gpm (3.6 m ³ /hr)
	· Max. Operating Temperature	113 °F (45 °C)
	Operating pH Range	2.0-11.0
	CIP pH Range	1.0-13.0
	· Max.Turbidity	I.0 NTU
	Max. SDI (15 min)	5.0
	· Max. Chlorine Concentration	< 0.1 mg/L
Design Guidelines for Various	· Wastewater Conventional (SDI < 5)	8–12 gfd
Water Sources	· Wastewater Pretreated by UF/MF (SDI < 3)	10-14 gfd
	· Seawater, Open Intake (SDI < 5)	7–10 gfd

Seawater, Beach Well (SDI < 3)

· Surface Water (SDI < 5)

· Surface Water (SDI < 3)

Saturation Limits (Using Antiscalants)[†]

	Well water (SDI < 3)	13–17 gfd
	RO permeate (SDI < I)	21–30 gfd
•	Langlier Saturation Index (LSI)	<+1.5
	Stiff and Davis Saturation Index (SDSI)	<+0.5
	CaSO ₄	230% saturation
•	SrSO ₄	800% saturation

SrSO4
 BaSO4
 SiO2
 The above saturation limits are typically accepted by proprietary antiscalant

manufacturers. It is the user's responsibility to ensure proper chemical(s) and concentration are dosed ahead of the membrane system to prevent scale formation anywhere within the membrane system. Membrane elements fouled or damaged due to scale formation are not covered by the limited warranty.

GENERAL HANDLING PROCEDURES

- Elements contained in the boxes must be kept dry at room temperature (7–32°C; 40–95°F) and should not be stored in direct sunlight. If the polyethylene bag is damaged, a new preservative solution (sodium bisulfite) must be added and air-tight sealed to prevent drying and biological growth.
- Permeate from the first hour of operation should be discarded to flush out the preservative solution.
- Elements should be immersed in a preservative solution during storage, shipping and system shutdowns to prevent biological growth and freezing. The standard storage solution contains 1% by weight sodium bisulfite or sodium metabisulfite (food grade). For short term storage (i.e. one week or less) 1% by weight sodium metabisulfite solution is adequate for preventing biological growth.
- Keep elements moist at all times after initial wetting.
- · Avoid excessive pressure and flow spikes.
- Only use chemicals compatible with the membrane elements and components. Use of such chemicals may void the element limited warranty.

8-12 gfd

12-16 gfd

13-17 gfd

 Permeate pressure must always be equal or less than the feed/concentrate pressure. Damage caused by permeate back pressure voids the element limited warranty.



RE8040-SHN400



High Rejection RO element with extended area for seawater and high salinity well water

SPECIFICATIONS:

General **Features**

Permeate flow rate:

6,500 GPD (24.6 m³/day)

Nominal salt rejection:

99.75%

Effective membrane area:

400 ft2 (37.2 m2)

- 1. The stated product performance is based on data taken after 30 minutes of operation at the following test conditions:
 - · 32,000 mg/L NaCl solution at 800 psig (5.5 MPa) applied pressure
 - 8% recovery
 - 77 °F (25 °C)
 - pH 6.5-7.0
- 2. Boron rejection is 92.0% at pH 8.0 and 5 mg/L boron feed with the same test conditions as above.
- 3. Minimum salt rejection is 99.6%.
- 4. Permeate flow rate for each element may vary but will be no more than 15%.
- 5. All elements are vacuum sealed in a polyethylene bag containing 1.0% SBS (sodium bisulfite) solution and individually packaged in a cardboard box.

Membrane type:

Thin-Film Composite

Membrane material:

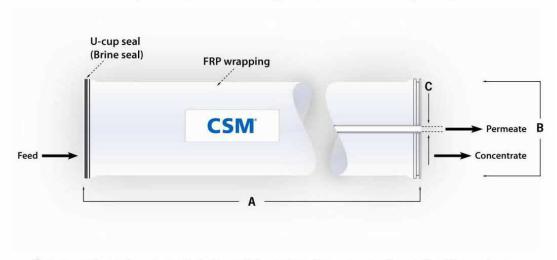
Polyamide (PA)

Element configuration:

Spiral-Wound, FRP Wrapping

Dimensions

A = 40.0 inch (1,016 mm) B = 8.0 inch (201 mm) C = 1.12 inch (28 mm)



- 1. Each membrane element supplied with one brine seal, one interconnector (coupler) and four o-rings.
- 2. All RE8040 elements fit nominal 8.0 inch (201 mm) I.D. pressure vessels.

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2012 A 04-03-18-EN

RE8040-SHN400



Normal grade RO element with extended area for seawater and high salinity well water

APPLICATION	ON DATA:
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Operating Limits	Max. Pressure Drop / Element	15 psi (0.1 MPa)
	Max. Pressure Drop / 240" Vessel	60 psi (0.41 Mpa)
	· Max. Operating Pressure	1,200 psi (8.27 MPa
	Max. Feed Flow Rate	75 gpm (17.0 m ³ /hr)
	Min. Concentrate Flow Rate	16 gpm (3.6 m³/hr)
	· Max. Operating Temperature	113 °F (45 °C)
	Operating pH Range	2.0-11.0
	· CIP pH Range	1.0-13.0
	· Max.Turbidity	I.0 NTU
	· Max. SDI (15 min)	5.0
	· Max. Chlorine Concentration	< 0.1 mg/L
Design Guidelines for Various	· Wastewater Conventional (SDI < 5)	8–12 gfd
Water Sources	· Wastewater Pretreated by UF/MF (SDI < 3)	10-14 gfd
	Seawater, Open Intake (SDI < 5)	7-10 gfd
	Seawater, Beach Well (SDI < 3)	8-12 gfd
	· Surface Water (SDI < 5)	12-16 gfd
	Surface Water (SDI < 3)	13-17 gfd
	• Well water (SDI < 3)	13–17 gfd
	RO permeate (SDI < I)	21–30 gfd
Saturation Limits	· Langlier Saturation Index (LSI)	<+1.5
(Using Antiscalants) [†]	· Stiff and Davis Saturation Index (SDSI)	<+0.5
	· CaSO4	230% saturation
	· SrSO ₄	800% saturation
	· BaSO4	6,000% saturation

GENERAL HANDLING PROCEDURES

· SiO₂

- Elements contained in the boxes must be kept dry at room temperature (7–32°C; 40–95°F) and should not be stored in direct sunlight. If the polyethylene bag is damaged, a new preservative solution (sodium bisulfite) must be added and air-tight sealed to prevent drying and biological growth.
- Permeate from the first hour of operation should be discarded to flush out the preservative solution.
- Elements should be immersed in a preservative solution during storage, shipping and system shutdowns to prevent biological growth and freezing. The standard storage solution contains 1% by weight sodium bisulfite or sodium metabisulfite (food grade). For short term storage (i.e. one week or less) 1% by weight sodium metabisulfite solution is adequate for preventing biological growth.
- Keep elements moist at all times after initial wetting.
- · Avoid excessive pressure and flow spikes.

[†]The above saturation limits are typically accepted by proprietary antiscalant manufacturers. It is the user's responsibility to ensure proper chemical(s) and concentration are dosed ahead of the membrane system to prevent scale formation anywhere within the membrane system. Membrane elements fouled or damaged due to scale formation are not covered by the limited warranty.

 Only use chemicals compatible with the membrane elements and components. Use of such chemicals may void the element limited warranty.

100% saturation

 Permeate pressure must always be equal or less than the feed/concentrate pressure. Damage caused by permeate back pressure voids the element limited warranty.

2012 A 04-03-18.2-EN

RE8040-SHF



High productivity RO element for seawater and high salinity well water

SPECIFICATIONS:

General **Features**

Permeate flow rate:

9,000 GPD (34.1 m3/day)

Nominal salt rejection:

99.7%

Effective membrane area:

370 ft2 (34.4 m2)

- 1. The stated product performance is based on data taken after 30 minutes of operation at the following test conditions:
 - 32,000 mg/L NaCl solution at 800 psig (5.5 MPa) applied pressure
 - 8% recovery
 - 77 °F (25 °C)
 - pH 6.5-7.0
- 2. Minimum salt rejection is 99.6%.
- 3. Permeate flow rate for each element may vary but will be no more than 15%.
- 4. All elements are vacuum sealed in a polyethylene bag containing 1.0% SBS (sodium bisulfite) solution and individually packaged in a cardboard box.

Membrane type:

Thin-Film Composite

Membrane material:

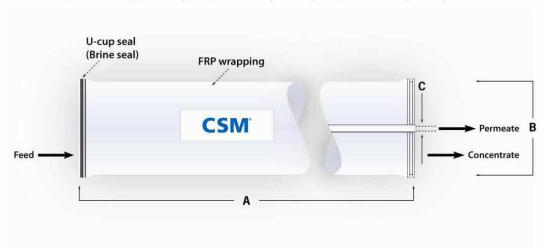
Polyamide (PA)

Element configuration:

Spiral-Wound, FRPWrapping

Dimensions

A = 40.0 inch (1,016 mm) B = 8.0 inch (201 mm) C = 1.12 inch (28 mm)



- 1. Each membrane element supplied with one brine seal, one interconnector (coupler) with four o-rings.
- 2. All RE8040 elements fit nominal 8.0 inch (201 mm) I.D. pressure vessels.

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2012 A 04-03-19-EN

RE8040-SHF



High productivity RO element for seawater and high salinity well water

APPLICATION DATA:

Operating Limits	· Max. Pressure Drop / Element	15 psi (0.1 MPa)
	Max. Pressure Drop / 240" Vessel	60 psi (0.41 Mpa)
	Max. Operating Pressure	1,200 psi (8.27 MPa)
	Max. Feed Flow Rate	75 gpm (17.0 m³/hr)
	Min. Concentrate Flow Rate	16 gpm (3.6 m³/hr)
	Max. Operating Temperature	113 °F (45 °C)
	Operating pH Range	2.0-11.0
	CIP pH Range	1.0-13.0
	· Max.Turbidity	I.0 NTU
	· Max. SDI (15 min)	5.0
	Max. Chlorine Concentration	< 0.1 mg/L
Design Guidelines for Various	· Wastewater Conventional (SDI < 5)	8–12 gfd
Water Sources	· Wastewater Pretreated by UF/MF (SDI < 3)	10-14 gfd
	· Seawater, Open Intake (SDI < 5)	7–10 gfd
	Seawater, Beach Well (SDI < 3)	8–12 gfd
	· Surface Water (SDI < 5)	12-16 gfd
	Surface Water (SDI < 3)	13–17 gfd
	Well water (SDI < 3)	13-17 gfd
	RO permeate (SDI < I)	21-30 gfd
Saturation Limits (Using Antiscalants) [†]	· Langlier Saturation Index (LSI)	<+1.5
	Stiff and Davis Saturation Index (SDSI)	<+0.5
	· CaSO ₄	230% saturation
	· SrSO ₄	800% saturation
	· BaSO4	6,000% saturation
	· SiO ₂	100% saturation
	[†] The above saturation limits are typically accepted by manufacturers. It is the user's responsibility to ensure concentration are dosed ahead of the membrane sys formation anywhere within the membrane system. M or damaged due to scale formation are not covered	e proper chemical(s) and tem to prevent scale embrane elements fouled

GENERAL HANDLING PROCEDURES

- Elements contained in the boxes must be kept dry at room temperature (7–32°C; 40–95°F) and should not be stored in direct sunlight. If the polyethylene bag is damaged, a new preservative solution (sodium bisulfite) must be added and air-tight sealed to prevent drying and biological growth.
- Permeate from the first hour of operation should be discarded to flush out the preservative solution.
- Elements should be immersed in a preservative solution during storage, shipping and system shutdowns to prevent biological growth and freezing. The standard storage solution contains 1% by weight sodium bisulfite or sodium metabisulfite (food grade). For short term storage (i.e. one week or less) 1% by weight sodium metabisulfite solution is adequate for preventing biological growth.
- Keep elements moist at all times after initial wetting.
- Avoid excessive pressure and flow spikes.
- Only use chemicals compatible with the membrane elements and components. Use of such chemicals may void the element limited warranty.
- Permeate pressure must always be equal or less than the feed/concentrate pressure. Damage caused by permeate back pressure voids the element limited warranty.

2012 A 04-03-19.2-EN

RE8040-SHF400



High productivity RO element with extended area for seawater and high salinity well water

SPECIFICATIONS:

General **Features**

Permeate flow rate:

9,700 GPD (36.7 m³/day)

Nominal salt rejection:

99.7%

Effective membrane area:

400 ft2 (37.2 m2)

- 1. The stated product performance is based on data taken after 30 minutes of operation at the following test conditions:
 - * 32,000 mg/L NaCl solution at 800 psig (5.5 MPa) applied pressure
 - 8% recovery
 - 77 °F (25 °C)
 - pH 6.5-7.0
- 2. Minimum salt rejection is 99.6%.
- 3. Permeate flow rate for each element may vary but will be no more than 15%.
- 4. All elements are vacuum sealed in a polyethylene bag containing 1.0% SBS (sodium bisulfite) solution and individually packaged in a cardboard box.

Membrane type:

Thin-Film Composite

Membrane material:

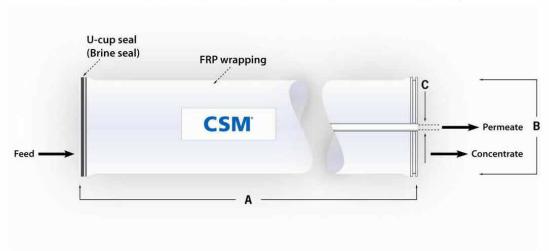
Polyamide (PA)

Element configuration:

Spiral-Wound, FRP Wrapping

Dimensions

A = 40.0 inch (1,016 mm) B = 8.0 inch (201 mm) C = 1.12 inch (28 mm)



- 1. Each membrane element supplied with one brine seal, one interconnector (coupler) with four o-rings.
- 2. All RE8040 elements fit nominal 8.0 inch (201 mm) I.D. pressure vessels.

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2012 A 04-03-20-EN

RE8040-SHF400



High productivity RO element with extended area for seawater and high salinity well water

APPLICATION DATA:

Operating Limits	· Max. Pressure Drop / Element	15 psi (0.1 MPa)
	Max. Pressure Drop / 240" Vessel	60 psi (0.41 Mpa)
	· Max. Operating Pressure	1,200 psi (8.27 MPa)
	· Max. Feed Flow Rate	75 gpm (17.0 m³/hr)
	· Min. Concentrate Flow Rate	16 gpm (3.6 m ³ /hr)
	· Max. Operating Temperature	113 °F (45 °C)
	· Operating pH Range	2.0-11.0
	· CIP pH Range	1.0-13.0
	· Max.Turbidity	I.0 NTU
	· Max. SDI (15 min)	5.0
	· Max. Chlorine Concentration	< 0.1 mg/L
Design Guidelines for Various	· Wastewater Conventional (SDI < 5)	8–12 gfd
Water Sources	· Wastewater Pretreated by UF/MF (SDI < 3)	10-14 gfd
	· Seawater, Open Intake (SDI < 5)	7-10 gfd
	· Seawater, Beach Well (SDI < 3)	8-12 gfd
	· Surface Water (SDI < 5)	12–16 gfd
	· Surface Water (SDI < 3)	13-17 gfd
	· Well water (SDI < 3)	13-17 gfd
	· RO permeate (SDI < I)	21-30 gfd
Saturation Limits	· Langlier Saturation Index (LSI)	<+1.5
$(Using Antiscalants)^T$	Stiff and Davis Saturation Index (SDSI)	<+0.5
	CaSO4	230% saturation

[†]The above saturation limits are typically accepted by proprietary antiscalant manufacturers. It is the user's responsibility to ensure proper chemical(s) and concentration are dosed ahead of the membrane system to prevent scale formation anywhere within the membrane system. Membrane elements fouled or damaged due to scale formation are not covered by the limited warranty.

GENERAL HANDLING PROCEDURES

 Elements contained in the boxes must be kept dry at room temperature (7–32°C; 40–95°F) and should not be stored in direct sunlight. If the polyethylene bag is damaged, a new preservative solution (sodium bisulfite) must be added and air-tight sealed to prevent drying and biological growth.

· SrSO₄

· BaSO₄

· SiO₂

- Permeate from the first hour of operation should be discarded to flush out the preservative solution.
- Elements should be immersed in a preservative solution during storage, shipping and system shutdowns to prevent biological growth and freezing. The standard storage solution contains 1% by weight sodium bisulfite or sodium metabisulfite (food grade). For short term storage (i.e. one week or less) 1% by weight sodium metabisulfite solution is adequate for preventing biological growth.
- · Keep elements moist at all times after initial wetting.
- · Avoid excessive pressure and flow spikes.
- Only use chemicals compatible with the membrane elements and components. Use of such chemicals may void the element limited warranty.

800% saturation

6,000% saturation

100% saturation

 Permeate pressure must always be equal or less than the feed/concentrate pressure. Damage caused by permeate back pressure voids the element limited warranty.

2012 A 04-03-20.2-EN

RE8040-SHA400



High productivity RO element with extended area for seawater and high salinity well water

SPECIFICATIONS:

General **Features**

Permeate flow rate:

7,500 GPD (28.4 m³/day)

Nominal salt rejection:

99.75%

Effective membrane area:

400 ft2 (37.2 m2)

- 1. The stated product performance is based on data taken after 30 minutes of operation at the following test conditions:
 - · 32,000 mg/L NaCl solution at 800 psig (5.5 MPa) applied pressure
 - 8% recovery
 - 77 °F (25 °C)
 - pH 6.5-7.0
- 2. Boron rejection is 92.0% at pH 8.0 and 5 mg/L boron feed with the same test conditions as above.
- 3. Minimum salt rejection is 99.6%.
- 4. Permeate flow rate for each element may vary but will be no more than 15%.
- 5. All elements are vacuum sealed in a polyethylene bag containing 1.0% SBS (sodium bisulfite) solution and individually packaged in a cardboard box.

Membrane type:

Thin-Film Composite

Membrane material:

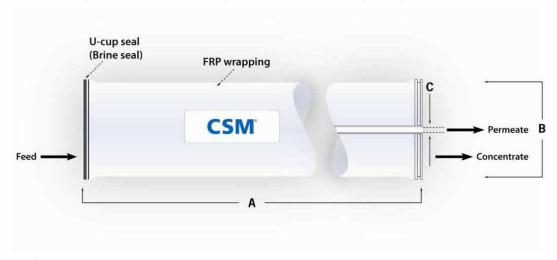
Polyamide (PA)

Element configuration:

Spiral-Wound, FRP Wrapping

Dimensions

A = 40.0 inch (1,016 mm) B = 8.0 inch (201 mm) C = 1.12 inch (28 mm)



- 1. Each membrane element supplied with one brine seal, one interconnector (coupler) and four o-rings.
- 2. All RE8040 elements fit nominal 8.0 inch (201 mm) I.D. pressure vessels.

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2012 A 04-03-21-EN

RE8040-SHA400



High productivity RO element with extended area for seawater and high salinity well water

APPLICATION DATA:

Operating Limits	Max. Pressure Drop / Element	15 psi (0.1 MPa)
	· Max. Pressure Drop / 240" Vessel	60 psi (0.41 Mpa)
	· Max. Operating Pressure	1,200 psi (8.27 MPa)
	Max. Feed Flow Rate	75 gpm (17.0 m ³ /hr)
	Min. Concentrate Flow Rate	16 gpm (3.6 m ³ /hr)
	 Max. Operating Temperature 	113 °F (45 °C)
	Operating pH Range	2.0-11.0
	· CIP pH Range	1.0-13.0
	· Max.Turbidity	I.0 NTU
	· Max. SDI (15 min)	5.0
	Max. Chlorine Concentration	< 0.1 mg/L
Design Guidelines for Various	· Wastewater Conventional (SDI < 5)	8–12 gfd
Water Sources	• Wastewater Pretreated by UF/MF (SDI < 3)	10-14 gfd
	Seawater, Open Intake (SDI < 5)	7-10 gfd
	· Seawater, Beach Well (SDI < 3)	8–12 gfd
	· Surface Water (SDI < 5)	12–16 gfd
	· Surface Water (SDI < 3)	13–17 gfd
	· Well water (SDI < 3)	13–17 gfd
	· RO permeate (SDI < I)	21-30 gfd
	· Langlier Saturation Index (LSI)	<+1.5
Saturation Limits	Languer Sacuration index (LSI)	15/8 145-7/
Saturation Limits (Using Antiscalants) [†]	Stiff and Davis Saturation Index (SDSI)	<+0.5

CaSO₄
 SrSO₄
 BaSO₄
 SiO₂
 CaSO₄
 800% saturation
 6,000% saturation
 100% saturation

[†]The above saturation limits are typically accepted by proprietary antiscalant manufacturers. It is the user's responsibility to ensure proper chemical(s) and concentration are dosed ahead of the membrane system to prevent scale formation anywhere within the membrane system. Membrane elements fouled or damaged due to scale formation are not covered by the limited warranty.

GENERAL HANDLING PROCEDURES

- Elements contained in the boxes must be kept dry at room temperature (7-32°C; 40-95°F) and should not be stored in direct sunlight. If the polyethylene bag is damaged, a new preservative solution (sodium bisulfite) must be added and air-tight sealed to prevent drying and biological growth.
- Permeate from the first hour of operation should be discarded to flush out the preservative solution.
- Elements should be immersed in a preservative solution during storage, shipping and system shutdowns to prevent biological growth and freezing. The standard storage solution contains 1% by weight sodium bisulfite or sodium metabisulfite (food grade). For short term storage (i.e. one week or less) 1% by weight sodium metabisulfite solution is adequate for preventing biological growth.
- · Keep elements moist at all times after initial wetting.
- · Avoid excessive pressure and flow spikes.
- Only use chemicals compatible with the membrane elements and components. Use of such chemicals may void the element limited warranty.
- Permeate pressure must always be equal or less than the feed/concentrate pressure. Damage caused by permeate back pressure voids the element limited warranty.

2012 A 04-03-21.2-EN