



To:	TSSA	From:	Janet Townsend
Company:	Emerson Process Management Rosemount Analytical, Inc.	Phone:	416-747-4291
Pages:	13	Location:	Toronto
Our File:	ANR-4503	Date:	April 18, 2017

Your File: 2051928

Subject: Request for Design Registration

Dear Ms. Francis,

CSA has reviewed the documentation submitted by TSSA on behalf of Emerson Process Management Rosemount Analytical, Inc.

These fittings have been registered by CSA for the Province of Québec. In accordance with an agreement between CSA, the Provinces of Québec and Saskatchewan; this registration is recognized by Quebec and Saskatchewan. These fittings are acceptable for use in these Provinces.

The letters CSA will be applied as a prefix to the CRN indicate which fittings have been registered in this manner. A copy of the stamped Statutory Declaration is attached.

The CRN is CSA-0F19160.56.

A copy of the Statutory Declaration with an original stamp affixed will be forwarded to you along with our invoice by regular mail.

Yours truly

A handwritten signature in blue ink that reads 'Janet Townsend'.

Janet Townsend
Program Manager
CSA Group



TECHNICAL STANDARDS &
SAFETY AUTHORITY
14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario
Canada M8X 2X4

Show facsimile of manufacturer's logo or trademark, as it will
appear on the fitting, in the space below

ROSEMOUNT

EMERSON
Process Management

STATUTORY DECLARATION

Registration of Fittings

I, **DANA CROWLEY, MANAGER OF COMPLIANCE ENGINEERING**

(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of **EMERSON PROCESS MANAGEMENT ROSEMOUNT ANALYTICAL, INC.**

(Name of Manufacturer)

Located at **2400 BARRANCA PARKWAY, IRVINE, CA, 92606, USA**

(Plant Address)

949-757-8587

(Telephone No.)

949-474-7250

(Fax No.)



do solemnly declare that the fittings listed hereunder, which are subject to the *Technical Standards and Safety Act*, Boilers and Pressure Vessels Regulation, comply with all of the requirements of

ASME B31.1, ASME B31.3

(Title of recognized North American Standard)

which specifies the dimensions, materials of construction, pressure/temperature ratings, identification marking the fittings and service;



or are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with _____ as supported by the attached data which identifies the dimensions, material of construction, pressure/temperature ratings and the basis for such ratings, the marking of the fitting for identification and service.

I further declare that the manufacture of these fittings is controlled by a quality system meeting the requirements of **ISO:9001:2008** which has been verified by the following authority, **DNV-GL**.

The items covered by this declaration, for which I seek registration, are category **CATEGORY F** type fittings. In support of this application, the following information and/or test data are attached as follows:

SCOPE OF CRN, DRAWINGS, CALCULATIONS, REPORTS, WORLDWIDE LOCATIONS APPENDIX

(drawings, calculations, test reports, etc.)

Declared before me at **Irvine** in the **Orange County** of **California**

the **5th** day of **January** AD **2017**.

Commissioner for Oaths:

Catherine Ann Stip

(Printed name)

(Signature)

(Signature of Declarer)

FOR OFFICE USE ONLY

To the best of my knowledge and belief, the application meets the requirements of the *Technical Standards and Safety Act*, Boilers and Pressure Vessels Regulation, and CSA Standard B51 and is accepted for registration in Category **F**

CRN:

CSA -OF19160.56

Registered by:

A. BANWATT

Dated:

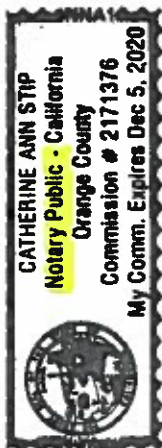
APRIL 12 2017

NOTE: This registration expires on **FEB 10 2027**

REGISTERED

CRN: CSA -OF19160.56

Registration Process administered by
CSA Group per CSA B51



REGISTERED



CRN: CSA-0F19160.56

Registration Process administered by
CSA Group per CSA B51

Technical Review performed per CSA B51
Performed by: ANRIC Enterprises Inc.

Signed: 

Date: 12 April, 2017

ROSEMOUNT

EMERSON PROCESS MANAGEMENT ROSEMOUNT ANALYTICAL, INC.
2400 BARRANCA PARKWAY
IRVINE, CA
USA, 92606

27-Jan-17

SCOPE OF CRN REGISTRATION

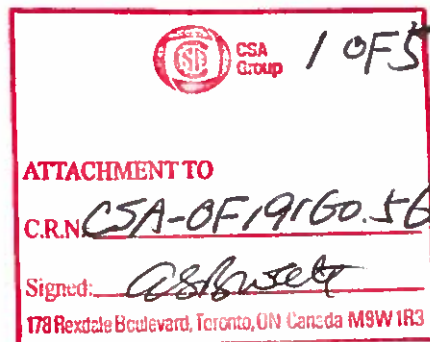
Item No. 1

PRODUCT DESCRIPTION		PRESSURE - TEMPERATURE RATINGS	
Description:	Low Flow Cell 24091-00, 24091-01, 24091-02	MAWP AT 158F:	90 psig
Design Standard:	ASME B31.3.	MDMT:	32F
End Connections:	Process: 1/4" FNPT, Sensor: 3/4" FNPT, 1" FNPT	NOTES:	None
Drawings:	24091-00, 24091-2, 24091-02		
CRN Report:	R-0709A		
MATERIALS OF CONSTRUCTION			
Sensor Material:	Polycarbonate, Polyester, Silicone		
Notes:	None		

Item No. 2

PRODUCT DESCRIPTION		PRESSURE - TEMPERATURE RATINGS	
Description:	Free Chlorine Sensor 499ACL Dissolved Oxygen Sensor 499ADO	MAWP AT 122F:	65 psig
Design Standard:	ASME B31.3.	MDMT:	32F
End Connections:	Sensor: 1" MNPT	NOTES:	None
Drawings:	499A-VP, 499A, 499ACL-03		
CRN Report:	R-0709B		
MATERIALS OF CONSTRUCTION			
Sensor Material:	Noryl, Viton, Silicone, Platinum, Polyethersulphone		
Notes:	None		

Note 1) See attached list of Manufacturing Locations applicable to this CRN.



THIS IS PART OF
CRN OF 19160.5
Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program

ROSEMOUNT


EMERSON
Process Management

WORLDWIDE LOCATIONS APPENDIX

ROSEMOUNT MANUFACTURING LOCATIONS & CERTIFYING AUTHORITIES

(rev. January 04, 2017)

Rosemount, Inc.
6021 Innovation Boulevard
Shakopee, MN
55379, USA
ISO 9001:2008 Certified by DNV GL


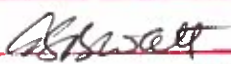
Rosemount, Inc.
8200 Market Boulevard
Chanhassen, MN
55317, USA
ISO 9001:2008 Certified by DNV GL

Rosemount, Inc.
12001 Technology Drive
Eden Prairie, MN
55344, USA
ISO 9001:2008 Certified by DNV GL

Emerson Process Management Rosemount Analytical, Inc.
2400 Barranca Parkway
Irvine, CA
92606, USA
ISO 9001:2008 Certified by DNV GL

Emerson Process Management Rosemount Analytical, Inc.
Circuito Del Progreso #27, Parque Industrial Progreso,
21190, Mexicali, MX,
Mexico
ISO 9001:2008 Certified by DNV GL

THIS IS PART OF
CRN 0F19160.5
Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program

 CSA Group	0F5
ATTACHMENT TO	
C.R.N. CSA-0F19160.56	
Signed: 	
178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3	

LOW FLOW CELLS

ATTACHMENT TO

C.R.N.

Signed

and have a union connection that allows easy removal of the sensor.

Emerson offers a variety of low flow cells for sidestream applications where it is impractical to divert a large volume of sample, particularly if the sample must be sent to waste. Choose a transparent plastic or stainless steel body—both have 1/4 inch FPT process connections. Plastic flow cells PN 24091-00, -01, and -02 are also supplied with 1/4 inch MPT to 1/4 inch OD tubing fittings

Valved rotameters are also available (see page 41) to adjust and measure sample flow in sidestream installations. Accurate control of flow is especially important when measuring dissolved oxygen, chlorine, and ozone.

THIS IS PART OF
CRN 0F19160.5

Low Flow Cells		Technical Standards & Safety Authority Rollers & Pressure Vessels Safety Program			PN 24091-00		PN 24091-01		PN 24091-02		S10240 (SQ 7716)		S10290 (SQ 7637)	
Process Connection		1/4 inch 316 SST male tube connector												
Wetted Materials		Body and Nut - Polycarbonate/polyester blend; 1/4" Fittings - 316 SST; O-ring - Silicone						316 SST						
Maximum Temperature		158°F (70°C)						Consult Factory						
Maximum Pressure		90 psig (621 kPa)						Consult Factory						
Sensor Threaded Connection		1 inch		1 inch		3/4 inch		1 inch		3/4 inch				
Special features		None		Bubble shedding nozzle		None		Order as a special request only						
Compatible Sensor Models*														
pH and ORP Sensors		396P, 389, 3500, 3900		-		RB-546		396P, 389, 3500, 3900		-				
Conductivity Sensors		-		-		400, 400 VP		-		400, 400 VP				
Dissolved Oxygen		499ATrDO, 499ADO		499ADO		-		499A DO		-				
Ozone		499AOZ		-		-		-		-				
Chlorine		499ACL		498CL, 499ACL		-		-		-				

*Note: All sensor models noted in this graph are listed with integral cables. The sensor models with the "VP" designation can also be used.



Figure 22. PN 24091-00 with 3900VP pH sensor

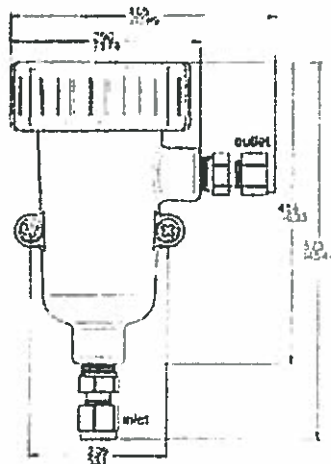


Figure 23. Low Flow Cell (PN 24091-00, 24091-01 or 24091-02) dimensions



Figure 24. PN S10290 with 400VP sensor

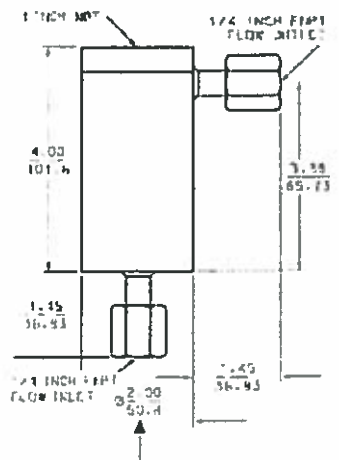


Figure 25. Metal Low Flow Cell (PN S10240 and S10290) dimensions

499 ACL-01 Free Chlorine Sensor

The 499ACL-01 sensor is intended for the continuous determination of free chlorine (hypochlorous acid plus hypochlorite ion) in water.

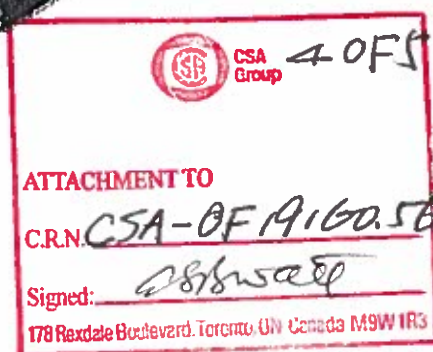
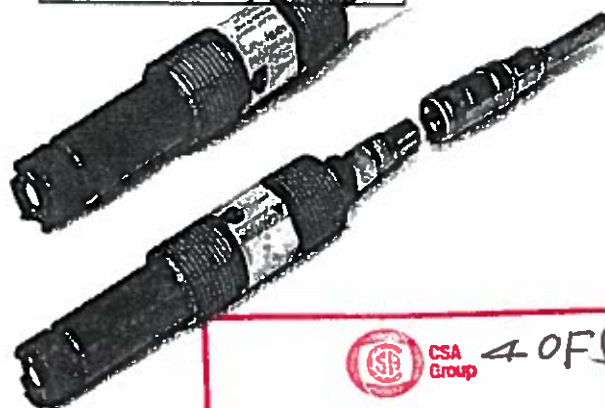
- Measure free chlorine without sample pretreatment. No messy and expensive reagents needed.
- Automatic correction to at least pH 9.5.
- Easily replaceable membrane; no special tools required.
- Automatic compensation for changes in membrane permeability with temperature.
- Automatic pressure equalization maintains correct membrane tension.
- Variopol connector option allows the sensor to be replaced without running new cable.

Features and Applications

The primary application is measuring chlorine in drinking water. The sensor requires no acid pretreatment and can measure free chlorine in samples having pH as high as 9.5. In some cases, samples having pH as great as 10.0 can be measured. For high pH applications, consult the factory. The linear range of the sensor is 0 to 10 ppm. For determination of higher levels of chlorine, consult the factory.

The 499ACL-01 is a membrane-covered amperometric sensor. The sensor consists of a hydrophilic membrane stretched tightly over a platinum cathode. A silver anode and an electrolyte solution complete the internal circuit. During operation, chlorine diffuses from the sample through the membrane. A polarizing voltage applied to the cathode completely reduces chlorine to chloride. The reduction produces a current, which the analyzer measures. The current is directly proportional to the rate at which chlorine diffuses through the membrane, which is ultimately proportional to the concentration of chlorine in the sample.

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Technical Standards & Safety Authority
Boilers & Pressure Vessels
Safety Program



The 499ACL-01 sensor needs no pretreatment. Instead, the analyzer automatically applies a pH correction factor to the chlorine reading. If the sample pH varies more than 0.2 pH (peak-to-peak), an auxiliary pH sensor is required to provide the continuous pH correction.

Because the rate of diffusion of free chlorine through the membrane depends on temperature, sensor response must be corrected for temperature changes. A Pt 100 RTD in the sensor measures the temperature, and the analyzer automatically performs the correction.

Stable, dilute chlorine standards do not exist, so the sensor must be calibrated against the results of a laboratory test run on a grab sample of the process liquid. Portable test kits are available from other manufacturers.

All amperometric free chlorine sensors respond to changes in pH. Although free chlorine is a mixture of hypochlorous acid and

499ADO Dissolved Oxygen Sensor

- Installs in aeration basins or sidestream samples.
- Rugged construction.
- Easily replaceable membrane; no special tools required.
- Automatic compensation for changes in membrane permeability with temperature.
- Automatic pressure equalization maintains correct membrane tension.
- Variopol connector option allows the sensor to be replaced without running new cable.



Features and Applications

The 499ADO sensor is intended for the continuous determination of dissolved oxygen between 0-20 ppm. The primary application is aeration basins in municipal and industrial wastewater treatment plants.

The 499ADO is a membrane-covered amperometric sensor. The sensor consists of a gas-permeable membrane stretched tightly over a gold cathode. A silver anode and an electrolyte solution complete the internal circuit. During operation, oxygen diffuses from the sample through the membrane to the cathode. A polarizing voltage applied to the cathode reduces the oxygen to hydroxide. The reaction produces a current, which the analyzer measures. The current is directly proportional to the rate at which oxygen reaches the cathode, which is ultimately proportional to the concentration of oxygen in the sample.

Because the rate of diffusion of oxygen through the membrane depends on temperature, sensor response must be corrected for temperature changes. A Pt 100 RTD in the sensor measures the temperature, and the analyzer automatically performs the correction.

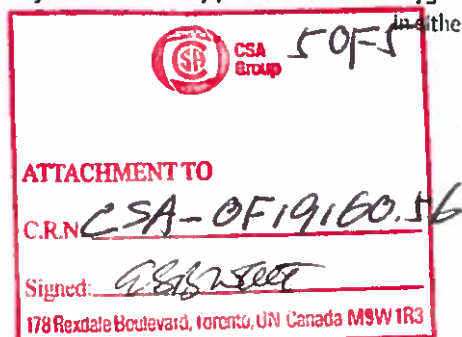
Calibration is easy. Simply expose the sensor to water-saturated air and press a button on the analyzer. The analyzer measures the barometric pressure and calculates the equilibrium solubility of atmospheric oxygen at the prevailing temperature and pressure. (5081-A, and 1066 analyzers require the user to manually enter the barometric pressure.)

Maintenance is fast and easy. Replacing the membrane requires no special tools or fixtures. Simply place a few drops of electrolyte solution in the membrane assembly, place it on the cathode, and screw the retainer in place. To replenish the electrolyte solution, unscrew the fill plug, add the reagent from a squeeze bottle, and replace the plug.

Pressure changes have little influence on sensor response. A flexible bladder in the sensor prevents distortion of the membrane by keeping the pressure inside the sensor equal to the sample pressure.

Several mounting configurations are possible. For aeration basins and tanks, use the handrail mounting. For measuring oxygen in pipes, use a sidestream sample and install the sensor in either the flow tee or the low flow cell.

ROSEMOUNT



MANAGEMENT SYSTEM CERTIFICATE

Certificate No:
CERT-09242-2006-AQ-HOU-ANAB

Initial certification date:
16, July, 2009

Valid:
13, July, 2015 - 13, July, 2018

This is to certify that the management system of

Emerson
Process Management
Rosemount Analytical, Inc.

2400 Barranca Parkway, Irvine, CA, 92606, USA

and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:

ISO 9001:2008

This certificate is valid for the following scope:

**Design and Manufacture of Analytical Process
Instrumentation**

Place and date:
Katy, TX, 26, June, 2015



For the issuing office:
DNV GL – Business Assurance
1400 Ravello Drive, Katy, TX, 77449-5164,
USA

A handwritten signature in black ink, appearing to read "John C Stefan".

John C Stefan
Management Representative

Certificate No: CERT-09242-2006-AQ-HOU-ANAB
Place and date: Katy, TX, 26, June, 2015

Appendix to Certificate

Emerson Process Management Rosemount Analytical, Inc.

Locations included in the certification are as follows:

Site Name	Site Address	Site Scope
Emerson Process Management Rosemount Analytical, Inc. HO	2400 Barranca Parkway, Irvine, CA 92606 USA	Management, Quality Assurance, Manufacturing, Inspection, Test, Material, Contract Administration, Engineering and Human Resources
Emerson Process Management Rosemount Analytical, Inc.	Circuito Del Progreso #27, Parque Industrial Progreso, 21190, Mexicali, MX, Mexico	Management, Quality Assurance, Manufacturing, Inspection, Test, Material, Contract Administration, Engineering and Human Resources

MANAGEMENT SYSTEM CERTIFICATE

Certificate No.:
CERT-09218-2005-AQ-HOU-ANAB Rev.2

Initial certification date:
January 01, 1992

Valid:
October 07, 2014 - October 07, 2017

This is to certify that the management system of

Rosemount, Inc.

6021 Innovation Boulevard, Shakopee, MN USA

and the sites as mentioned in the Appendix accompanying this Certificate

has been found to conform to Quality management system standard:

ISO 9001:2008


This certificate is valid for the following Scope:

Design, manufacture, testing and service of measurement and sensing solutions, including software.

Place and date:
Katy, TX, 24 February, 2015



For the issuing office:
DNV GL - Business Assurance
1400 Ravello Drive
Katy, TX 77449


John C. Stefan
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV GL - Business Assurance, 1400 Ravello Drive, Katy, TX 77449, Tel.: 281-396-1000, www.dnvglcert.com

Certificate No.: CERT-09218-2005-AQ-HOU-ANAB Rev.2

Place and date: Katy, TX, 24 February, 2015

Appendix I to Certificate

Locations included in the certification are as follows:

Site Name	Site Address	Site Scope
Rosemount, Inc. (HQ)	6021 Innovation Boulevard, Shakopee, MN 55379 USA	Management, Marketing, Engineering/Design, Manufacturing, Quality Systems, Measurement & Analysis, Product Test Lab, IT, Human Resources
Rosemount, Inc.	8200 Market Boulevard, Chanhassen, MN 55317 USA	Management, Marketing, Engineering/Design, Manufacturing, Quality Systems, Measurement & Analysis, Product Test Lab, IT, Human Resources
Rosemount, Inc.	12001 Technology Drive, Eden Prairie, MN 55344 USA	Manufacturing, IT, Engineering, Measurement & Analysis



March 2017

CRN – Canadian Registration Numbers - Saskatchewan

The Province of Saskatchewan participates with Quebec and the Canadian Standards Association (CSA Group) for the registrations of “Fittings”.

Per an agreement with CSA Group in April 1998, Saskatchewan recognizes registrations done by CSA Group and accepts such fittings for use in Saskatchewan.

The letters “CSA” are applied as a prefix to the CRN to indicate which “Fittings” have been registered in this manner. You should inform your clients of this additional marking requirement and that “Fittings” registered by CSA Group are accepted for use in Saskatchewan Canada.