

**Badger®  
READCENTER®**

**Reading Data Management  
System Software for  
Badger® ORION® Gateway**

**Installation &  
Operation Manual**



**IMPORTANT:** This manual contains important warnings and information.  
**READ AND KEEP FOR REFERENCE.**



**BadgerMeter, Inc.**

**RDC-IOM-03**  
P/N 62014-124 Rev. 1

7-09

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## Introduction

Welcome to the READCENTER Reading Data Management System Manual. The manual has two parts and an appendix at the end:

### Part I: Overall Operation

- Part I features basic information that will help you understand the overall operation of READCENTER in relation to reading primarily with the ORION Gateway.

### Part II: User Guide

- Part II is more detailed and is designed to be a technical reference.

### Appendix

- Refer to this section for additional product information.

## Manual Conventions

Items on READCENTER screens that you will be asked to select or choose by clicking a button, highlighting, checking a box, or another similar means will be bolded and capitalized in the manual's text. (Example: Click on the **Preview** button.)

Names of boxes, columns, fields, sections, etc. will appear in text as they appear on READCENTER screens - usually this means first letters will be capitalized. (Example: Network ID)

Options, messages, and special markings will appear in quotation marks, with first letters capitalized. (Example: "Define Schedules")

# Part I: Overall Operation

## Overview of READCENTER

Badger READCENTER is a reading data management software application that provides a central location for performing various meter reading tasks. It allows data sharing across meter reading solutions offered by Badger Meter. Supported reading technologies include Badger® ORION®, BadgerTouch®, TRACE® and manual meter reading.

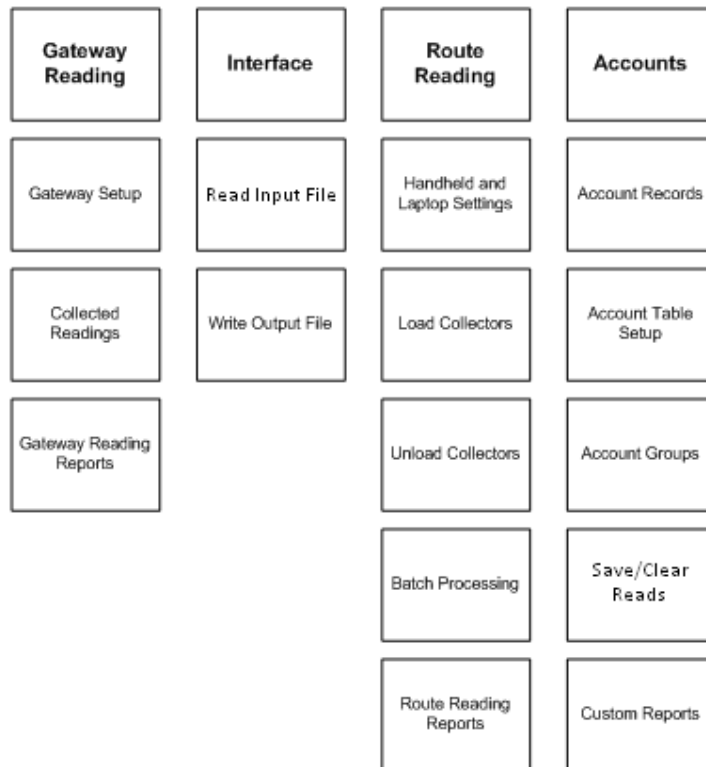
For Walk-by/Drive-by meter reading, READCENTER currently supports the following:

- ORION's mobile reading system
- Trimble® Ranger™
- Radix® Data Collector
- TRACE® Mini Mobile Interrogator (MMI)
- ReadAll® Data Collector

For Fixed and Hybrid Network meter reading, READCENTER currently supports the ORION Gateway receiver. Once a READCENTER license is purchased, additional modules of READCENTER can be purchased to support any of the reading methods listed above. Please contact your Badger Meter sales representative for more information.



The software is laid out in sections and grouped according to task. The functions in each of the sections are described in this manual.

### Client Function Layout

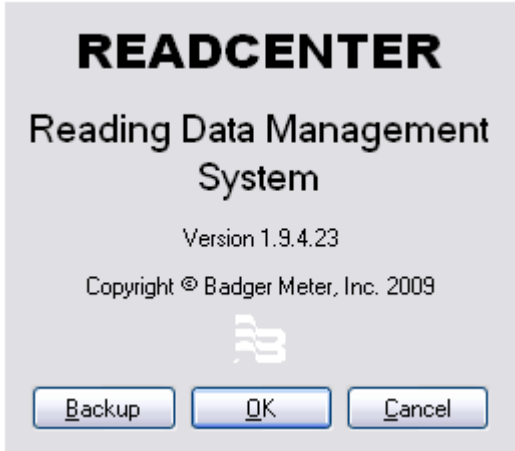


## Activation and Startup

### Program Activation

<p>Activate READCENTER from the Start Menu or Desktop Icon.</p>	
<p><u>Desktop Icon</u></p>  <p>Double-click the icon.</p>	<p><u>Start Menu</u></p>  <p>Select the path shown from the Start Menu.</p>

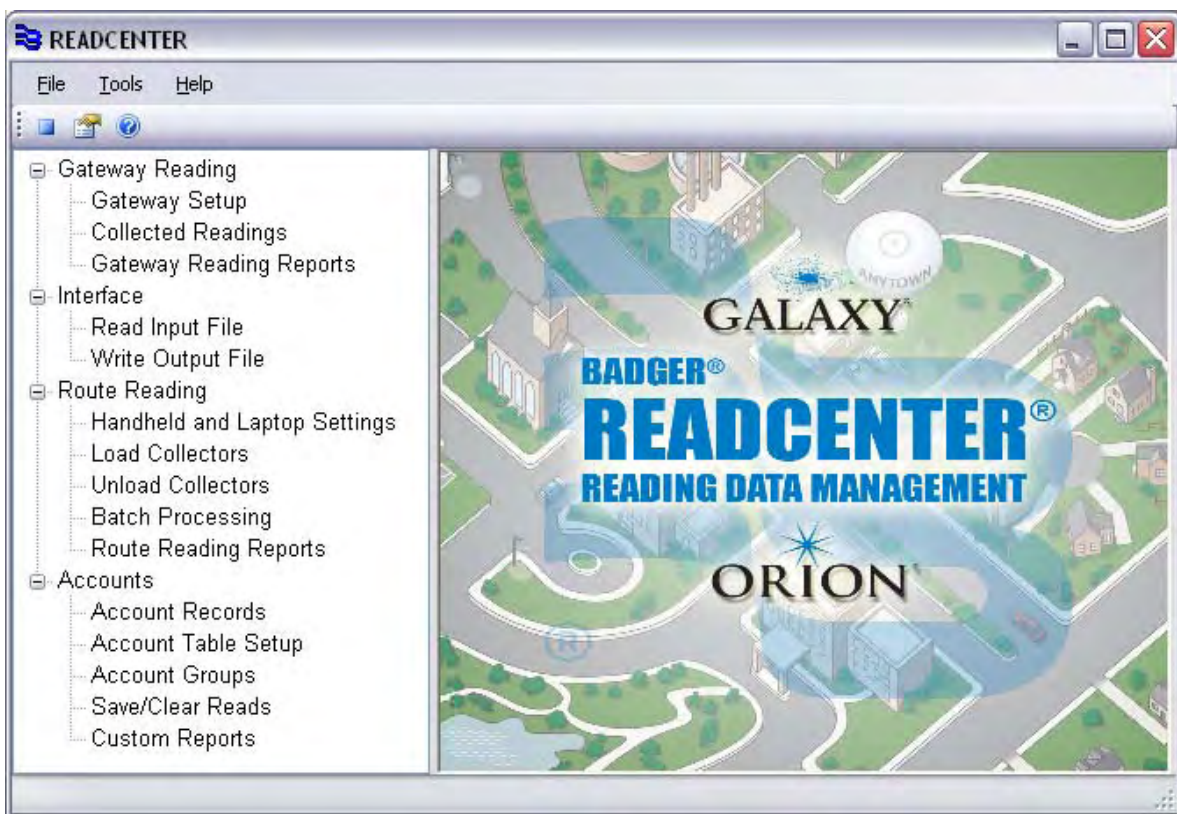
### Startup Screen

<p>When the application begins, the startup screen to the right will appear.</p> <p>The current software version number is listed below the title.</p> <p>Click <b>Backup</b> to make a copy of the current database files. Refer to Appendix Item #4 for details.</p> <p>Click <b>Cancel</b> to quit or click <b>OK</b> to proceed with activation of READCENTER.</p> <p>Clicking <b>OK</b> will bring up the main screen.</p>	
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## Main Screen

The READCENTER main screen is a multiple document interface (MDI) form that holds various function screens and has the following features:

- Menu bar and tool bar at the top provide access to configuration settings
- Status bar at the bottom displays messages related to active processes
- Main pane (right) displays the title and will contain the selected function screen
- Left pane displays the main menu with links to top-level functions



## The Meter Reading Process

### Structure

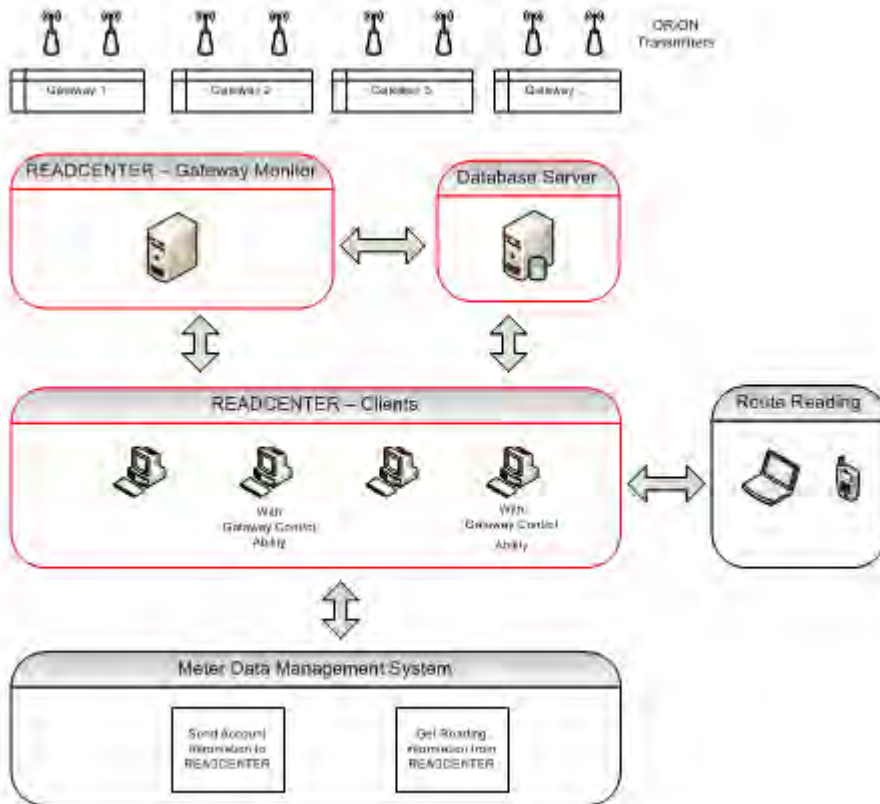
READCENTER application software for Gateway reading has three parts that can run on one computer or separate computers:

- A server (Monitor) requests meter readings from Gateways.
- A client (Control) defines reading schedules and runs reports.
- A database server stores information.

Another part of the system is the one in place at your organization to maintain end customer data, such as names, addresses, serial numbers, etc. This can be a Meter Data Management System, Utility Billing System, Customer Information System, or other type of system. Throughout the remainder of the manual, these applications will be referred to as the Meter Data Management System or MDMS.

### Diagram

Here is a diagram showing the three components and how they interact with other parts of the system.



## **Operation**

To start the meter reading process, Gateway setup information is entered and reading schedules are defined. From that point on meter readings are automatically collected and stored in the database.

As transmitters are installed, files with account information are sent as needed by the Meter Data Management System (MDMS) for import into READCENTER. READCENTER links records to stored meter readings by the transmitter serial number. This can also be done periodically to synchronize READCENTER with current account information from the MDMS reflecting changes that occur when people move into or out of properties or as meters and reading technology are installed or replaced.

Synchronization between the MDMS and READCENTER offers two additional advantages: First, information only needs to be updated in one place, the MDMS; and second, once READCENTER is set up and configured, there is little need for manual data maintenance.

## System Outline

The software is laid out in sections and grouped according to task. The four main sections and functions within them are briefly outlined here.

**Gateway Reading:** Contains functions used to perform the gateway reading process.

- **Gateway Setup:** Define the Gateway IP address and schedule to begin the meter reading collection.
- **Collected Readings:** View meter readings by Gateway collection time and see meter reading data for each transmitter heard by the Gateway at that time within a 24 hour period.
- **Meter Reading Reports:** View meter readings by module serial # to show the reading history, the latest read, and use within a specified time period, tamper or leak conditions, and meters with no use.

**Interface:** Allows association of customer information to meter readings and provides information for billing purposes.

- **Read Input File:** Put account information into READCENTER from a file created by an outside source. The information may include new accounts or changes to existing accounts. It may also include the previous meter reading and/or high and low limit ranges.
- **Write Output File:** Send meter readings collected from READCENTER to a file.

**Route Reading:** Contains functions used to perform the route reading process if this is to be done in addition to Gateway reading.

- **Handheld and Laptop Settings:** Define code tables, display fields and other settings for passing to collection devices.
- **Load Collectors:** Send account information from READCENTER to the collection device for the purpose of gathering meter readings.
- **Unload Collectors:** Retrieve meter reading data from the collection device and store the information in READCENTER.
- **Batch Processing:** Load and unload collection devices automatically one after the other rather than individually.
- **Route Reading Reports:** Pre-defined standard reports to view or print.

**Accounts:** Provides ways to view, search and group accounts.

- **Account Records:** View all of the information available for each account. You can scroll through account records and search for specific records based on the account number, name, address, meter serial #, etc. Viewing and printing the meter reading history can also be done here. Notes can be optionally entered for individual accounts and saved for future reference.

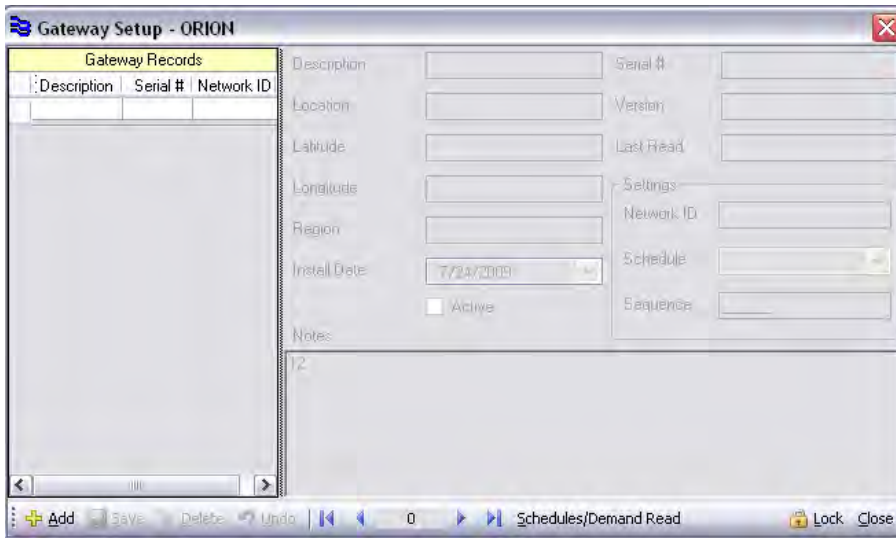
- **Account Table Setup:** Define lists of information to associate with individual account records such as City, State and Zip Code.
- **Account Groups:** Define more detailed groups of accounts for use in loading collection devices; running reports; and performing other tasks related to meter reading.
- **Save/Clear Reads:** Clear current readings as shown on the Account Records screen.
- **Custom Reports:** Create reports using data fields of your choosing from the Account Records screen. The report definitions can be saved and used at any time.

# Part II: User Guide

## Gateway Reading

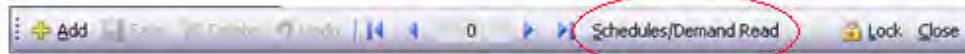
### Gateway Setup

The **Gateway Setup** function allows you to define the Network ID and Schedule for Gateways, along with other items for information purposes. This must be done in order to receive meter readings from Gateways. The following screen is displayed initially.



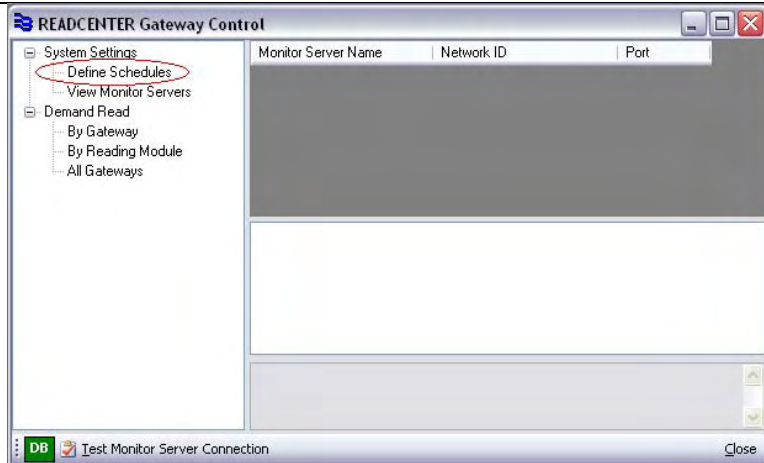
### Schedule Setup

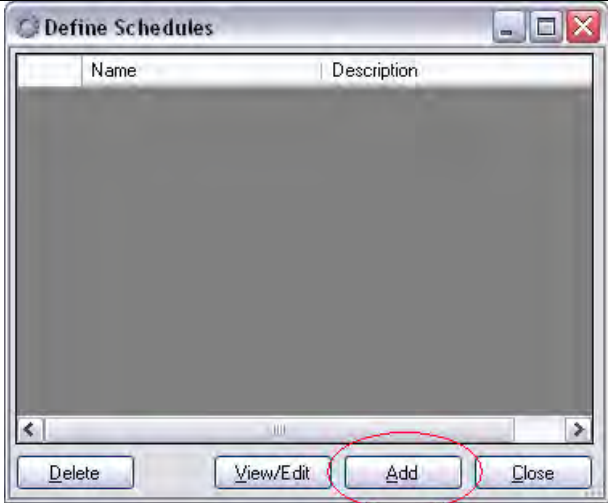
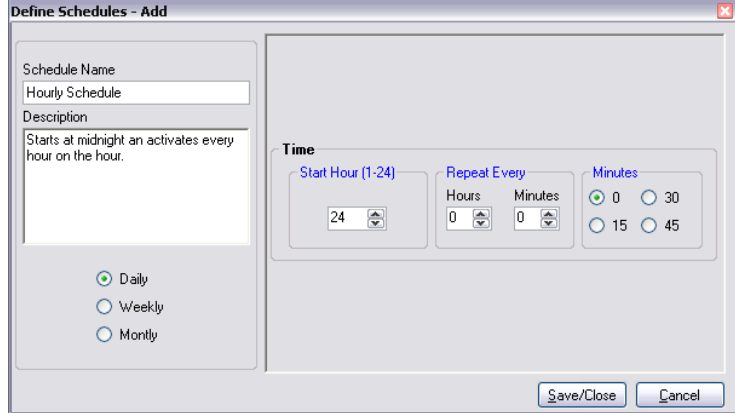
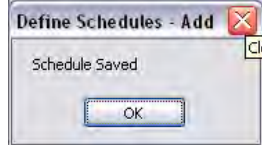
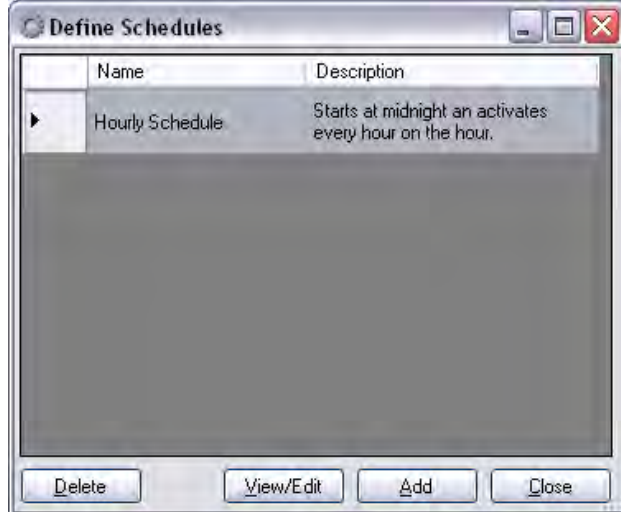
To begin with, a schedule must be defined that activates the request to obtain meter readings from Gateways. Click on **Schedules/Demand Read** in the toolbar.



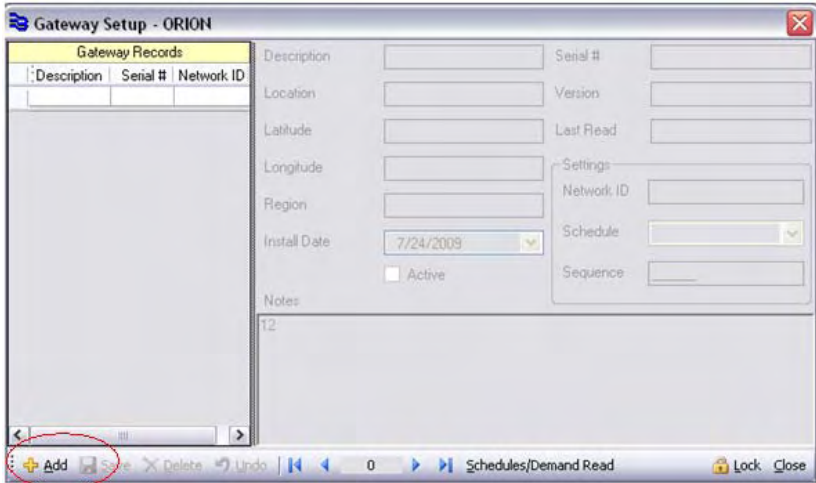
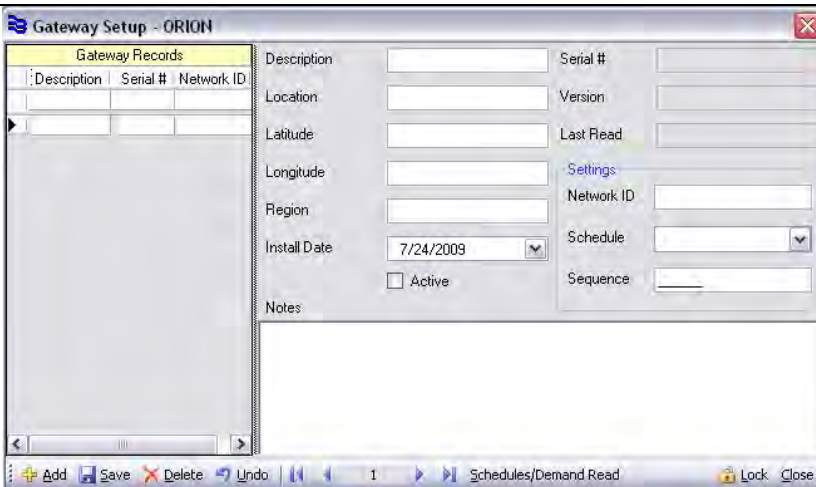
This brings up the READCENTER Gateway Control module.

Select "Define Schedules" from the list of available operations.



<p>A table of defined schedules is displayed.</p> <p>Click the <b>Add</b> button.</p>	
<p>Several scheduling options are available. In this example we will define one that activates every hour on the hour.</p> <p>Enter the information as shown here and click <b>Save/Close</b> when finished.</p>	
<p>A message displays to confirm. Click <b>OK</b>.</p>	
<p>The new schedule is now listed in the table.</p> <p>Click <b>Close</b> on the Define Schedules window to return to the Gateway Control screen.</p> <p>Click <b>Close</b> on the Gateway Control window to return to the Gateway Setup screen.</p>	

## Gateway Definition

<p>Click the <b>Add</b> button in the tool bar to add a Gateway record.</p>	
<p>A new blank Gateway record will be added.</p> <p>Gateways defined are listed in a table on the left of the screen.</p> <p>As you point to each Gateway in the table, settings for the Gateway are shown on the right of the screen.</p>	

### Required Information:

- **Network ID:** Enter the Network ID of the Gateway. This may be an IP Address or URL. The Network ID is also set in the Gateway through a configuration process done by your Network Administrator. The Network ID configured in the Gateway and entered in READCENTER must match.
- **Schedule:** Select a schedule that defines when readings will be requested from the Gateway. All Gateways can use the same schedule if desired. When the scheduled time occurs, readings will be requested from all Gateways assigned to the schedule.
- **Active:** Check this box if readings are to be requested from the Gateway. The box can be unchecked to temporarily disable the scheduled read request.

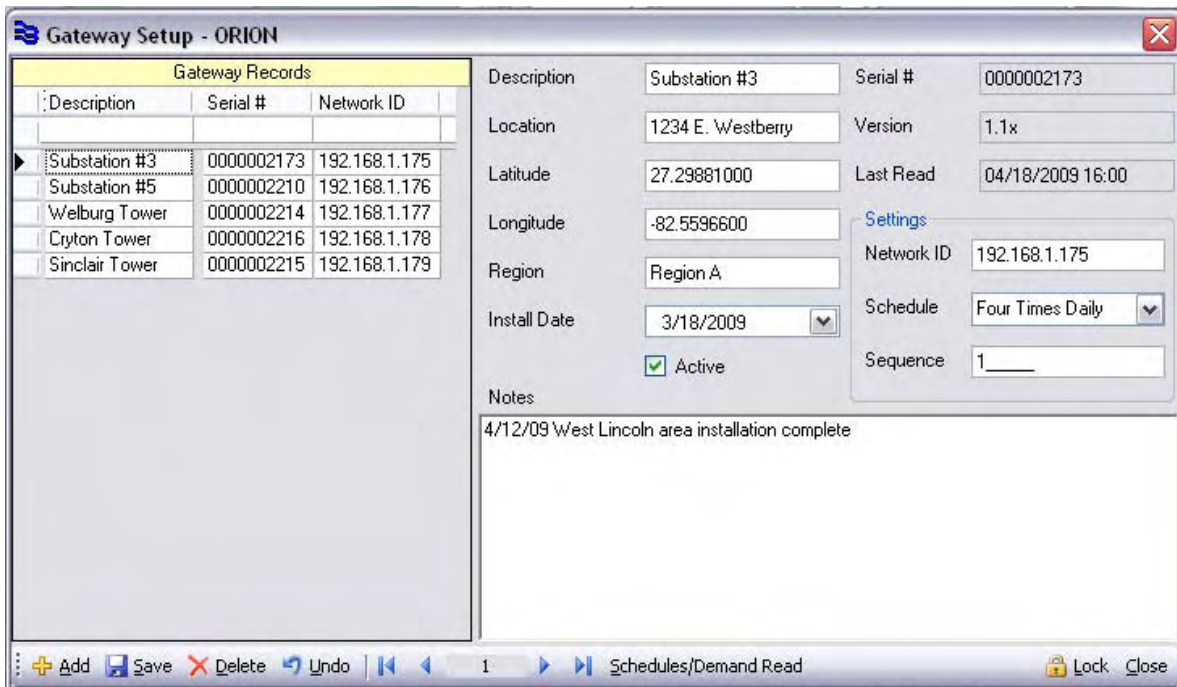
Optional Information:

- **Description:** Any text to associate with the Gateway.
- **Location:** The address or street intersection where the Gateway is located.
- **Latitude/Longitude:** Geo-code information to use for future mapping reports.
- **Region:** Information that groups Gateways for identification purposes. This may be used for future reporting.
- **Install Date:** The date the Gateway was installed and put in use.
- **Sequence:** The order to show Gateways in the table.

Automatic Information:

- **Serial #:** The serial number of the Gateway is reported when readings are requested, and it is entered here automatically by READCENTER.
- **Version:** The firmware version of the Gateway is reported when readings are requested, and it is entered here automatically by READCENTER.
- **Last Read:** Each time the Gateway is successfully read, the date is automatically modified here.

Here is a sample screen with information filled in:



## Collected Readings

The **Collected Readings** function shows information by Gateway collection time.

Collections				Readings					
Date	Gateway Serial #	Total	Network ID	Module Serial #	Leak	Tamper	Meter Type	Read	Date
4-18-2009 04:00 PM	0000002215	230	192.168.1.179	0079830692	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	999997	4-18-2009 04:00 PM
4-18-2009 04:00 PM	0000002216	230	192.168.1.178	0079896709	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	2202	4-18-2009 04:00 PM
4-18-2009 04:00 PM	0000002214	230	192.168.1.177	0080000201	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	8	4-18-2009 04:00 PM
4-18-2009 04:00 PM	0000002173	143	192.168.1.175	0080000307	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	999999	4-18-2009 03:59 PM
4-18-2009 04:00 PM	0000002210	230	192.168.1.176	0080081145	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	6220	4-18-2009 03:59 PM
4-18-2009 03:00 PM	0000002215	230	192.168.1.179	0080093882	<input type="checkbox"/>	<input type="checkbox"/>	1	984423	4-18-2009 04:00 PM
4-18-2009 03:00 PM	0000002216	230	192.168.1.178	0080156420	<input type="checkbox"/>	<input type="checkbox"/>	2	3208	4-18-2009 04:00 PM
4-18-2009 03:00 PM	0000002214	230	192.168.1.177	0080156423	<input type="checkbox"/>	<input type="checkbox"/>	2	520819	4-18-2009 04:00 PM
4-18-2009 03:00 PM	0000002210	230	192.168.1.176	0080156426	<input type="checkbox"/>	<input type="checkbox"/>	2	80	4-18-2009 03:59 PM
4-18-2009 03:00 PM	0000002173	140	192.168.1.175	0080156452	<input type="checkbox"/>	<input type="checkbox"/>	2	221960	4-18-2009 03:59 PM
4-18-2009 02:00 PM	0000002215	230	192.168.1.179	0080156453	<input type="checkbox"/>	<input type="checkbox"/>	2	96880	4-18-2009 03:59 PM
4-18-2009 02:00 PM	0000002216	230	192.168.1.178	0080156466	<input type="checkbox"/>	<input type="checkbox"/>	2	448516	4-18-2009 03:59 PM
4-18-2009 02:00 PM	0000002214	230	192.168.1.177	0080156467	<input type="checkbox"/>	<input type="checkbox"/>	2	223158	4-18-2009 03:59 PM
4-18-2009 02:00 PM	0000002210	230	192.168.1.176	0080156468	<input type="checkbox"/>	<input type="checkbox"/>	2	65	4-18-2009 03:59 PM
4-18-2009 02:00 PM	0000002173	137	192.168.1.175	0080156471	<input type="checkbox"/>	<input type="checkbox"/>	2	10	4-18-2009 03:59 PM
4-18-2009 01:00 PM	0000002215	230	192.168.1.179	0080156474	<input type="checkbox"/>	<input type="checkbox"/>	2	923629	4-18-2009 03:59 PM
4-18-2009 01:00 PM	0000002216	230	192.168.1.178	0080166806	<input type="checkbox"/>	<input type="checkbox"/>	0	67	4-18-2009 04:00 PM
4-18-2009 01:00 PM	0000002214	230	192.168.1.177	0080174727	<input type="checkbox"/>	<input type="checkbox"/>	6	919594	4-18-2009 03:59 PM
4-18-2009 01:00 PM	0000002210	230	192.168.1.176	0080174732	<input type="checkbox"/>	<input type="checkbox"/>	2	45465	4-18-2009 03:59 PM
4-18-2009 01:00 PM	0000002173	166	192.168.1.175	0080174741	<input type="checkbox"/>	<input type="checkbox"/>	2	1000115	4-18-2009 04:00 PM
4-18-2009 12:00 PM	0000002215	230	192.168.1.179	0080174751	<input type="checkbox"/>	<input type="checkbox"/>	2	581094	4-18-2009 03:59 PM
4-18-2009 12:00 PM	0000002216	230	192.168.1.178	0080174757	<input type="checkbox"/>	<input type="checkbox"/>	2	1	4-18-2009 04:00 PM
4-18-2009 12:00 PM	0000002214	230	192.168.1.177	0080174769	<input type="checkbox"/>	<input type="checkbox"/>	2	443755	4-18-2009 03:59 PM
4-18-2009 12:00 PM	0000002210	230	192.168.1.176	0080174780	<input type="checkbox"/>	<input type="checkbox"/>	6	509905	4-18-2009 03:59 PM

The left side of the screen shows a table with the Gateway Collections. When a Collection is selected, the meter readings stored in the Gateway at that time are displayed on the right of the screen. Use the **Time Period** drop down box in the bottom tool bar to change the time period viewed if desired.

## Gateway Reading Reports

The **Gateway Reading Reports** function provides the ability to view meter readings by module serial # and to view readings that match various criteria as shown below. A report or graph can be displayed or printed.

Select a report from the list.

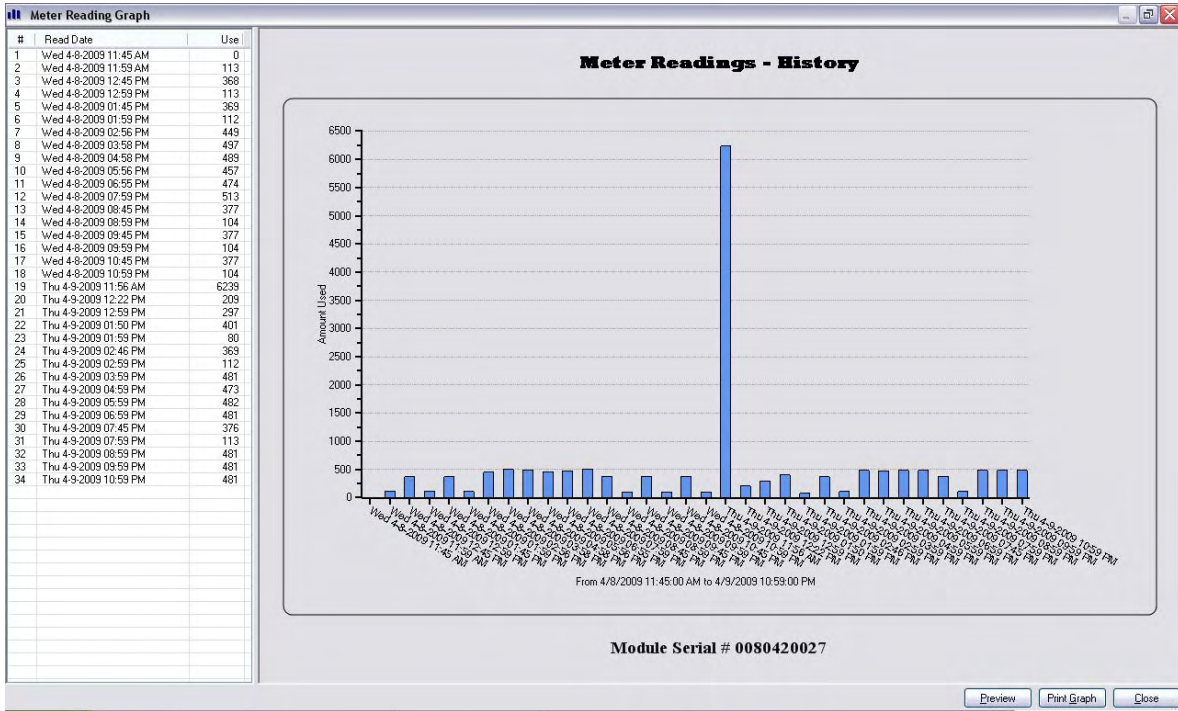
In the Options box, you can specify a time period to cover using the **Start** and **Period** entries.

Click **Get Data** to run the report.

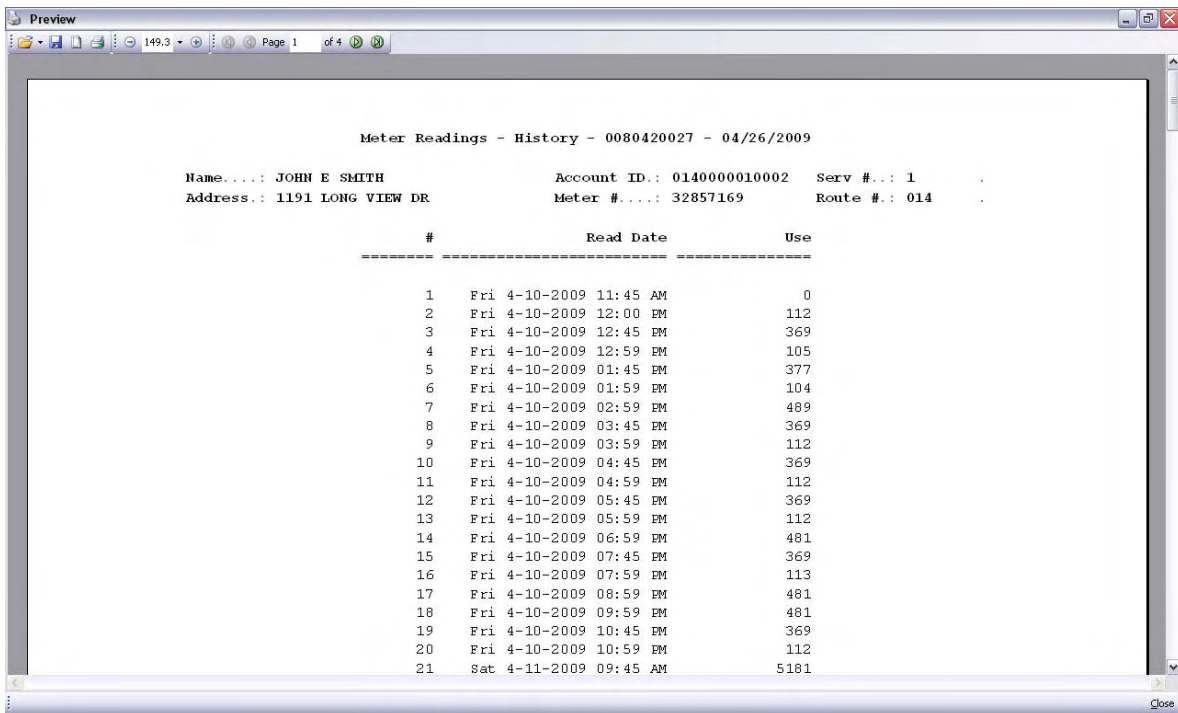
Here is a History report example covering reads over a one week period.

To view a graph of the readings, select an item from the Reading Modules table, and click the **Graph** button in the bottom toolbar.

The Meter Reading Graph screen displays.



- Click the **Print Graph** button in the bottom tool bar to send the graph to the default printer.
- Click the **Preview** button to show a report of the Customer and usage information.



**Note:** Please refer to Badger's READCENTER manual RDC-IOM-02 for detailed instructions related to functions listed on this page.

## Interface

Allows association of customer information to meter readings and provides information for billing purposes.

- **Read Input File:** Put account information into READCENTER from a file created by an outside source. The information may include new accounts or changes to existing accounts. It may also include the previous meter reading and/or high and low limit ranges.
- **Write Output File:** Send meter readings collected from READCENTER to a file.

## Route Reading

Contains functions used to perform the route reading process if this is to be done in addition to Gateway reading.

- **Handheld and Laptop Settings:** Define code tables, display fields and other settings for passing to collection devices.
- **Load Collectors:** Send account information from READCENTER to the collection device for the purpose of gathering meter readings.
- **Unload Collectors:** Retrieve meter reading data from the collection device and store the information in READCENTER.
- **Batch Processing:** Load and unload collection devices automatically one after the other rather than individually.
- **Route Reading Reports:** Pre-defined standard reports to view or print.

## Accounts

Provides ways to view, search and group accounts.

- **Account Records:** View all of the information available for each account. You can scroll through account records and search for specific records based on the account number, name, address, meter serial #, etc. Viewing and printing the meter reading history can also be done here. Notes can be optionally entered for individual accounts and saved for future reference.
- **Account Table Setup:** Define lists of information to associate with individual account records such as City, State and Zip Code.
- **Account Groups:** Define more detailed groups of accounts for use in loading collection devices; running reports; and performing other tasks related to meter reading.
- **Save/Clear Reads:** Clear current readings as shown on the Account Records screen.
- **Custom Reports:** Create reports using data fields of your choosing from the Account Records screen. The report definitions can be saved and used at any time.

# Appendix

## 1. System Requirements

**Note:** The specifications shown are to be used as a guideline. Some items relate more to requirements of the Operating System rather than the READCENTER application, and they are subject to change. Follow any Operating System vendor recommendations that exceed what is listed here.


- Computer Specifications
  - Processor: 1 GHz or higher 32 bit (x86)
  - RAM: 1 GB or higher available
  - Hard Disk: 120 GB recommended with at least 20 GB available
  - Ports: 4 USB Ports available
  - Monitor: 17 Inch or larger (1280x768 resolution minimum)
  - Printer: Ink Jet or Laser, Networked or Local
  - Drives: DVD-ROM
- Operating Systems
  - Windows® 2000 Professional SP4 or higher
  - Windows XP Professional SP2 or higher
  - Windows 2003 Server–Standard or Enterprise SP1 or higher
  - Windows Vista®–Business, Ultimate, or Enterprise Editions SP1 or higher<sup>1</sup>
- Data Sources
  - SQL Server 2005 Express will be included with the application.
  - SQL Server 2005 Enterprise may be used if already existing. (End-user supported)
- Multi-User Consideration
  - The software can run on a server for multi-user operation or can be operated from a single PC.
  - Twenty concurrent users are supported in a multi-user installation.
- Optional
  - To ensure uninterrupted power, the computer may be plugged into a backup power supply.
  - A power console with at least 6 outlets and surge protection is recommended.
- Backup Consideration
  - A means of backing up data must be provided. Options are the local network, a USB memory device, Zip Drive, Read/Write CDRom, or another type of removable media.
- Support Consideration
  - For Technical Support, a WebEx™ Internet connection is recommended.


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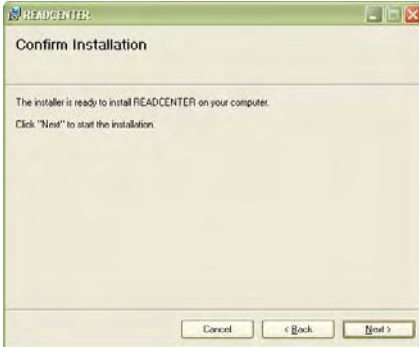
<sup>1</sup> Other Vista requirements may exist; always follow recommendations that exceed this specification.

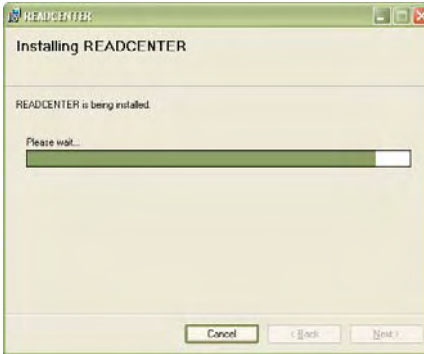
## 2. Installation

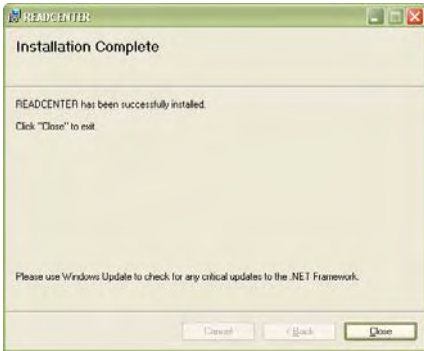
Insert the READCENTER installation CD; the Setup Wizard should appear automatically. If it does not, run Setup.exe from the CD. For optimal performance, accept all default settings unless specifically instructed by a Badger Meter support specialist or trainer to do otherwise. The following screens will appear in sequence.

- 

1. Welcome to the READCENTER Setup Wizard
- 

2. Select Installation Folder
- 

3. Confirm Installation
- 

4. Installing READCENTER
- 

5. Installation Complete

## 3. Codes

### Module Types or Registration Types

- C - Manual
- Z - ORION
- R - RAMAR
- D - Datamatic
- P - TRACE
- D - Touch

### Read Types

- D - Unread
- R - Regular
- H - High
- L - Low
- r - Regular with Inquiry
- h - High with Inquiry
- l - Low with Inquiry

### Read Methods

- D - Unread
- d - Manual
- D - Interrogated

### Exceptions

- T - Tamper
- L - Leak
- F - Reverse Flow
- U - No Usage
- t - Tamper/Leak
- B - No Reply
- G - Rollover
- E - Encoder Error

**Read Resolution – Water GALAXY® and ORION®**

<u>Code</u>	<u>Description</u>
01	RTR TC = 10 Gallon
02	RTR TC = 100 Gallon
03	RTR TC = 1000 Gallon
04	RTR TC = 10000 Gallon
05	RTR TC = 1 Cubic Foot
06	RTR TC = 10 Cubic Foot
07	RTR TC = 100 Cubic Foot
08	RTR TC = 1000 Cubic Foot
09	RTR TC = .01 Cubic Meter
10	RTR TC = .1 Cubic Meter
11	RTR TC = 1 Cubic Meter
12	RTR TC = 10 Cubic Meter
13	RTR TC = 100 Cubic Meter
48	ADE - 6 - TC = 10 Gallon
49	ADE - 6 - TC = 100 Gallon
50	ADE - 6 - TC = 1000 Gallon
51	ADE - 6 - TC = 10000 Gallon
65	ADE - 6 - TC = 1 Cubic Foot
66	ADE - 6 - TC = 10 Cubic Foot
67	ADE - 6 - TC = 100 Cubic Foot
68	ADE - 6 - TC = 1000 Cubic Foot
95	ADE - 6 - TC = .01 Cubic Meter
96	ADE - 6 - TC = .1 Cubic Meter
97	ADE - 6 - TC = 1 Cubic Meter
98	ADE - 6 - TC = 10 Cubic Meter
99	ADE - 6 - TC = 100 Cubic Meter
-1	ADE - 4 or 5

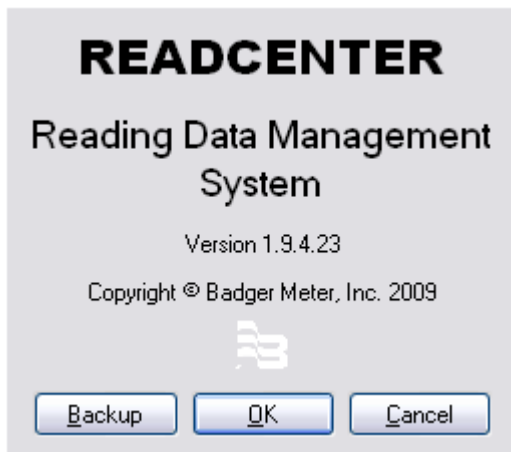
**Read Resolution – Gas ORION**

Type	Code	Description	Multiplier	Dials	Sub Counts	Devide By to Remove Sub Counts
Cubic Foot Integral	73	Gas ORION - 1 CuFt Int (10:5)1	1	5	1	10
	45	Gas ORION - 1 CuFt Int (100:4)1	1	4	2	100
	70	Gas ORION - 2 CuFt Int (10:5)1	1	5	1	10
	46	Gas ORION - 2 CuFt Int (100:4)1	1	4	2	100
	71	Gas ORION - 5 CuFt Int (100:5)1	1	5	2	100
	74	Gas ORION - 5 CuFt Int (100:6)10	10	6	1	10
	75	Gas ORION - 10 CuFt Int (100:5)1	1	5	2	100
	79	Gas ORION - 10 CuFt Int (100:5)10	10	5	1	10
	76	Gas ORION - 10 CuFt Int (100:6)10	10	6	1	10
	78	Gas ORION - 50 CuFt Int (100:5)10	10	5	1	10
	72	Gas ORION - 100 CuFt Int (100:5)100	100	5	0	1
	77	Gas ORION - 100 CuFt Int (100:6)10	10	6	1	10
	85	Gas ORION - 100 CuFt Int (100:6)100	100	6	0	1
	83	Gas ORION - 500 CuFt Int (100:6)100	100	6	0	1
	81	Gas ORION - 1000 CuFt Int (100:6)100	100	6	0	1
Cubic Foot Remote	47	Gas ORION - 1 CuFt Rem (100:4)1	1	4	2	100
	48	Gas ORION - 2 CuFt Rem (100:4)1	1	4	2	100
	80	Gas ORION - 5 CuFt Rem (100:5)1	1	5	2	100
	49	Gas ORION - 5 CuFt Rem (100:5)10	10	5	1	10
	50	Gas ORION - 5 CuFt Rem (100:6)10	10	6	1	10
	69	Gas ORION - 10 CuFt Rem (10:5)10	10	5	0	1
	51	Gas ORION - 10 CuFt Rem (100:5)10	10	5	1	10
	52	Gas ORION - 10 CuFt Rem (100:6)10	10	6	1	10
	53	Gas ORION - 20 CuFt Rem (100:5)10	10	5	1	10
	54	Gas ORION - 20 CuFt Rem (100:6)10	10	6	1	10
	55	Gas ORION - 25 CuFt Rem (100:5)10	10	5	1	10
	56	Gas ORION - 25 CuFt Rem (100:6)10	10	6	1	10
	57	Gas ORION - 40 CuFt Rem (100:5)10	10	5	1	10
	58	Gas ORION - 40 CuFt Rem (100:6)10	10	6	1	10
	59	Gas ORION - 50 CuFt Rem (100:5)10	10	5	1	10
	60	Gas ORION - 50 CuFt Rem (100:6)10	10	6	1	10
	89	Gas ORION - 100 CuFt Rem (100:6)100	100	6	0	1
	61	Gas ORION - 100 CuFt Rem (1000:5)100	100	5	1	10
	62	Gas ORION - 100 CuFt Rem (1000:6)100	100	6	1	10
	84	Gas ORION - 250 CuFt Rem (100:6)100	100	6	0	1
	82	Gas ORION - 500 CuFt Rem (100:6)100	100	6	0	1
	63	Gas ORION - 500 CuFt Rem (1000:5)100	100	5	1	10
64	Gas ORION - 500 CuFt Rem (1000:6)100	100	6	1	10	
65	Gas ORION - 1000 CuFt Rem (1000:5)100	100	5	1	10	
87	Gas ORION - 1000 CuFt Rem (1000:5)1000	1000	5	0	1	
66	Gas ORION - 1000 CuFt Rem (1000:6)100	100	6	1	10	
88	Gas ORION - 1000 CuFt Rem (1000:6)1000	1000	6	0	1	
Cubic Meter Remote	67	Gas ORION - .05 CuMtr Rem (1:5).1	.1	5	1	10
	68	Gas ORION - .1 CuMtr Rem (1:5).1	.1	5	1	10

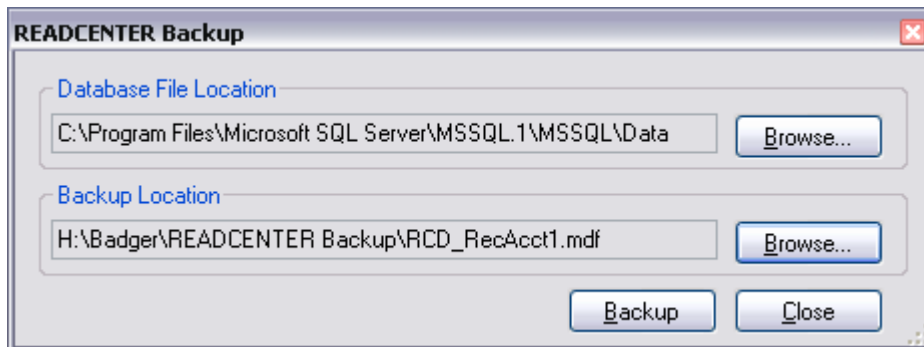
## 4. Backup Operation

**Note:** If READCENTER data is stored by SQL Server Standard or Enterprise, backups are to be handled in accordance with end user corporate policies.

A means of backing up the READCENTER SQL Server Express database files is available from the login screen. All users must have READCENTER closed when this is done or the operation will not complete successfully.



Click the **Backup** button to bring up a screen to enter the database file and backup locations.



The folder used for the Backup Location must exist prior to performing the backup. Click the **Browse** button for both the Database File Location and Backup Location. Click **Backup** to copy files from one location to the other.

In the event that database files must be restored, please contact Badger Meter Technical Support for assistance.

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