Attachment A

TRANE

On file

Ingersoll Rand, member
DJSI, World and North America 2012

Federal Supply Service
U.S. General Services Administration

Ingersoll Rand

TRANE

This Schedule Contract Price List includes Modifications through No. PO-0126, effective September 17, 2013.

Ingersoll Rand

SIN	Description
246-42(2)	Energy Management Functions and Building Automation Systems
246-1000	Ancillary Services
246-51	Installation Requiring Construction
246-52	Facility Management Services (Software and Training Services, Educational Literature and Materials)
246-53	Leasing (Alternative Financing Method, ESPC Projects, and Straight Leasing) and Rental of Air Conditioning Units

Lowest Priced Model No.	Description
$6	Air flow sampling probe

SIN 246-42(2)	$150,000 per order.
SIN 246-1000	$200,000 per order
SIN 246-51	$200,000 per order
SIN 246-52	$200,000 per order
SIN 246-53	$200,000 per order

Pursuant to FAR 8.405-1, The Maximum Order established in Schedule contracts is the threshold at which it is advantageous for an ordering office to seek further concessions from a Contractor. The Contractor may accept an order of any amount including one exceeding the maximum order threshold. For an order in an amount above the maximum order threshold for the specific SIN in the contract, a Government purchaser should seek further concessions from the Contractor. When presented with such a request, the Contractor may grant additional concessions, offer the product at the existing contract price, or refuse the order

$100.00 per order.

The scope of the contract is the 48 contiguous states, Alaska, Hawaii, Puerto Rico, Washington, D.C., and U.S. territories for products, software, and services under SIN 246-42(2), SIN 246-1000, SIN 246-51, SIN 246-52, and SIN 246-53

Name of Manufacturer	Production Point
Trane U.S. Inc.	3600 Pammel Creek Road LaCrosse LaCrosse County Wisconsin 54601-7599 Phone: 608-787-2000 Phone (Marketing):608-787-3907 Fax: 608-787-2204 www.trane.com
Trane U.S. Inc	4833 White Bear Parkway St. Paul Ramsey County Minnesota 55110 Phone. 1-800-877-1327 Fax. 651-407-4197 E-mail: tranefssconlact@trane.com www.trane.com
Trane U.S. Inc	C.D.S. 3600 Pammel Creek Road LaCrosse LaCrosse County Wisconsin 54601-7511 Phone 608-787-3926 Fax 608-787-3005 E-mail cdshelp@trane.com www.trane.com
Trane U.S. Inc	101 William White Boulevard Pueblo Pueblo County Colorado 81001-4800 Phone 1-888-244-5537 Fax 719-585-3896 www.trane.com
Trane U.S. Inc	2701 Wilma Rudolph Blvd Clarksville Montgomery County Tennessee 37040-5846 Phone 931-648-5945

TRANE

Fax: 931-648-5901
www.trane.com

Trane U S. Inc
182 Cotton Belt Parkway
McGregor
McLennan County
Texas 76657-3411
Phone: 254-299-6300
Fax: 254-299-6671
www.trane.com

Trane U.S. Inc
Inland Marketing Services
3030 Airport Road
La Crosse
La Crosse County
Wisconsin 54603-1251
Phone: 608-787-3926
Fax: 608-783-4705
www.trane.com

Trane U.S. Inc.
4500 Morris Field Drive
Charlotte
Mecklenberg County
North Carolina 28208
Phone: 800-755-5115
Fax: 704-398-4681
www.trane.com

Trane U S Inc
1515 Mercer Road
Lexington
Lexington-Fayette County
Kentucky 40511
Phone: 800-228-1666
Fax 859-288-2618
www.trane.com

Trane U.S. Inc
7610 Industrial Highway
Macon
Bibb County
Georgia 31216
Phone 478-781-6495
Fax 478-784-4239
www.trane.com

Trane U S Inc
Lynn Haven Unit
200 Aberdeen Loop
Panama City
Bay County
Florida 32405
Phone. 850-271-6030
Fax: 850-271-6040
www.trane.com

Trane U.S Inc
400 Killian Road
Columbia
Lexington County
South Carolina 29203
Phone 1-877-788-7263
www.trane.com

All prices contained are inclusive of negotiated discounts. See Government Price List for net prices Net prices do not include surcharge for expedited and overnight delivery See Item 11b.

The Quantity/Volume Discount is the same as the discount extended to commercial customers. The discount is product code dependent and may have multiple discount levels based on dollar amount that is automatically calculated by Trane's ordering system

Prompt payment is ½% 10 days Net 30 days from date of invoice or date of acceptance, whichever is later. Credit card transactions are excluded.

VISA and MasterCard credit cards are accepted for orders with the Contractor. These credit card orders can be placed with the following location:

Trane U.S. Inc
3600 Pammel Creek Road
LaCrosse, WI 54601-7599
Phone: 608-787-2629
Fax 651-407-4358

Government Commercial Credit Cards will be accepted for all purchase, both above and below the micropurchase threshold of $3000

None

The Contractor shall deliver to destination within the number of calendar days after receipt of order (ARO), as set forth below

Special Item Number	Delivery Time (Days ARO)
246-42(2)	See below
246-52	28 Days

Standard delivery time may vary from 28 to 126 days ARO depending upon the products being ordered under SIN 246-42(2).

Time of delivery of services under SIN 246-1000, SIN 246-51 or SIN 246-53 shall be a part of the negotiated Statement of Work between the Contractor and the ordering office.

Quicker delivery times than those set forth in paragraph (a) above are available from the Contractor based on the availability of product inventory. Delivery times of 1-15 days after receipt of order (ARO) are available, as negotiated between the Ordering Office and the Contractor. The Contractor adds a delivery fee of 15% of the purchase price for delivery within one week.

When schedule customers require overnight or 2-day delivery, agencies are encouraged to contact the Contractor or Authorized Government Resellers for the purpose of obtaining accelerated delivery. The Contractor provides overnight and 2-day delivery times subject to the availability of product inventory. The Contractor shall pay for shipment, with freight prepaid and invoiced. The Contractor adds a delivery fee of 20% of the purchase price for overnight delivery. Authorization must be included on the Government order for products

When the Federal Supply Schedule contract delivery period does not meet the bona fide urgent delivery requirements of an ordering agency agencies are encouraged if time permits to contact the Contractor for the purpose of obtaining accelerated delivery The Contractor shall reply to the inquiry within 3 workdays after receipt (Telephonic replies shall be confirmed by the Contractor in writing) If the Contractor offers an accelerated delivery time acceptable to the ordering agency any order(s) placed pursuant to the agreed upon accelerated delivery time frame shall be delivered within this shorter delivery time and in accordance with all other terms and conditions of the contract

For locations in the 48 contiguous States Alaska Hawaii, Puerto Rico and Washington D C shipment shall be F O.B destination with title passing to the Government upon delivery by the carrier freight prepaid and invoiced For shipments with a final destination in the U.S. territories. shipment shall be FOB destination, with freight prepaid and allowed. to the nearest point of embarkation. Delivery costs to U.S. territories shall be negotiated between the Contractor and each agency placing an order

The Contractor shall be responsible for all expenses connected with the return of defective products or parts. The government shall be responsible for expenses connected with all other returns. A restocking fee of 15% of the purchase price shall be charged to the Government for the return of non-defective products or parts.

See "Trane Sales Offices" section for listing of ordering addresses.

For supplies and services. the ordering procedures, information on Blanket Purchase Agreements (BPA's), and a sample BPA can be found at the GSA/FSS Schedule homepage (www.fss.gsa.gov/schedules).

Payment may be made to:

Trane U.S. Inc.
4833 White Bear Parkway
St. Paul. MN 55110

or to Trane U.S Inc in care of one of the Participating Dealers listed in the Trane Sales Offices' section

Trane may direct a purchasing office to forward payment to one of the following remit to addresses, which will be listed on the invoice

Trane U.S. Inc.
P O Box 406469
Atlanta. GA 30384-6469

Trane U S Inc
P O Box 98167
Chicago. IL 60693

Trane U S Inc
P O Box 845053
Dallas TX 75284-5053

Trane U S Inc
File 56718
Los Angeles. CA 90074-6718

TRANE

Schedule customers seeking to make EFT payments should access CCR (Trane Cage Code 60532. DUNS No. 12-636-5795) or contact Trane Accounts Receivables Department at (608) 787-2629.

No special concessions granted

The Contractor warrants for a period of 12 months from initial start-up or 18 months from date of shipment, whichever is less, that the Contractor's products covered by this order (1) are free from defects in material and manufacture and (2) have the capacities and ratings set forth in the Contractor's catalogs and bulletins; provided that no warranty is made against corrosion, erosion or deterioration The Contractor's obligations and liabilities under this warranty are limited to furnishing F.O.B. factory or warehouse at Contractor designated shipping point, freight allowed the Contractor's warranty agent's stock location (or port of export for shipments outside the conterminous United States) replacement equipment (or at the option of the Contractor parts therefore) for all Contractor products not conforming to this warranty and which have been returned to the manufacturer. The Contractor shall not be obligated to pay for the cost of lost refrigerant.

No liability whatever shall attach to the Contractor until said products have been paid for and then said liability shall be limited to the purchase price of the equipment shown to be defective

The Contractor makes certain further warranty protection available on an optional extra-cost basis Any further warranty must be in writing, signed by an officer of the Contractor

The above warranties are given in lieu of all other warranties, express or implied, including THE IMPLIED WARRANTY OF MERCHANTABILITY any implied warranty of fitness for a particular purpose and any implied warranties otherwise arising from course of dealing or trade

Point of Exportation for all other overseas locations In place of a delivery/installation date for equipment, a shipping date shall be specified on the order The Contractor shall pay for shipment to a CONUS APO/FPO At the option of the Government F O B will be Point of Origin with freight prepaid and invoiced Authorization for all shipping, export and other charges must be included on the Government order

For locations in the 48 contiguous states, Alaska, Hawaii, Puerto Rico, and Washington, D.C., maintenance and repair is performed by the sales offices listed in the attached list of Trane Sales Offices in the United States, based on terms and prices set at each sales office. Contact each sales office for maintenance and repair available.

Installation for locations in the 48 contiguous states, Alaska, Hawaii, Puerto Rico, and Washington, D.C. is performed by the sales offices listed in the attached list of Trane Sales Offices in the United States, based on terms and prices set by each sales office.

Repair parts are stocked and sold by the sales offices listed under the section "Trane Sales Offices."

See Attached List of Trane Sales Offices

See Attached List of Trane Sales Offices

Preventive Maintenance is performed by the sales offices shown on attached list of Trane Sales Offices

TRANE

ways that Trane offerings is helping buildings go green and attain LEED certification

Designing and Engineering Your Green Building - **TRACE™ 700** is the complete design tool for load, system, energy and economic analysis, and is used to earn LEED EAc1 points. TRACE 700 complies with Appendix G for Performance Rating Method of ASHRAE Standard 90.1-2007 for LEED analysis, and was the first simulation software approved by the IRS for energy-savings certification (EPAct). TRACE is also tested in compliance with ANSI/ASHRAE Standard 140-2001.

Constructing Your Green Building - **EarthWise™ Systems** use state-of-the-art Trane products, systems and controls to optimize performance. This includes the ability to balance installed cost and operating cost while improving comfort, indoor air quality, and acoustics. EarthWise Systems provide high efficiency/low emissions performance that can be documented over the entire lifetime of the building.

EarthWise™ CenTraVac Chillers are rated by the U.S. Environmental Protection Agency as best-in-class energy-efficient designs and FEMP designation. CenTraVac Chillers are also a three time Climate Protection Award winner as the most energy-efficient, lowest-emission large chillers available and are the only chillers in the world to earn Environmental Product Declaration (EPD) registration following the requirements of ISO 14025.

Voyager™, **Precedent™** and **Intellipak™** commercial rooftop air conditioner units and **Odyssey™** split system performance meets or exceeds ASHRAE 90.1 standard. This standard sets acceptable energy efficiency performance requirements and is used by the DOE for both NAECA and EPAct. Some product lines have 2 or 3 tiers of efficiency levels available to choose from and some **Voyager™** Model TC* and YC* are **Energy Star**.

Trane Axiom™ water-source heat pumps (WSHP) deliver high-performance heating and cooling with exceptional efficiency, up to 40 EER on select systems. Within Trane's WSHP line, units are offered for the application of Geothermal and other WSHP systems that help your buildings work better and is a highly efficient technology that uses the ground as a heat source in winter and as a heat sink in summer. Technology is considered as a Renewable Energy.

Operating and Controlling Your Green Building - **Tracer™ controls**

300 LEED AP Certified, and over 145 Certified Energy Managers contribute to efficient and sustainable building operations.

Products are identified with environmentally sustainable products symbols in Trane Price List / Catalog or GSA Advantage! as appropriate. Trane currently has products with the following sustainable products symbol designations:

FEMP

Not Applicable

DUNS No. 12-636-5795

The Contractor has registered with the Central Contractor Registration Database and has been assigned Cage Code 60532.

The Contractor offers Series R Rotary Liquid Chillers and Water-Cooled and Condenserless Scroll Liquid Chillers under this contract. The ordering office should contact the Contractor for information on pricing and equipment specifications and configurations for the Rotary Liquid Chiller or Scroll Liquid Chiller appropriate for the ordering office's needs. Government discounts will be applied to commercial list prices on all orders. The ordering office should contact its local Trane Sales Office or the Contractor's Office at:

Trane
Pueblo Business Unit
101 William White Boulevard
Pueblo, Colorado 81001
Phone: 888-244-5537
Fax: 719-585-3896

FEMP

The Contractor offers CenTraVac™ Water-Cooled Centrifugal Liquid Chillers under this contract. The ordering office should contact the Contractor for information on pricing and equipment specifications and configurations for the CenTraVac™ Water-Cooled Centrifugal Liquid Chiller appropriate for the ordering office's needs. Government discounts will be applied to commercial list prices on all orders.

The ordering office should contact its local Trane Sales Office or the Contractor's Office at:

Trane
La Crosse Business Unit
3600 Pammel Creek Road
La Crosse, Wisconsin 54601
Phone: 608-787-3907
Fax: 608-787-2204

The Contractor offers Air-Cooled Liquid Chillers, Single-Zone Rooftop Air Conditioners, and Split System Air-Cooled Condensing Units under this contract. The ordering office should contact the Contractor for information on pricing and equipment specifications and configurations for the Liquid Chillers, Rooftop Air Conditioners, and Split System Condensing Units appropriate for the ordering office's needs. Government discounts will be applied to commercial list prices on all orders. The ordering office should contact its local Trane Sales Office or the Contractor's Office at:

Trane
Clarksville Business Unit
2701 Wilma Rudolph Boulevard
Clarksville, Tennessee 37040-5846
Phone: 931-648-5945
Fax: 931-648-5901

The Contractor offers Water Source Heat Pumps in five categories under this contract

Residential Premium Efficiency
Commercial High Efficiency
Commercial Premium Efficiency
Commercial Standard Efficiency
Optional Factory Mounted Controls

The ordering office should contact the Contractor for information on pricing and equipment specifications and configurations for the model water source heat pump appropriate for the ordering office's needs. Government discounts will be applied to commercial list prices on all orders. The ordering office should contact its local Trane Sales Office or the Global Controls and Contracting Office at.

Trane
Waco Business Unit
182 Cotton Belt Parkway
McGregor, Texas 76657-3411
Phone: 254-299-6300
Fax: 254-299-6671

The Contractor offers Unit Ventilators under this contract. The ordering office should contact the Contractor for information on pricing and equipment specifications and configurations for the model Unit Ventilator appropriate for the ordering office's needs. Government discounts will be applied to commercial list prices on all orders. The ordering office should contact its local Trane Sales Office or the Macon Business Unit at:

Trane
Macon Business Unit
7610 Industrial Highway
Macon, Georgia 31216
Phone: 478-781-6495
Fax: 478-784-4239

The Contractor offers Performance Climate Changer™ and Controls for Climate Changer Air Handlers under this contract. The ordering office should contact the Contractor for information on pricing and equipment specifications and configurations for the model Unit Ventilator appropriate for the ordering office's needs. Government discounts will be applied to commercial list prices on all orders. The ordering office should contact its local Trane Sales Office or the Lexington Business Unit at:

Trane
Lexington Business Unit
1515 Mercer Road
Lexington, Kentucky 40511
Phone: 800-228-1666
Fax: 859-288-2618

The Contractor offers ancillary services (SIN 246-1000) including services necessary to install the facility management system (from design through start-up), maintain the system (including maintenance agreements which may not exceed the term of this contract), or training. The ancillary services do not include construction, as defined by FAR 36.102. The Contractor also offers installation services, which may require construction as defined by FAR 36.102 (SIN 246-51).

The Contractor may offer these Special Item Numbers in conjunction with facility management systems offered under SIN 246-42(2). All services are based on negotiated Statements of Work and are evaluated on a "Best Value" basis to be negotiated between the ordering office and the Contractor per the solicitation.

The ordering office should contact the following address for further information:

Trane
4831 White Bear Parkway
St. Paul, Minnesota 55110
Phone: 1-800-877-1327
Fax: 651-407-3940

The Contractor offers HVAC system design and analysis software and training on the operation of Trane's software, and other training to include system applications and service training for government personnel. The Contractor also offers educational literature and design tools. The educational literature includes scripted training presentations and reference guides to educate on HVAC fundamentals.

The ordering office should contact the following address for further information on Trane's software and software training:

Trane
CDS Unit
3600 Pammel Creek Road
LaCrosse, Wisconsin 54601
Phone: 608-787-3926
Fax: 608-787-3005

The ordering office should contact the following address for further information on educational literature and materials

Trane
Inland Marketing Services
3030 Airport Road
LaCrosse, Wisconsin 54603
Phone 608-787-3926
Fax. 608-787-4705

The Contractor offers leasing of facility management systems under Energy Savings Performance Contracts that comply with the requirements of 42 U S.C 8287 The Contractor also offers straight leasing utilizing the same rates as are available under the Alternative Financing Method for Energy Savings Performance Contracts

The ordering office should contact the Contractor for negotiation of terms and conditions specifically applicable to this SIN at the following address:

Trane
4831 White Bear Parkway
St. Paul, Minnesota 55110
Phone: 1-800-877-1327
FAX: 651-407-3940

The Contractor offers rental of Air Conditioning Units under this contract. Pricing and equipment specifications are set out in this Authorized FSS Schedule Price List. The prices contained in this Price List are inclusive of negotiated Government discounts. The ordering office should contact the Contractor for information on configurations for the rental units appropriate for the ordering office's needs and for information on the terms of the Rental Agreement. The ordering office should contact the Contractor's office at:

Trane
Trane Rental Services
4500 Morris Field Drive
Charlotte, North Carolina 28208
Phone: 800-755-5115
Fax: 704-398-4681

The Contractor offers Heating and Cooling Coil Products under this contract The ordering office should contact the Contractor for information on pricing and equipment specifications and configurations for the model Unit Ventilator appropriate for the ordering office's needs Government discounts will be applied to commercial list prices on all orders The ordering office should contact its local Trane Sales Office or the Macon Business Unit at:

Trane
Macon Business Unit
7610 Industrial Highway
Macon Georgia 31216
Phone 478-781-6495
Fax 478-784-4239

TRANE

Albany, NY - Central New York

(518) 785-1315
FAX: (518) 785-4359 - Sales
301 Old Niskayuna Road
Latham, New York 12110-2214

Albuquerque, NM

(505) 884-2044
FAX: (505) 884-2449
5501 San Diego Avenue NE
Albuquerque, New Mexico 87113

Anchorage, AK

(907) 267-7400
FAX: (907) 267-7481
12101 Industry Way, Bldg C1
Anchorage, AK 99515

Appleton, WI

(920) 734-4531
FAX: (920) 734-2044
2500 N. Lynndale Drive
Appleton, Wisconsin 54914

Asheville, NC

(828) 277-8664
FAX: (828) 277-5848
1400 Sweeten Creek Road
Asheville, NC 28803

(404) 321-7500
FAX (404) 636-5204
2677 Buford Highway NE
Atlanta, Georgia 30324-3239

(706) 738-8157
FAX (706) 733-7842
3342 Commerce Drive
Augusta GA 30909

(512) 416-8822
FAX (512) 416-8894
9801 Metric Blvd Suite 400
Austin, TX 78758

(410) 403-2200
FAX (410) 403-2225
10947 Golden West Drive Suite 100
Hunt Valley, Maryland 21031

(225) 298-4280
FAX: (225) 291-9472
11534 Cloverland Avenue
Baton Rouge, LA 70879-8158

Birmingham, Al

(205) 7474-4000
FAX: (205) 747-4006
1030 London Drive, Suite 100
Birmingham, Alabama 35211

Boise, ID

(208) 362-0916
FAX: (208) 362-7463
351 N. Mitchell St., Suite 100
Boise, ID 83704

Boston, MA

(781) 938-9700
FAX: (781) 938-8912
225 Wildwood Avenue
Woburn, Massachusetts 01801

Boulder CO

(303) 527-0677
FAX: (303) 527-0845
6205 Lookout Road, Suite F
Boulder, CO 80301

(802) 864-3816
FAX: (802) 864-5093
175 Leroy Road
Williston VT 05495

(573) 334-0591
FAX (573) 334-0680
1078 Wolverine Lane #D
Cape Girardeau MO 63701

(843) 375 4775
FAX (843) 375-4776
2011 Clements Ferry Road
Charleston SC 29492

(704) 525-9600
FAX (704) 525-8582
4501 South Tryon Street
P.O. Box 240605 (28224)
Charlotte North Carolina 28217

(423) 296-1506
FAX: (423) 485-8139
6138 Preservation Drive, Suite 500
Chattanooga, TN 37416

Chicago, IL

(630) 734-3200
FAX: (630) 323-9040
7100 South Madison
Willowbrook, Illinois 60527-5505

Cincinnati, OH

(513) 771-8884
FAX: (513) 772-7281
10300 Springfield Pike
Cincinnati, Ohio 45215

Colorado Springs, CO

(719) 599-3900
FAX: (719) 268-0200
4242 N Nevada Avenue
Colorado Springs, CO 80907

Columbia, SC

(803) 936-4700
FAX: (803) 936-4715
111 Lott Court
West Columbia, South Carolina 29169

Columbus, OH

(614) 473-3500
FAX: (614) 473-3501
2300 City Gate Drive, Suite 100
Columbus Ohio 43219-3652

(972) 406-6000
FAX (972) 243-1398
P O Box 814609
Dallas, Texas 75381-4609
1400 Valwood Parkway, Suite 100
Carrollton Texas 75006

(563) 468-4900
FAX (563) 391-0277
109 West 55th Street
Davenport Iowa 52806

(303) 228-3300
FAX (303) 228-2828
445 Bryant St., Unit 5
Denver, Colorado 80204

(248) 596-3600

TRANE

FAX: (248) 596-3636
37001 Industrial Road
Livonia, Michigan 48150

El Paso, TX

(915) 593-3484
FAX: (915) 593-3490
1405 Vanderbilt Drive
El Paso, TX 79935

Evansville, IN

(812) 421-8725
FAX: (812) 421-8735
1024 East Sycamore Street
Evansville, IN 47714

Fargo, ND

(701) 235-0521
FAX: (701) 293-3136
300 45th Street SW
Fargo, North Dakota 58103

Fort Collins, CO

(970) 490-1052
FAX: (970) 490-1191
2416 Donnella Court, Unit D
Fort Collins, CO 80524

Fort Wayne, IN

(260) 489-0884
FAX: (260) 489-5117
6602 Innovation Blvd.
Fort Wayne, IN 46818

Fort Worth, TX

(817) 838-1300
FAX: (817) 831-8135
4200 N. Sylvania Avenue
Fort Worth, TX 76137

(559) 271-4625
FAX: (559) 271-4630
5599 N. Golden State Blvd
Fresno, California 93722

(904) 363-6088
FAX: (904) 363-1134
8929 Western Way, Suite 1
Jacksonville, FL 32256

(970) 242-4438
FAX: (970) 248-3959
2387 River Road, Unit 110
Grand Junction, CO 81505

Grand Rapids, MI

(616) 971-1400
FAX: (616) 971-1401
5005 Corporate Exchange Blvd. S.E.
Grand Rapids, Michigan 49512

Greenville, SC

(864) 672-6000
FAX: 864-672-6001
288 Fairforest Way
Greenville, South Carolina 29607

Harrisburg, PA

(717) 561-5400
FAX: (717) 561-5499
3909 TecPort Drive
Harrisburg, Pennsylvania 17111

Hartford, CT

(860) 616-6600
FAX: (860) 616-6599
716 Brook Street, Suite 130
Rocky Hill, CT 06067

Honolulu, HI (TSO)

(808) 845-6662
FAX: (808) 845-2168
2969 Mapunapuna Pl, Ste 101
Honolulu, Hawaii 96819

Huntsville, AL

(256) 837-1030
FAX: (256) 837-2058
4825 Commercial Drive
Huntsville, AL 35816

Indianapolis, IN

(317) 255-8777
FAX: (317) 251-8556
5355 North Post Road
Indianapolis, Indiana 46216

(904) 363-6088
FAX: (904) 363-1134
8929 Western Way, Suite 1
Jacksonville, Florida 32256

(423) 224-1150
FAX: (423) 224-1151
10384 Wallace Alley Street
Kingsport, Tennessee 37663

(814) 266-3020
FAX: (814) 266-3015
334 Bloomfield Street, Suite 204
Johnstown, Pennsylvania 15904

(913) 599-4664
FAX: (913) 599-4669
8014 Flint
Lenexa, Kansas 66214

Knoxville, TN

(865) 588-0607
FAX: (865) 588-0600
5220 S. Middlebrook Pk
Knoxville, TN 37921

La Crosse, WI

(608) 788-8430
FAX: (608) 787-0454
2525 Larson Street
La Crosse, WI 54603

Long Island, NY

(718) 269-3600
FAX: (718) 269-3758
245 Newtown Rd, Suite 500
Plainview, NY 11803

Los Angeles, CA

(626) 913-7123
FAX: (626) 913-7153
17760 Rowland Street
City of Industry, California 91748

Lubbock, TX

(806) 747-0266
FAX: (806) 744-1033
717 E 40th Street (79404)
PO Box 3963
Lubbock, TX 79452

Macon, GA

(478) 743-5429
FAX: (478) 743-2731
125 Macon West Drive
Macon, GA 31210

(608) 838-8200
FAX: (608) 838-6015
4801 Voges Road, Suite A
Madison, Wisconsin 53718

(901) 345-6000
FAX: (901) 345-2803
1775 Pyramid Place, Suite 100
Memphis, Tennessee 38132

(305) 592-0672
(954) 499-6900
FAX: (954) 499-6901
2884 Corporate Way
Miramar, Florida 33025

Milwaukee, WI

(414) 266-5200

FAX: (414) 266-5216
234 W. Florida Street
Milwaukee, WI 53204

Mobile, AL

(251) 665-2999
FAX: (251) 665-2920
4932 Tufts Road
Mobile, Alabama 36619

Montgomery, AL

(334) 215-2900
FAX: (334) 215-2901
915 Lagoon Business Loop
Montgomery, AL 36117

Nashville, TN

(615) 242-0311
FAX: (615) 726-3357
601 Grassmere Park Drive, Suite 10
Nashville, Tennessee 37211

New Orleans, LA

(504) 733-6789
FAX: (504) 731-0833
530 Elmwood Park Blvd.
Harahan, Louisiana 70123

New York, NY

(718) 269-3600
FAX: (718) 269-3601
45-18 Court Square
Long Island City New York 11101-4347

(973) 887-8800
FAX (973) 887 8844
4 Wood Hollow Road
Parsippany New Jersey 07054-0436

(405) 787-2237
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Oklahoma City, Oklahoma 73108

(402) 331-7111
FAX (402) 331-5200
5720 S 77th Street
Ralston, Nebraska 68127-4202

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FAX (407) 660-0303
2301 Lucien Way Suite 430
Maitland FL 32751

(602) 258-9600
FAX: (602) 253-3801
850 West Southern Ave
Tempe, Arizona 85282

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(412) 747-3000
FAX: (412) 747-4550
400 Business Center Dr.
Pittsburgh, Pennsylvania 15205

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(207) 828-1777
FAX: (207) 828-1511
30 Thomas Drive
Westbrook, Maine 04092

Providence, RI

(401) 434-3145
FAX: (401) 434-8537
50 Vision Blvd.
East Providence, Rhode Island 02914

Rapid City, SD

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FAX: (605) 342-7930
6807 Sturgis Road
Black Hawk, SD 57718

Reno, NV

(775) 856-3343
FAX: (775) 856-1704
5595 Equity Avenue, Suite 100
Reno, Nevada 89502

(804) 747-3588
FAX (804) 273-0119
10408 Lakeridge Parkway Suite 100
Ashland Virginia 23005

(540) 563-2828
FAX (540) 366-4958
2303 Trane Drive
Roanoke Virginia 24017

(585) 256-2500
FAX (585) 256-0067
75 Town Centre Drive Suite 300
Rochester New York 14623

(916) 577-1100
FAX (916) 577 1175
4145 Delmar Road
Rocklin California 95677

(636) 305-3600
FAX: (636) 349-0601
101 Matrix Commons Drive
Fenton, Missouri 63026

Salt Lake City, UT (CSO)

(801) 972-3352
FAX: (801) 972-3353
2817 South 1030 West
Salt Lake City, Utah 84119

San Antonio, TX

(210) 657-0901
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9535 Ball Street, Suite 1100
P.O. Box 34597 (78265)
San Antonio, Texas78217

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FAX: (858) 576-2554
3565 Corporate Court
San Diego, California 92123

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(787) 798-0999
PR #1, Km. 25.1.
Banco Quebrada Arenas
San Juan, Puerto Rico 00926-1900

Savannah, GA

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(425) 643-4310
FAX (425) 643-4314
2021 152nd Avenue NE
Redmond Washington 98052

(605) 336-8500
FAX (605) 336-0824
3500 South First Avenue Suite 150
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(574) 288-4914
FAX (574) 282-4874
2301 Bendix Drive Suite 400
South Bend Indiana 46628

(413) 746-3090
FAX (413) 746-0537
90 Carando Drive
Springfield, MA 01104

TRANE

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540 N. Cedarbrook
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15 Technology Place
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(850) 574-1726
FAX: (850) 575-5880
109 Hamilton Park Drive, Suite 1
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(520) 748-1234
FAX: (520) 748-1492
4520 S. Coach Drive
Tucson, AZ 85714

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(918) 250-5522
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2201 N. Willow Avenue
Broken Arrow, OK 74012

Twin Cities, MN (Sales Office)

651-468-2700
FAX: (612) 468-2720
775 Vandalia Street
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West Palm Beach, FL

(561-) 683-1521
FAX: (561) 697-8714
6965 Vista Parkway North #11
West Palm Beach, FL 33411

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(914) 593-0303
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11 Clearbrook Road
Elmsford, NY 10523

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FAX: (330) 896-4159
1525 Corporate Woods Parkway
Uniontown, OH 44685

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5925 Tilghman Street, Suite 70
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Solon Ohio 44139

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2220 NW 108th Street
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Houston, Texas 77042

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Lansing, MI 48911

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Gaithersburg, MD 20878

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120 Ida
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FAX (570) 654-0343
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Pittston, Pennsylvania 18640-9514

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66 Southgate Blvd
New Castle, Delaware 19720

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6736 Netherlands Drive, Suite A
Wilmington, NC 28405

Ingersoll Rand

TRANE

Equipment Price List

Water-Cooled Series R Rotary Liquid Chillers, Air-Cooled Series R Rotary Liquid Chillers, Water-Cooled and Condenserless Scroll Liquid Chillers, and Water-Cooled and Condenserless Series R Rotary Liquid Chillers

SIN	Model Number	Product Description	Product Code	GSA Price
246-42(2)	RTHD 	Water-Cooled Series R® Rotary Liquid Chillers (175-450 Tons) - Utilize a single compressor/single circuit design with R-134a refrigerant. This model uses the CH530 control panel.	153	See Note 1 Below
246-42(2)	CGAM 	Air-Cooled Scroll Liquid Chillers (20-130 Tons) - Uses HFC-410A refrigerant	664	See Note 1 Below
246-42(2)	RTAC 	Air Cooled Series R® Rotary Liquid Chillers (130-500 Tons)	154	See Note 1 Below
246-42(2)	RTWD 	Water-Cooled Series R Rotary Liquid Chillers (60-250 tons)	703	See Note 1 Below

NOTES:

(1) 'GSA Pricing' A Customer should contact Trane for information on pricing and equipment specifications and configurations for the model liquid chiller appropriate for the ordering office's needs.
(2) Standard delivery can be 70-126 days
(3) Expedited delivery times may be available based upon the availability of product inventory and plant production schedules. A Customer should contact Trane for information on accelerated delivery times
(4) The standard warranty for Commercial Products under Product Codes 153, 154, 664 and 703 is 12 months from initial start-up or 18 months from shipment.
(5) Extended warranties are available from Trane. See www.trane.com/commercial/equipment/extended.asp

Equipment Price List

CenTraVac™ Water Cooled Centrifugal Liquid Chillers

SIN	Model Number	Product Description	Product Code	GSA Price	Ecolabel
246-42(2)	CVHE 	CenTraVac™ Water-Cooled Centrifugal Liquid Chillers (170-500 Tons)	347	See Note 1 Below	FEMP
246-42(2)	CVHF 	CenTraVac™ Water-Cooled Centrifugal Liquid Chillers (350-1720 Tons)	347	See Note 1 Below	FEMP
246-42(2)	CDHF 	CenTraVac™ Water-Cooled Centrifugal Liquid Chillers (1500-3950 Tons)	347	See Note 1 Below	FEMP

NOTES:

(1) GSA Pricing: A Customer should contact Trane for information on pricing and equipment specifications and configurations for the model centrifugal liquid chiller appropriate for the ordering office's needs.
(2) Standard delivery can be 63-98 days.
(3) Expedited delivery times may be available based upon the availability of product inventory and plant production schedules. A Customer should contact Trane for information on accelerated delivery times.
(4) The standard warranty for Commercial Products under Product Code 347 is 12 months from initial start-up or 18 months from shipment.
(5) Centrifugal Chiller models that are configured and selected to achieve an energy efficiency performance better than 0.55 kW/ton are given the "Earthwise™" designation. The purchaser must contact his Trane reprresentative to analyze selection options, chiller performance, pricing, and life-cycle cost benefits in choosing an Earthwise™ model that meets the specific job performance requirements. Earthwise™ chillers conform to the requirements of Executive Order 13123 by being in the top 25th percentile of efficiency for Centrifugal Chiller products sold in the marketplace. Earthwise™ chillers exceed the minimum performance recommendations established by the DOE, Federal Energy Management Program. Trane's Earthwise™ Chiller has received the EPA's Climate Protection Award for being the highest in energy efficiency and lowest in refrigerant emissions.
(6) Extended warranties are available from Trane. See www.trane.com/commercial/equipment/extended.asp.
(7) Products showing the **FEMP** ecolabel meet Federal Energy Management Program (FEMP) recommended performance standards that are in the upper 25% of energy efficiency of that product group, and required under Federal Acquisition Regulation (FAR) Subpart 23.2

Air-Cooled Liquid Chillers, Single-Zone Rooftop Air Conditioners and Split System Air-Cooled Condensing Units

SIN	Model Number	Product Description	Product Code	GSA Price	Ecolable
246-42(2)	YC*, TC*, TE* 	Single-Zone Rooftop Air Conditioners (27 1/2 - 50 tons) Voyager	382	See Note 1 Below	
246-42(2)	S*HL 	Single-Zone Rooftop Air Conditioners (20 - 75 tons) IntelliPak	383	See Note 1 Below	
246-42(2)	RAUJ 	Split System Air-Cooled Condensing Units (20 - 60 tons)	361	See Note 1 Below	
246-42(2)	RAUJ 	Split System Air-Cooled Condensing Units (80 - 120 tons)	362	See Note 1 Below	
246-42(2)	CAUC	Split System Air-Cooled Condensing Units (20 - 60 tons)	385	See Note 1 Below	
246-42(2)	CAUC	Split System Air-Cooled Condensing Units (80 - 120 tons)	386	See Note 1 Below	
246-42(2)	TWA 	Odyssey Split System Heat Pumps (6-20 Tons, 60 HZ)	411	See Note 1 Below	
246-42(2)	TWE 	Odyssey Split System Air Handlers (5-20 Tons, 60 HZ)	416	See Note 1 Below	
246-42(2)	TTA 	Odyssey Split System Air Conditioners Handleers (5-20 Tons 60 HZ)	419	See Note 1 Below	
246-42(2)		Odyssey Split System Accessoriers	351	See Note 1	

246-42(2)	TC* 	Voyager 11 Access - 12.5-25 Ton - Packaged Optional Electric Heat/Cooling Rooftop Unit	463	See Note 1 Below	
246-42(2)	WC*	Voyager 11 Access - 12.5-20 Ton - Packaged Heat Pump/Cooling Rooftop Unit	465	See Note 1 Below	
246-42(2)	YC*	Voyager 11 Access - 12.5-25 Ton - Packaged Gas Heat/Cooling Rooftop Unit	467	See Note 1 Below	
246-42(2)	BAY*, FIY*	Voyager 11 Access - 12.5-25 Ton - Accessories	390	See Note 1 Below	

246-42(2)	Y*C 	Precedent G/E - 3-10 Ton Packaged Gas Heat/Cooling Rooftop Unit	514	See Note 1 Below	
246-42(2)	WSC	Precedent G/E - 3-10 Ton Packaged Heat Pump Heat/Cooling Rooftop Unit	516	See Note 1 Below	
246-42(2)	T*C 	Precedent G/E - 3-10 Ton Packaged Optional Electric Heat/Cooling Rooftop Unit	518	See Note 1 Below	
246-42(2)	BAY* SEN*	Precedent G/E - 3-10 Ton Accessories	289	See Note 1 Below	

NOTES:

(1) GSA Pricing A Customer should contact Trane for information on pricing and equipment specifications and configurations for the model liquid chiller rooftop air conditioner or split system condensing unit appropriate for the ordering office's needs

(2) Standard delivery can be 12-84 days depending on the product line

(3) Expedited delivery times may be available based upon the availability of product inventory and plant production schedules A Customer should contact Trane for information on accelerated delivery times

(4) The standard warranty for Commercial Products under Product Codes 361 362 382 383 385 and 386 and Product Codes 289, 330, 463, 465 467 514 516 and 518 is 12 months from initial start-up or 18 months from shipment

(5) Extended warranties are available from Trane See www.trane.com/commercial/equipment/extended.asp

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Equipment Price List

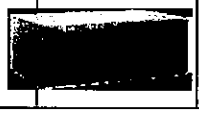
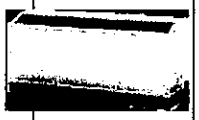
Climate Changer Air Handlers

SIN	Product Code	Product Description	GSA Price
246-42(2)	50 	Performance Climate Changer™ Air Handler - Unit Sizes 3-120.	See Note 1 Below
246-42(2)	200	Low Voltage Controls for Climate Changer Air Handling Units	See Note 1 Below

NOTES:

(1) GSA Pricing: A Customer should contact Trane for information on pricing and equipment specifications and configurations for the model climate changer air handler appropriate for the ordering office's needs.
(2) Standard delivery can be 70-126 days for Climatte Changer Air Handlers.
(3) Expedited delivery times may be available based upon the availability of product inventory and plant production schedules. A Customer should contact Trane for information on accelerated delivery times.
(4) The standard warranty for Commercial Products under Product Codes 50 and 200 is 12 months from initial start-up or 18 months from shipment.
(5) Extended warranties are available from Trane See www.trane.com/commercial/equipment/extended.asp

Water Source Heat Pump Categories

SIN Number	Model Number	Product Description	Product Codes	GSA Price
		Commercial Premium Efficiency		
246-42(2)	EXHE 	Water Source Heat Pumps - High Efficiency Vertical	176	See Note 1 Below
246-42(2)	EXVE	Water Source Heat Pumps - High Efficiency Horizontal	176	See Note 1 Below
		Commercial High Efficiency		
246-42(2)	EXWE 	Water Source Heat Pumps - Commercial High Efficiency Water-to-water	75	See Note 1 Below
246-42(2)	GEVE	Water Source Heat Pumps - Vertical	331	See Note 1 Below
246-42(2)	GEHE 	Water Source Heat Pumps - Horizontal	331	See Note 1 Below
246-42(2)	GECE 	Water Source Heat Pumps - High Efficiency Console	331	See Note 1 Below
246-42(2)	GETE 	Water Source Heat Pump - Vertical Stack	332	See Note 1 Below
246-42(2)	Controls	Water Source Heat Pumps - Optional Factory Mounted Controls	126	See Note 1 Below

Notes:

(1) GSA Pricing: A Customer should contact Trane for information on pricing and equipment specifications and configurations for the model water source heat pump appropriate for the ordering office's needs.
(2) All Units include Condensate Overflow, Copper Heat Exchanger and 24V Controls.
(3) Standard delivery can be 49-70 days.
(4) For expedited delivery of 10 days after receipt of order (ARO), Contractor adds a delivery fee of 15% of the purchase price.
(5) The standard warranty for Commercial Water Source Heat Pumps under Product Codes 075, 331, and 332 and for Controls under PC 126 is 12 months from initial start-up or 18 months from shipment.
(6) Extended warranties are available from Trane. See www.trane.com/commercial/equipment/extended.asp.

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Equipment Price List

Unit Ventilators

Classroom Unit Ventilators, Unit Ventilator Accessories, Self Contained Unit Ventilators and Unit Ventilator Controls

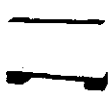
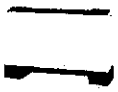
SIN	Model Number	Product Description	Product Code	GSA Price
246-42(2)	VUVB 	Vertical Classroom Unit Ventilators	042	See Note 1 Below
246-42(2)	HUVB 	Horizontal Classroom Unit Ventilators	042	See Note 1 Below
246-42(2)	SHLA	Unit Ventilator Shelving and Accessories	077	See Note 1 Below
246-42(2)	Wall Boxes	Unit Ventilator Accessories	077	See Note 1 Below
246-42(2)	SWE	Unit Ventilator Sidewall Exhaust	077	See Note 1 Below
246-42(2)	Controls	Unit Ventilator Controls	242	See Note 1 Below

NOTES:

(1) GSA Pricing: A Customer should contact Trane for information on pricing and equipment specifications and configurations for the model unit ventilator, accessories, or controls appropriate for the ordering office's needs
(2) Standard delivery can be 49-72 days
(3) Expedited delivery may be available based upon production schedules at the factory and the availability of product inventory. For expedited delivery of 10 days after receipt of order (ARO), Contractor adds a delivery fee of up to 15% of the purchase price. A Customer should contact Trane for information on availability of product, accelerated delivery times, and pricing
(4) The standard warranty for Unit Ventilators under Product Codes 042 and 077 and for Controls under Product Code 242 is 12 months from initial start-up or 18 months from shipment
(5) Extended warranties are available from Trane. See www.trane.com/commercial/equipment/extended.asp

Equipment Price List

Macon and Columbia Coil Products

SIN	Model Number	Product Description	Product Code	GSA Price
246-42(2)		Cooling Coils	081	See Notes Below
246-42(2)		Heating Coils	082	See Notes Below
246-42(2)	**	UniTrane Fan Coil Controls	223	See Notes Below
246-42(2)	FF 	Force-Flo Cabinet Heater	277	See Notes Below
246-42(2)	FC 	UniTrane Fan-Coil	278	See Notes Below
246-42(2)	BC 	Blower Coil Air Handler	290	See Notes Below
246-42(2)	**	Blower Coil Controls	292	See Notes Below
246-42(2)	LPC 	Packaged Climate Changers	298	See Notes Below
246-42(2)	**	Packaged Climate Changers - Controls	299	See Notes Below

** Embedded in product model number

NOTES:

(1) GSA Pricing A Customer should contact Trane for information on pricing and equipment specifications and configurations for the coil product appropriate for the ordering office's needs
(2) Standard delivery ranges from 28-49 days and with the specific time depending on the unit ordered, configuration and season of year ordered.
(3) Expedited delivery may be available based upon production schedules at the factory and the availability of product inventory A Customer should contact Trane for information on availability of product, accelerated delivery times and negotiated pricing.
(4) The standard warranty for products under Product Codes 081, 082, 223, 277, 278, 290 292, 298 and 299 is 12 months from initial start-up or 18 months from shipment
(5) Extended warranties are available from Trane
See www.trane.com/commercial/equipment/extended.asp.

TRANE

Equipment Price List

Building Energy Management and Control Products

SIN Number	Model Number	Product Description	Product Code	GSA Price
		ZN511 Products		
246-42(2)	4950 0469	Tracer ZN511 Zone Controller with Plastic Cover	100	$178.84
246-42(2)	4950 0569	Tracer ZN511 Zone Controller with Metal Enclosure	100	$224.16
		MP501 Products		
246-42(2)	4950 0486	Tracer MP501 Setpoint Controller with Plastic Cover	103	$124.56
246-42(2)	4950 0586	Tracer MP501 Setpoint Controller w/ Metal Enclosure	103	$195.39
		Service Tools		
246-42(2)	4020 1199	Rover Service Tool: Software Upgrade Package (s/w)	104	$91.42
246-42(2)	X1365149701	Rover LonTalk Hardware Kit	104	$434.25
246-42(2)	X1365149801	Rover Comm4 Hardware Kit	104	$182.63
246-42(2)	X1365150001	Rover LonTalk & Comm4 Software and Hardware	104	$669.43
246-42(2)	X1365149901	Rover LonTalk Software and Hardware	104	$456.47
246-42(2)	X1365150201	Rover LonTalk Configuration Only Software and Hardware	104	$365.26
246-42(2)	X1365150301	Rover Air and Water Balancing Only	104	$426.35
246-42(2)	X1365150101	Rover Comm4 Software and Hardware	104	$304.38
246-42(2)	X4509148201	Kit - Tracer TU for AdaptiView	104	$715.99
246-42(2)	X4509151201	Kit - Tracer TU Controls	104	$894.98
246-42(2)	X4509151301	Kit - Tracer TU Complete	104	$1,491.63
246-42(2)	X4509151401	Kit - Tracer TU Upgrade	104	$268.49
246-42(2)	X4509153601	Tracer TU Balancing Tool - Single VAV	104	$117.48
		End Devices and Sensors		
246-42(2)	3430 3017	24 VAC/SPDT Relay	107	$7.68
246-42(2)	3430 3020	24 VAC/SPDT Relay with Enclosure	107	$14.76
246-42(2)	3580 3005	24 VAC Wall Plug-in Transformer	107	$10.63
246-42(2)	3581 2021	UL Component Recognized Transformer 120/208/240 VAC, 75 VA	107	$22.14
246-42(2)	3581 2022	UL Component Recognized Transformer 120 VAC 40 VA	107	$8 27
246-42(2)	4020 1159	5V Differential Duct Static Pressure Sensor	107	$41.92
246-42(2)	4190 2006	Air Flow Sampling Probe	107	$4 72
246-42(2)	4190 7020	4-20mA 3% Duct Humidity Sensor	107	$120 45
246-42(2)	4190 7021	4-20mA 3% Outside Air Humidity Sensor	107	$128 12
246-42(2)	4190 1045	Balco Duct Temp w/5 ft Avg Element	107	$42 22
246-42(2)	4190 1046	Balco Duct Temp w/22 ft Avg Element	107	$47 23
246-42(2)	4190 1080	Balco Transmitter - use w/ PCM AI 3-6	107	$47 23
246-42(2)	4190 1084	Low Temp Cutout Manual Reset	107	$67 90
246-42(2)	4190 1096	0-50 PSID Diff Pressure Sensor	107	$300 53
246-42(2)	4190 1097	Electric to Pneumatic Transducer w/ Override	107	$82 36
246-42(2)	4190 1104	4" Brass Immersion Well	107	$16 53
246-42(2)	4190 1106	375 Platinum Outdoor Air Temp w/ Enclosure	107	$18 01
246-42(2)	4190 1108	4" Stainless Steel Immersion Well	107	$19.48
246-42(2)	4190 1100	Therm Sealed Temp Sensor	107	$8 27
246-42(2)	4190 1101	Therm Outdoor Air Temp Sensor	107	$16 53
246-42(2)	4190 1112	6" Brass Immersion Well	107	$18.01
246-42(2)	4190 1113	6" Stainless Steel Imm Well	107	$22 73
246-42(2)	4190 1114	Thermal Well Compound	107	$9 15
246-42(2)	4190 1119	385 Plat Duct Avg 24	107	$73 80
246-42(2)	4190 1122	20' Averaging Duct Temperature Sensor	107	$69.38
246-42(2)	4190 1123	6' Averaging Duct Temperature Sensor	107	$48 71
246-42(2)	4190 1129	4' Thermistor Duct 6' Lead Temperature Sensor	107	$16 56

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Equipment Price List

Building Energy Management and Control Products

SIN Number	Model Number	Product Description	Product Code	GSA Price
246-42(2)	4190 1130	4" Balco Duct/Immersion Temperature Sensor	107	$31.29
246-42(2)	4190 1131	4" 375 Platinum Duct/Immersion Temperature Sensor	107	$25.39
246-42(2)	4190 1132	4" Thermistor Duct/Immersion Temperature Sensor	107	$16.56
246-42(2)	4190 1133	6" Thermistor Duct/Immersion Temperature Sensor	107	$18.07
246-42(2)	4190 1134	12" Thermistor Duct Temperature Sensor	107	$19.78
246-42(2)	4190 5005	Water Differential Pressure Switch	107	$50.78
246-42(2)	4190 5050	Building Static Pressure Sensor Selectable	107	$91.81
246-42(2)	4190 5051	Duct Static Pressure Sensor Selectable	107	$91.81
246-42(2)	4190 6006	Air Differential Pressure Switch	107	$17.42
246-42(2)	4190 7015	Stainless Steel Therm. Wall Plate w/ Logo	107	$8.56
246-42(2)	4190 7016	Stainless Steel Therm. Wall Plate w/o Logo	107	$8.56
246-42(2)	4950 0340	Four 24 VAC Pilot Relays in a Box	107	$206.65
246-42(2)	X13310270	Current Sensing Switch	107	$45.76
246-42(2)	X1351152801	Zone Sensor (This product is only available as an optional component (part) of a Trane total solution for a Heating Ventilation Air Conditioning (HVAC) system. It is not available for individual purchase.)	107	$12.95
246-42(2)	X1351153001	Zone Sensor w/ On + Cancel (This product is only available as an optional component (part) of a Trane total solution for a Heating Ventilation Air Conditioning (HVAC) system. It is not available for individual purchase.)	107	$12.95
246-42(2)	X1351152701	Zone Sensor w/ On + Cancel + Set. Adj. (This product is only available as an optional component (part) of a Trane total solution for a Heating Ventilation Air Conditioning (HVAC) system It is not available for individual purchase.)	107	$22.88
246-42(2)	X1351152901	Zone Sensor w/ Set. Adj. (This product is only available as an optional component (part) of a Trane total solution for a Heating Ventilation Air Conditioning (HVAC) system It is not available for individual purchase.)	107	$22.88
246-42(2)	X1316105702	Thumbwheel Hot/Cold (Qty 12 per box)	107	$4.08
246-42(2)	X1365146702	Comm Module Zone Sensor (Box of 12) (This product is only available as an optional component (part) of a Trane total solution for a Heating Ventilation Air Conditioning (HVAC) system It is not available for individual purchase)	107	$27.21
246-42(2)	X13790422010	CO2 Demand Vent Wall Sensor	107	$218.31
246-42(2)	X13790423010	CO2 Demand Vent Duct Sensor	107	$251.43
246-42(2)	X1379044401	Zone Sensor Comb RH Temp 3% 4-20 mA	107	$102.35
246-42(2)	X1379087901	Zone Sensor RH 5% 20-4 mA	107	$66.25
246-42(2)	X1379084201	Zone Sen Set TOV 3SpFan (This product is only available as an optional component (part) of a Trane total solution for a Heating Ventilation Air Conditioning (HVAC) system It is not available for individual purchase.)	107	$29.51
246-42(2)	X1379084501	Zone Sen Set TOV Fan	107	$29.51
246-42(2)	X1379084801	Zone Sen Set TOV 2SpFan (This product is only available as an optional component (part) of a Trane total solution for a Heating Ventilation Air Conditioning (HVAC) system It is not available for individual purchase.)	107	$29.51

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Equipment Price List

Building Energy Management and Control Products

SIN Number	Model Number	Product Description	Product Code	GSA Price
		Applied Building Controllers		
246-42(2)	4020 1095	CCP Upgrade ROM Kit	115	$3.93
246-42(2)	4020 1204	BMTX Internal Modem	115	$192.36
246-42(2)	4020 1224	BMTX BCU Operator Display Upgrade Kit	115	$913.98
246-42(2)	4950 0457	Comm 5 Repeater	115	$268.46
246-42(2)	BMTX001AAC000	Tracer Summit BMTX (Enhanced BCU), Power = 120 VAC	115	$3,931.13
246-42(2)	BMTX001AAC001	Tracer Summit BMTX (Enhanced BCU), Power = 120 VAC, with Internal Modem	115	$4,123.15
246-42(2)	BMTX001AAC010	Tracer Summit BMTX (Enhanced BCU), Power = 120 VAC, with Operator Display	115	$4,845.11
246-42(2)	BMTX001AAC011	Tracer Summit BMTX (Enhanced BCU), Power = 120 VAC, with Operator Display and Internal Modem	115	$5,037.13
246-42(2)	BMTX001BAC000	Tracer Summit BMTX (Enhanced BCU), Power = 230 VAC	115	$3,931.13
246-42(2)	BMTX001BAC001	Tracer Summit BMTX (Enhanced BCU), Power = 230 VAC, with Internal Modem	115	$4,123.15
246-42(2)	BMTX001BAC010	Tracer Summit BMTX (Enhanced BCU), Power = 230 VAC, with Operator Display	115	$4,845.11
246-42(2)	BMTX001BAC011	Tracer Summit BMTX (Enhanced BCU), Power = 230 VAC, with Operator Display and Internal Modem	115	$5,037.13
246-42(2)	BMTX001CAC000	Tracer Summit BMTX (Enhanced BCU), Frame Mount - CE Listed (24V)	115	$3,931.13
246-42(2)	BMTX001CAC001	Tracer Summit BMTX (Enhanced BCU) Frame Mount w/ Modem - CE Listed (24V)	115	$4,123.15
246-42(2)	BMTX001EAC000	Tracer Summit BMTX (Enhanced BCU) Frame Mount - UL Listed (24V)	115	$3,931.13
246-42(2)	BMTX001EAC001	Tracer Summit BMTX (Enhanced BCU) Frame Mount w/ Modem - UL Listed (24V)	115	$4,123.15
246-42(2)	BMTX001DAB000	Tracer Summit BMTX (Enhanced BCU) Power = 120VAC UUKL Listing	115	$3,931.13
246-42(2)	4020 1146	Validation Documentation Templates These are documentation templates to be used for validating a Tracer Summit Critical Control System site. These templates are for single site use only and require completion by a system validation specialist. Templates include: User Requirement Specification, Design Specification or Functional Specification, Installation Qualification, Operational Qualification, Performance Qualification, Validation Master Plan, Risk Assessment, Validation Summary Report, Traceability Matrix. Contact Trane GCC for a validation service quotation to complete the validation documentation and/or to execute the validation protocols.	115	$11,133.82
246-42(2)	4950 0531	BMTX Retrofit kit for BMTS & BMTW BCU	115	$3,931.13
246-42(2)	4950 0535	BMTX Retrofit kit for BMTS & BMTW BCU with modem	115	$4,123.15
246-42(2)	4950 0534	BMTX retrofit kit for Tracer 100 with modem	115	$4,123.15
246-42(2)	4950 0532	BMTX retrofit kit for Tracer 100	115	$3,931.13
246-42(2)	X4025010801	Trane eView Meter - Year Qty 1-10	119	$487.67
246-42(2)	X4025010802	Trane eView Meter (Year) Qty 11-20	119	$292.53
246-42(2)	X4025010803	Meter (Year) Qty 21 & Up	119	$195.48
246-42(2)	X4025010801A	Trane eView B10 Bundle - Subscription	119	$2,115.90

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SIN Number	Model Number	Product Description	Product Code	GSA Price
246-42(2)	X4025010802A	Trane eView B25 Bundle - Subscription	119	$4,760.59
246-42(2)	X4025010803A	Trane eView B100 Bundle - Subscription	119	$10,176.22
246-42(2)	X4025010901	Trane eView Express User - Year Subscription	119	$116.11
246-42(2)	X4025011001	Trane eView Manager User - Year Subscription	119	$145.23
246-42(2)	X4025011101	Trane eView Expert User - Year Subscription	119	$1,161.80
		Applied Automation Software		
246-42(2)	4020 1111	Tracer Summit Current Version Work Package (Windows)	131	$1,272.18
246-42(2)	4020 1112	Tracer Summit Current Version Work Demo Package (Windows)	131	$22.03
246-42(2)	4020 1113	Tracer Summit Current Version Software Upgrade	131	$338.39
246-42(2)	4020 1147	Additional Summit + Critical Control System Package	131	$2,026.54
246-42(2)	4020 1148	Summit Software + Critical Control System Package	131	$10,130.48
246-42(2)	40201149	Critical Control System Package	131	$8,858.29
246-42(2)	4020 1150	Summit + T100/Tracker Package	131	$1,436.49
246-42(2)	4020 1151	T100/Comm Package	131	$165.25
246-42(2)	4020 1152	Summit + Building Management Package	131	$1,577.77
246-42(2)	4020 1153	Building Management Package	131	$306.22
246-42(2)	4020 1154	Summit PCSW and Enterprise Management	131	$2,477.82
246-42(2)	4020 1155	Summit Enterprise Management Add-On	131	$1,205.96
		Tracker Hardware and Software		
246-42(2)	4020 1185	Tracker PC Software (Version 11.0)	179	$129.02
246-42(2)	4020 1238	Tracker 12 LAN Upgrade	179	$523.61
246-42(2)	4020 1239	Tracker 24 LAN Upgrade	179	$825 55
246-42(2)	BMTK000AAB0110	Building Management Tracker (BMTK). Model 12	179	$980.14
246-42(2)	BMTK000AAB0210	Building Management Tracker (BMTK) Model 24	179	$1,529.07
246-42(2)	BMTK000ABB0110	Building Management Tracker (BMTK) Model 12 with Ethernet and Modem	179	$1 256.66
246-42(2)	BMTK000ABB0210	Building Management Tracker (BMTK). Model 24 with Ethernet and Modem	179	$1 805 40
246-42(2)	BMTK000ABB0510	Building Management Tracker (BMTK) Model WSHP with Ethernet and Modem	179	$2 018 33
246-42(2)	3591 4269	25 Pin Male to RJ12 Adapter	182	$17 33
246-42(2)	4950 0341	Transformer/Relay Enclosure	182	$154.05
246-42(2)	4950 0345	Large Rooftop Interface	182	$256 04
246-42(2)	4950 0372	TCM Std Ambient NEMA 1 Enclosure	182	$289 25
246-42(2)	4950 0373	TCM Ext Ambient NEMA 1 Enclosure	182	$332 15
246-42(2)	4950 0374	TCM Ext Ambient NEMA 4 Enclosure	182	$415 65
246-42(2)	X13650529010	Central Control Panel, VariTrac II	183	$504 19
246-42(2)	X13650530010	Relay Kit for CCP VariTrac II	183	$90.44
246-42(2)	X13650939010	Central Control Panel III with Operator Display	183	$757 42
246-42(2)	X13650941010	Central Control Panel III without Operator Display	183	$463 50
246-42(2)	X13760015010	Central Control Panel Operator Display Panel Only	183	$305.23
246-42(2)	X13650943010	Central Control Panel Relay Kit (New)	183	$90 44
246-42(2)	X13650576010	Central Control Panel Binary Input Controller	183	$377.58

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Equipment Price List

Building Energy Management and Control Products

SIN Number	Model Number	Product Description	Product Code	GSA Price
		Programmable Controllers		
246-42(2)	4020 1156	Operator Door Display	187	$497 37
246-42(2)	4020 1157	MP580/581 Elec Board Only	187	$766.33
246-42(2)	4020 1180	Portable Programming Stand	187	$97.39
246-42(2)	4950 0468	Wall Mount Operator Display	187	$412.92
246-42(2)	4950 0491	Portable. Display with Case	187	$447.57
246-42(2)	BMTM000AAD00	Input Power Supply: 120 VAC. with Enclosure, No Display	187	$665.47
246-42(2)	BMTM000AAD01	Input Power Supply: 120 VAC. with Enclosure and Touch Screen Operator Display	187	$1.028.71
246-42(2)	BMTM000BAD00	Input Power Supply: 230 VAC. with Enclosure, No Display	187	$665.47
246-42(2)	BMTM000BAD01	Input Power Supply: 230 VAC with Enclosure and Touch Screen Operator Display	187	$1,028.71
246-42(2)	BMTM000CAD00	Input Power Supply: 230 VAC. Frame Mount, No Display	187	$544.85
		Tracer UC600		
246-42(2)	BMUC600USA0100011	Tracer UC600 Controller	536	$567.39
246-42(2)	X13651563010	XM32 Module (4 Relay)	536	$141.04
246-42(2)	X19091354010	10" DIN Rail Enclosure	536	$65.65
246-42(2)	X13651559010	13" DIN Rail Enclsoure 120 V	536	$151.14
246-42(2)	X13651560010	13" DIN Rail Enclosure 230V	536	$151.14
246-42(2)	X13651552010	24" DIN Rail Enclosure 120V	536	$467.47
246-42(2)	X13651554010	24" DIN Rail Enclosure 230V	536	$467.47
246-42(2)	X1365153801	24 VAC to 1.4A 24 VDC	536	$97.39
246-42(2)	X13651537010	XM30 I/O Module (4 UI/AO)	536	$141.04
246-42(2)	X13651553010	24" Enclosure Display Mount 120V	536	$539.25
246-42(2)	X13651555010	24" Enclosure Display Mount 230V	536	$539.25
246-42(2)	X13651597010	XM70 (8UI. 6UI/AO. 4R. 1P)	536	$441.50
246-42(2)	X13651571010	Tracer TD7 Display	536	$428.52
246-42(2)	X18210613010	TD7 Portable Carry Case	536	$50.50
246-42(2)	X05010511010	TD7 Mounting Bracket	536	$23 45
		[illegible]		
246-42(2)	4950 0496	Tracer ZN517 Unitary Controller with Plastic Cover	639	$201 51
246-42(2)	4950 0596	Tracer ZN517 Unitary Controller with Metal Enclosure	639	$237 57
		[illegible]		
246-42(2)	4020 1219	Tracer VV551 Single Duct VAV Controller	640	$160 71
246-42(2)	4020 1220	Tracer VV551 Single Duct VAV Controller w/ Belimo Actuator	640	$203 31
246-42(2)	4020 1221	Tracer VV551 Single Duct VAV Controller w/ Trane Actuator	640	$183 95
		[illegible]		
246-42(2)	4950 0490	Tracer MP503 Setpoint Controller with Plastic Cover	641	$210 96
246-42(2)	4950 0590	Tracer MP503 Setpoint Controller w/ Metal Enclosure	641	$250 64
		[illegible]		
246-42(2)	4950 0499	EX2 Expansion Module with Plastic Cover	642	$351 11
246-42(2)	4950 0500	EX2 Expansion Module with Metal Enclosure	642	$388.54
		[illegible]		

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Equipment Price List

Building Energy Management and Control Products

SIN Number	Model Number	Product Description	Product Code	GSA Price
246-42(2)	X4025010401	Tracer ES License (Unlimited)	643	$30,226.74
246-42(2)	6400245401	Tracer ES CD	643	$0.36
246-42(2)	X40250126010	Tracer ES Standard Software w/ CD and 1 License	643	$2,015.26
246-42(2)	X40250125010	Tracer ES Additional License	643	$503.91
246-42(2)	X40250129010	Tracer ES Software Maintenance Plan (SMP) 1 Year	643	$755.67
246-42(2)	X4025010701	Tracer ES Bundle - Qty 1 License	643	$2,518.81
246-42(2)	X40250129020	Tracer ES Software Maintenance Plan (SMP) 2 Years	643	$1,209.07
246-42(2)	X40250129030	Tracer ES Software Maintenance Plan (SMP) 3 Years	643	$1,360.20
246-42(2)	X40250130010	Tracer ES Unlimited SMP 1 Year	643	$7,556.78
246-42(2)	X40250131010	Tracer ES Renewal for Expired SMP Plan	643	$251.89
246-42(2)	X40250124010	Tracer ES Express w/ Windows Box and 1 License	643	$2,519.17
		AH541 Products		
246-42(2)	4950 0468	Standalone Operator Display	644	$516.43
246-42(2)	4950 0491	Portable, Display with Case	644	$559.41
246-42(2)	BMTA000AAC00	Tracer AH541 Air Handler Controller (BMTA) Power = 120 VAC with Enclosure, No Display	644	$484.69
246-42(2)	BMTA000AAC01	Tracer AH541 Air Handler Controller (BMTA) Power = 120 VAC with Enclosure and Display	644	$851.66
246-42(2)	BMTA000BAC00	Tracer AH541 Air Handler Controller (BMTA) Power = 230 VAC with Enclosure, No Display	644	$484.69
246-42(2)	BMTA000BAC01	Tracer AH541 Air Handler Controller (BMTA) Power = 230 VAC with Enclosure and Display	644	$851.66
246-42(2)	BMTA000CAC00	Tracer AH541 Air Handler Controller (BMTA) Power = No Power Supply for Unit Frame Mount, No Display	644	$383.58
		ZN521 Products		
246-42(2)	4950 0470	Tracer ZN521 Zone Controller with Plastic Cover	645	$228.06
246-42(2)	4950 0570	Tracer ZN521 Zone Controller with Metal Enclosure	645	$271.04
		[illegible]		
246-42(2)	X13651569010	Connectivity Module	668	$649.27
246-42(2)	X45091562010	Tracer XT Software Kit, 700 I/O pts, 200 Historian Tags	949	$17,874.39
246-42(2)	X45091562020	Tracer XT Software Kit 1,500 I/O pts 300 Historian Tags	949	$28,896.82
246-42(2)	X45091562030	Tracer XT Software Kit, 35,000 I/O pts, 600 Historian Tags	949	$36,772.82
246-42(2)	BMSC000AAA011000	Tracer SC w/ Power Supply and Base License	1009	$750.63
246-42(2)	BMCF000AAA0AE00	15 Device Application License	1009	$459.90
246-42(2)	X13651559010	13" DIN Rail Enclosure 120V	1009	$151.14
246-42(2)	X13651560010	13" DIN Rail Enclsoure 230V	1009	$151.14
246-42(2)	X13651552010	24" DIN Rail Enclosure 120V	1009	$467.47
246-42(2)	X13651554010	24" DIN Rail Enclosure 230V	1009	$467.47
246-42(2)	X13651596010	24" Enclosure Solid Door (UUKL) 120 VAC	1009	$521.22

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Equipment
Price List

Trane Rental Services

SIN	Model Number	Product for Rent	Product Code	GSA Monthly Rental Rate
		Rental of Air Cooled Chillers		
246-53	CS-ACC-01	10 Ton Air Cooled Chiller	197	$2,244.82
246-53	CS-ACC-02	15 Ton Air Cooled Chiller	197	$2,244.82
246-53	CS-ACC-03	25 Ton Air Cooled Chiller	197	$2,244.82
246-53	CS-ACC-04	40 Ton Air Cooled Chiller	197	$3,591.72
246-53	CS-ACC-05	60 Ton Air Cooled Chiller	197	$4,393.08
246-53	CS-ACC-06	80 Ton Air Cooled Chiller	197	$5,194.44
246-53	CS-ACC-07	100 Ton Air Cooled Chiller	197	$5,995.80
246-53	CS-ACC-08	125 Ton Air Cooled Chiller	197	$6,946.25
246-53	CS-ACC-09	170 Ton Air Cooled Chiller	197	$8,986.07
246-53	CS-ACC-10	200 Ton Air Cooled Chiller	197	$10,322.80
246-53	CS-ACC-11	300 Ton Air Cooled Chiller (includes trailer)	197	$14,332.99
246-53	CS-ACC-12	400 Ton Air Cooled Chiller (includes trailer, pump, 6" hose box)	197	$18,907.35
246-53	CS-ACC-13	500 Ton Air Cooled Chiller (includes trailer, pump, 6" hose box)	197	$23,403.77
246-53	CS-ACC-14	155 Ton Air Cooled Chiller	197	$8,403.26
246-53	CS-ACC-15	250 Ton Air Cooled Chiller	197	$12,283.00
		Rental of Water-Cooled Chillers		
246-53	CS-WCC-04	500 Ton Water Cooled Chiller	197	$17,039.65
246-53	CS-WCC-06	750 Ton Water Cooled Chiller	197	$23,496.61
246-53	CS-WCC-09	1000 Ton Water Cooled Chiller	197	$29,374.15
246-53	CS-WCC-11	225 Ton Water Cooled Chiller	197	$10,690.44
246-53	CS-WCC-12	350 Ton Water Cooled Chiller	197	$13,576.36
		Pump Rental		
246-53	CS-PU-01	3/5 HP Pump	197	$314.69
246-53	CS-PU-02	7 5/10 HP Pump	197	$472.21
246-53	CS-PU-03	15/20 HP Pump	197	$806.10
246-53	CS-PU-04	25/30 HP Pump	197	$1,010.76
246-53	CS-PU-05	40/50 HP Pump	197	$1,573.92
246-53	CS-PU-06	60 HP Pump	197	$1,760.28
246-53	CS-PU-08	125 HP Pump	197	$3,148.51
246-53	CS-PU-10	100 HP Pump	197	$2,535.89
		[illegible]		
246-53	CS-HK-01	2.5" Diameter Hose Kit, contains 200 total feet	197	$190.09
246-53	CS-HK-02	4" Diameter Hose Kit: contains 200 total feet	197	$253.79
246-53	CS-HK-03	6" Diameter Hose Kit: contains 200 total feet	197	$591.96
246-53	CS-HK-04	8" Diameter Hose Kit, contains 400 total feet	197	$719.02
246-53	CS-HK-05	10" Diameter Hose Kit, contains 200 total feet	197	$845.47
246-53	CS-HK-06	4" Dia Hose Kit for vertical/suction apps 96 ft total	197	$591.96
		[illegible]		
246-53	CS-TR-01	300 kVa Transformer	197	$728.40
246-53	CS-TR-02	500 kVa Transformer	197	$1,166.07
246-53	CS-TR-03	750 kVa Transformer	197	$1,749.64
246-53	CS-TR-04	1000 kVa Transformer	197	$1,944.16
246-53	CS-TR-05	1500 kVa Transformer	197	$2,915.36
		[illegible]		
246-53	CS-VT-01	10 Ton DX (Direct Exchange Refrigerant) Vertical Tent Unit	197	$1,577.65
246-53	CS-VT-02	20 Ton DX (Direct Exchange Refrigerant) Vertical Tent Unit	197	$2,126.23
246-53	CS-DX-01	25 Ton DX/Voyager (Direct Exchange Refrigerant) Unit	197	$2,620.52

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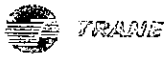
Equipment
Price List

Trane Rental Services

SIN	Model Number	Product for Rent	Product Code	GSA Monthly Rental Rate
246-53	CS-DX-02	35 Ton DX/Voyager (Direct Exchange Refrigerant) Unit	197	$3,636.97
246-53	CS-DX-03	50 Ton DX/Voyager (Direct Exchange Refrigerant) Unit	197	$5,241 75
		Tower Rental		
246-53	CS-TO-01	500 Ton Tower (mounted on 48 foot step-deck trailer)	197	$7,015.03
246-53	CS-TO-02	250 Ton Tower (mounted on trailer)	197	$4,246.70
246-53	CS-TO-03	270 Ton Tower NO TRAILER	197	$3,941.74
246-53	CS-TO-04	750 Ton Tower (mounted on 48 foot step-deck trailer)	197	$10,283.83
		Air Handling Unit (AHU) Rental		
246-53	CS-AHU-01	5000 cfm AHU	197	$2,648.72
246-53	CS-AHU-02	10000 cfm AHU	197	$2,738.85
246-53	CS-AHU-03	25000 cfm AHU	197	$4,500.83
		Flex Duct Rental		
246-53	CS-FD-01	20" Flex Duct [contains (4) 25 foot sections of Flex]	197	$313.43
246-53	CS-FD-02	12" Flex Duct [contains (4) 25 foot sections Black]	197	$259.21
246-53	CS-FD-03	12" Flex Duct [contains (4) 25 foot sections White]	197	$259.21
		Rental of Electric Cable		
246-53	CS-EC-01	2/0 Cable Box (4) 100' Sections of Electric Cable	197	$501.76
246-53	CS-EC-02	4/0 Cable Box (4) 100' Section of Electric Cable	197	$501.76
		Trailer Rental		
246-53	CS-TA-01	48 foot Flatbed Trailer	197	$906.80
246-53	CS-TA-02	28 foot Flatbed Trailer	197	$906.80
246-53	CS-TA-03	32 foot Flatbed Trailer	197	$906.80
246-53	CS-TA-04	48 or 53 ft Step Deck Trailer	197	$1,108.31
		Rental of Generators - Standby Rat		
246-53	SR36	36kW Generator - standby rate	197	$913
246-53	SR60	60kW Generator - standby rate	197	$1,366
246-53	SR100	100kW Generator - standby rate	197	$1 678
246-53	SR120	120kW Generator - standby rate	197	$1,839
246-53	SR140	140kW Generator - standby rate	197	$2,000
246-53	SR200	200kW Generator - standby rate	197	$2,666
246-53	SR350	350kW Generator - standby rate	197	$4 409
246-53	SR450	450kW Generator - standby rate	197	$5 458
246-53	SR500	500kW Generator - standby rate	197	$5,512
246-53	SR750	750KW Generator - standby rate	197	$7 875
246-53	SR1125	1125kW Generator - standby rate	197	$9 360
246-53	SR1450	1450kW Generator - standby rate	197	$10 845
246-53	08H36	36kW Generator - 8 hour run rate	197	$1 074
246-53	08H60	60kW Generator - 8 hour run rate	197	$1 608
246-53	08H100	100kW Generator - 8 hour run rate	197	$1 976
246-53	08H120	120kW Generator - 8 hour run rate	197	$2,164
246-53	08H140	140kW Generator - 8 hour run rate	197	$2,353
246-53	08H200	200kW Generator - 8 hour run rate	197	$3 135
246-53	08H350	350kW Generator - 8 hour run rate	197	$5 188
246-53	08H450	450kW Generator - 8 hour run rate	197	$6,422
246-53	08H500	500kW Generator - 8 hour run rate	197	$6,485
246-53	08H750	750KW Generator - 8 hour run rate	197	$9,264
246-53	08H1125	1125kW Generator - 8 hour run rate	197	$11,011
246-53	08H1450	1450kW Generator - 8 hour run rate	197	$12,759



Equipment
Price List

Trane Rental Services

SIN	Model Number	Product for Rent	Product Code	GSA Monthly Rental Rate
		Rental of Generators - 16 hour Run Rate		
246-53	16H36	36kW Generator - 16 hour run rate	197	$1,612
246-53	16H60	60kW Generator - 16 hour run rate	197	$2,412
246-53	16H100	100kW Generator - 16 hour run rate	197	$2,962
246-53	16H120	120kW Generator - 16 hour run rate	197	$3,246
246-53	16H140	140kW Generator - 16 hour run rate	197	$3,531
246-53	16H200	200kW Generator - 16 hour run rate	197	$4,704
246-53	16H350	350kW Generator - 16 hour run rate	197	$7,781
246-53	16H450	450kW Generator - 16 hour run rate	197	$9,716
246-53	16H500	500kW Generator - 16 hour run rate	197	$9,728
246-53	16H750	750KW Generator - 16 hour run rate	197	$13,896
246-53	16H1125	1125kW Generator - 16 hour run rate	197	$16,517
246-53	16H1450	1450kW Generator - 16 hour run rate	197	$19,138
		Rental of Generators - 24 hour Run Rate		
246-53	24H36	36kW Generator - 24 hour run rate	197	$2,149
246-53	24H60	60kW Generator - 24 hour run rate	197	$3,215
246-53	24H100	100kW Generator - 24 hour run rate	197	$3,951
246-53	24H120	120kW Generator - 24 hour run rate	197	$4,328
246-53	24H140	140kW Generator - 24 hour run rate	197	$4,704
246-53	24H200	200kW Generator - 24 hour run rate	197	$6,272
246-53	24H350	350kW Generator - 24 hour run rate	197	$10,375
246-53	24H450	450kW Generator - 24 hour run rate	197	$12,827
246-53	24H500	500kW Generator - 24 hour run rate	197	$12,952
246-53	24H750	750KW Generator - 24 hour run rate	197	$18,528
246-53	24H1125	1125kW Generator - 24 hour run rate	197	$22,023
246-53	24H1450	1450kW Generator - 24 hour run rate	197	$25,518

TRANE

Equipment
Price List

Trane Rental Services

SIN	Model Number	Product for Rent	Product Code	GSA Monthly Rental Rate

NOTES:

(1) The total monthly Rental Rate equals the GSA Monthly Rental Rate multiplied by both the Time of Year Multiplier and the Multi-Month Rental Multiplier.
(2) The **Time of Year Multiplier** is set out in the Table below.

Time of Year Multiplier

Time of Year Discount	Month
0.8	January
0.8	February
0.8	March
0.8	April
0.9	May
1	June
1	July
1	August
0.9	September
0.8	October
0.8	November
0.8	December

(3) The **Multi-Month Rental Multiplier** is set out in the Table below.

Multi-Month Rental Multiplier

Multiplier	Months
1	1-2
0.85	3-6
0.75	7-12

(4) Trailers are rented at the rate of $900 per month, regardless of the time of year or length of the rental. This rate is not discounted. Flatbed trailers are 48-Ft or 53-Ft.
(5) The rental rate for a Transformer is waived if the Transformer is rented with a Chiller
(6) The Time of Year and Multi-Month Rental Multipliers are not applied to the Rental Rate for Electric Cable
(7) For rental periods that include partial months the Rental Rates will be calculated as follows

First Month - Weekly rate will equal 1/3 of monthly rate
Daily rate will equal 1/7 of weekly rate.

Ending Month - Weekly rate will equal 1/4 of monthly rate
Daily rate will equal 1/7 of weekly rate

The minimum rental period is one week
(8) **Freight Charges** - A freight charge of $1000 will be added to equipment rentals of up to $7,000. The $7,000 is for equipment portion only and does not include any startup, installation or decommissioning charges. No separate freight charges are included for equipment rentals above $7,000. If equipment rental portion is over $7,000, roundtrip freight is included. Equipment is to be shipped from and returned to Trane designated storage locations with outbound and return freight prepaid by Trane. The $1000 freight charge on equipment rentals of up to $7,000 shall be billed in the first rental period. Trane reserves the right to change freight charges for events such as natural disasters (hurricanes, etc.) and special projects that involve multiple loads.

(9) **Transformers** - Lugs for transformers must be provided by others and are not included. Transformers kVa 300, 500, 750 are for 208, 240, 480, & 600 Volts. Transformers kVa 1,000 & 1,500 (and some 750's) are for 480, 600, 2400, & 4160 Volts.

Equipment
Price List

Trane Rental Services

SIN	Model Number	Product for Rent	Product Code	GSA Monthly Rental Rate

(10) **Hose Kits** - Trane will not split boxes of the 2.5", 4", or 6" hoses For 2.5" , 4", and 6", each hose box contains (1) 10ft section, (1) 15ft section, (1) 25ft section (3) 50ft sections, (2) 90's, (2) 45's, (2) vict-to-flange adapters & vict couplings. For 10" hose box it contains (1) 10ft section, (1) 15ft section, (7) 25ft sections, (2) 90's, (2) 45's, (2) vict-to-flange adapters & vict couplings

(11) **Electric Cable** - The Time of Year and Multi-Month Rental Multipliers are not applied to the rental rate for Electric Cable. Each 2/0 awg or 4/0 awg cable box contains (4) 100-ft sections, (4) 15-ft male pigtails, and (4) 15-ft female pigtails. If pricing electrical cable boxes please note multiple runs per phase might be required depending on the actual unit chosen. Please call Trane Rental Services at 800-755-5115 for any electrical questions regarding Trane Rental cable boxes. Wiring is only provided for 460V side. If a transformer is required the wiring for the building side must be provided by others.

(12) **Chillers** - 300-ton Air-Cooled chiller pricing includes trailer and chiller is on trailer. 400-ton and 500-ton Air-Cooled chiller pricing includes trailer, pump, and 200-ft hose kit of 6-in hose. All Water-Cooled chillers are stored in Charlotte, NC and ship with a Nitrogen holding charge Refrigerant will be shipped in cylinders on the trailer. The chiller will need to be charged at delivery and the refrigerant recovered before it is sent back.

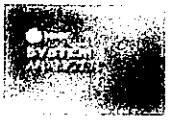
(13) **Pumps** - Pumps do not have wiring This must be provided by others.

(14) **Ancillary Items** - Items such as pumps, hose kits, transformers, trailers, and electrical cable can only be rented with a chiller or DX unit. Trane Rentals does not rent these items as stand-alone items A customer seeking a special case rental during the off-season should contact Trane Rentals for negotiations on a case-by-case basis.

(15) **Generator Freight Charges - Generator freight is not included in the generator rental rates. Roundtrip freight for generators will be based on actual freight charges. An estimate of the freight charges can be provided at the time the rental agreement is executed.**

(16) **Generators** - A **preventive maintanence (PM)** service is required every 250 hours of generator run time. PM rates depend on unit size and are in addition to the rental rates above Please contact Rental Services for PM rates.

(17) **Generator Fueling** is not included in the rental rates above and is the responsibility of the customer.

SIN Number	Product Number	Product Description	Product Code	GSA Price for Standard License w/ IFF	GSA Price for each Additional License w/ IFF	GSA Price for LAN/Site License w/ IFF
246-52	CDS-PKG-C 	TRACE® 700	607	$1 995 00	$995.00	$3.990 00
246-52	CDS-PKG-D 	Trane Acoustics Program (TAP™)	610	$495.00	$248.74	$742.50
246-52	CDS-PKG-W 	System Analyzer™	622	$995.00	$500.00	$1.492.50
246-52	CDS-PKG-A 	TRACE 700 Load Design	603	$695.00	$349.24	$1.042.50
246-52	CDS-PKG-T 	Trace 700 Load Express™ (Version 4 1 1)	604	$495.00	$248.74	$742 50
246-52	CDS-PKG-CPA 	TRACE 700 Chiller Plant Analyzer	606	$495 00	$248 74	$742 50
246-52	CDS-PKG-L	VariTrane™ Duct Designer	605	$495 00	$248 74	$742.50
246-52	CDS-PKG-P 	Trane® Pipe Designer	611	$195 00	$97 99	$292 50
246-52	CDS-PKG-E	Distribution Suite	602	$595 00	$298.99	$892 50

246-52	CDS-PKG-J 	Trane® Engineering Toolbox	619	$95.00	$47.74	$142.50
246-52	CDS-PKG-FLS	TRACE 700 Family LAN Seats				$75.00

NOTES:

(1) List prices are in U.S. dollars and subject to change without notice. Contact the C.D.S. Group for current pricing. All C.D.S. software is subject to an annual licensing fee billed at 25% of the program list price. Payment of this fee entitles the license.

(2) Special university software suites and pricing are available. Contact C.D.S. for details.

(3) Site users for the TRACE 700 family may install the software on multiple, stand alone computers at one specific location.

(4) LAN users for the TRACE 700 family may install the software on a Local Area Network. Seats must be purchased for each user for a one time fee.

C D S Training Seminars

SIN Number	Course number	Course Name	Product Code	Course Length		GSA Price for Individual Course w/ IFF	GSA Price for 2 Courses w/ IFF	GSA Price for 3 Courses w/ IFF	GSA Price for 4 Courses w/ IFF	GSA Price for each add'l student for a course w/ IFF
C D.S. Seminar Schedule at LaCrosse, Wisconsin Site										
246-52	CDS-TRNGL1	System Analyzer™	616	1 Day		$350.00	$650.00	$850.00	$1,000.00	$262.50
246-52	CDS-TRNGL2	TRACE® 700 Load Design	616	1 Day		$350.00	$650.00	$850.00	$1,000.00	$262.50
246-52	CDS-TRNGL3	TRACE® 700	616	1 Day		$350.00	$650.00	$850.00	$1,000.00	$262.50
246-52	CDS-TRNGL4	TRACE 700 Advanced Topics	616	1/2 Days		$350.00	$650.00	$850.00	$1,000.00	$262.50

Notes:

(1) Multiple student discounts are applicable only at Trane's LaCrosse, WI location.

(2) Cancellations must be received two weeks prior to class date by fax, mail or email. A customer can apply the fee of $200 to another class taken within three months of the original class or may send a substitute. No Shows will be charged full class price. Trane reserves the right to cancel classes due to weather, illness, or any other reason. All students will be notified as early as possible and CDS' liability will be limited to the return of registration fees.

On-Site Training at the Customer's Location

246-52	CDS-TRNGC1	First Day of Training On-Site or 1-10 people	616	1 Day		$750.00
246-52	CDS-TRNGC12	First Day of Training On-Site or 11-15 people	616	1 Day		$1,000.00
246-52	CDS-TRNGC13	First Day of Training On-Site or 16-20 people	616	1 Day		$1,250.00
246-52	CDS-TRNGC14	First Day of Training On-Site or 21-30 people	616	1 Day		$1,500.00
246-52	CDS-TRNGC2	Each Additional Day of Training for 1-10 people	616	Per Day		$650.00
246-52	CDS-TRNGC22	Each Additional Day of Training for 11-15 people	616	Per Day		$750.00

C.D.S. Training Seminars

SIN Number	Course number	Course Name	Product Code	Course Length		GSA Price for Individual Course w/ IFF	GSA Price for 2 Courses w/ IFF	GSA Price for 3 Courses w/ IFF	GSA Price for 4 Courses w/ IFF	GSA Price for each add'l student for a course w/ IFF
246-52	CDS-TRNGC23	Each Additional Day of Training for 16-20 people	616	Per Day		$1,000.00				
246-52	CDS-TRNGC24	Each Additional Day of Training for 21-30 people	616	Per Day		$1,250.00				

Notes:

(1) **Cancellation Policy** - If this training is cancelled after the agreement form has been received, any charges incurred to C.D.S. will be charged back to customer. In addition, a $200 administrative fee will apply to any cancellations occurring within 2 weeks of the agreed upon training date.
(2) The fees for on-site training are per trainer. A customer wishing to have more than 30 people trained at the same time should contact CDS and special arrangements will be made Two trainers are required for training of more than 30 people.

(3) For training provided at the customer's location, training shall be provided at the billing rate shown above. The customer shall pay for the trainer's travel and per diem expenses. Rates paid as a result of travel must comply with the Federal Travel Regulations or Joint Travel Regulations, as applicable, in effect on the date(s) the travel is performed.

(4) If a customer wants CDS to do a training in conjunction with any other training, expenses will be negotiated

Computer Rental for Use During Training at Customer's Location

246-52	CDS-COMRNT15	1-5 Computers	616			$400.00
246-52	CDS-COMRNT610	10 Computers	616			$550.00

Notes

(1) C D S will rent computers for use by the customer during on-site training
(2) The customer shall pay for the cost of shipping and insurance on shipping the computers roundtrip from LaCrosse Wisconsin to the site of the training and back to LaCrosse

(3) Extra Manuals There will be a charge of $15 per manual for any extra training manuals required by the customer

Training and Software Purchased Together

SIN Number	Product Number	Description	Product Code		Software Alone - GSA Price w/IFF	Training Alone - GSA Price w/ IFF	Software & Training Together - GSA Price w/ IFF
246-52	CDS-TNG-L700	TRACE® 700 Load Design	616		$695.00	$350.00	$870 00
246-52	CDS-TNG-T700	TRACE® 700	616		$1,995.00	$350.00	$2,170.00
246-52	CDS-TNG-SA	System Analyzer™	616		$995.00	$350.00	$1,170.00

NOTES:

(1) Package Pricing for the purchase of software and training together is available only at Regional locations and Trane's LaCrosse, WI. site.

(2) At the end of the LaCrosse training seminar, all participants will receive a coupon to save 15% off the regular listed software price. To receive this discount, all software orders must be accompanied by this coupon.

(3) Trane will hold training at regional locations other than LaCrosse. WI. based upon customer demand. Contact the LaCrosse location for additional information.

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number [	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
				AIR CONDITIONING CLINICS	
				Purpose Scripted training presentations used to educate on the fundamentals of heating, ventilating, and air conditioning (HVAC). Each clinic includes a student workbook, with corresponding quiz questions/problems. Audience: The content is technical in nature and the original intended audience was HVAC system designers and installing contractors who wanted to learn the basics of HVAC. However, in the past the audience has been extremely broad and has included HVAC system designers, installing contractors, architects, system operators, servicing technicians, and owners.	
				FUNDAMENTALS SERIES	
246-52	TRG-TRC002-EN	Cooling and Heating Load Estimating (2000)	Dual units (IP/SI)	Presentation of cooling and heating load estimating procedures to used for accurate HVAC equipment selections. The clinic presents the ASHRAE Cooling Load Temperature Difference (CLTD), Solar Cooling Load Factor (SCL), and Cooling Load Factor (CLF) method. Topics include: human comfort, indoor and outdoor design conditions, cooling load estimation, conduction heat gain and loss, solar heat gain, internal heat gains, infiltration, ventilation, fan heat, heating load estimation, single-space psychrometric analysis (sensible heat ratio or SHR, supply airflow, supply air temperature, coil load), multiple-space psychrometric analysis (block load versus sum-of-peaks), plenum versus space loads, and benefits of computerized load analysis.	$16.12
246-52	TRG-TRC003-EN	Refrigeration Cycle (1999)	Dual units (IP/SI)	Presentation of the basic principles of the vapor-compression refrigeration cycle. Topics include: principles of heat transfer, sensible heat, latent heat of vaporization, refrigerants, mechanical refrigeration cycle components (compressor, condenser, evaporator, expansion device), and pressure–enthalpy (P-h) chart (superheat, subcooling, refrigeration effect, heat of compression)	$16.12
246-52	TRG-TRC004-EN	Refrigeration Compressors (2000)	Dual units (IP/SI)	Introduction of the common compressor types used in air-conditioning applications, including reciprocating, scroll, helical-rotary (screw), and centrifugal. Topics include: review of the basic refrigeration cycle; open, semi-hermetic, hermetic; types of compressors; principles of compressor operation; methods of compressor capacity control (cylinder unloaders, cycling, slide valve, inlet vanes, variable-speed); methods of system-level control (direct expansion versus chilled water, constant volume versus VAV), and preventing evaporator freeze-up (sensing suction temperature, hot gas bypass)	$16.12
246-52	TRG-TRC005-EN	Refrigeration System Components (1998)	Dual units (IP/SI)	Discussion of the components used in a vapor-compression refrigeration system. Topics include: review of the refrigeration cycle, condensers (air-cooled, water-cooled, evaporative) and their control, evaporators (finned-tube, shell-and-tube) and their control, thermostatic expansion valve, superheat and subcooling, solenoid valve, liquid line filter drier, moisture-indicating sight glass, suction line filter, hot gas muffler, shutoff valve, and access ports	$16.12
246-52	TRG-TRC006-EN	Refrigeran: Piping (2002)	Dual units (IP/SI)	Review of refrigeration system piping considerations, design guidelines, and sizing recommendations. Topics include: suction line, discharge (hot gas) line, liquid line, hot gas bypass line traps, double risers, refrigeration accessories required, insulation	$16.12

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number [	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	TRG-TRC007-EN	Fundamentals of HVAC Acoustics (2001)	Dual units (IP/SI)	Discussion of the fundamental concepts of acoustics as it applies to buildings and HVAC systems Topics include: sound wave, frequency, broadband sound, tones, octave bands, one-third octave bands, sound power and sound pressure, decibels, loudness, A-weighting, Noise Criteria (NC), Room Criteria (RC), sones, phons, acoustical analysis procedure, source-path-receiver model, computerized analysis tools, attenuation and regeneration, sound transmission, sound absorption, sound reflection, room effect, equipment sound rating, free field, reverberent field, semireverberent field, industry rating standards, reverberent room method, ARI Standard 260.	$16 12

EQUIPMENT SERIES

246-52	TRG-TRC010-EN	Centrifugal Water Chillers (1999)	Dual units (IP/SI)	Description of the components, operation, and application of a centrifugal water chiller. Topics include: centrifugal compressor, condenser, expansion device (orifice plates), economizer, evaporator, motor, starters, controls, the refrigeration cycle, purge system, compressor capacity control (surge, inlet vanes, multi-stage compressor, adjustable frequency drive or variable speed drive), maintenance considerations, and application considerations (condensing temperature control, constant or variable evaporator water flow, heat recovery, free cooling, short water loops, ARI Standard 550/590-1998).	$16.12
246-52	TRG-TRC011-EN	Absorption Water Chillers (2000)	Dual units (IP/SI)	Discussion of the fundamentals of the absorption refrigeration cycle as it pertains to water chillers. Topics include: absorption refrigeration cycle (generator or concentrator, condenser, evaporator, absorber, heat exchanger), system fluids (water, lithium bromide), equilibrium chart, single-effect versus double-effect chillers, indirect-fired versus direct-fired chillers, chiller/heaters, capacity control methods (energy valve, AFD) causes of crystallization and methods of prevention purge operation general maintenance considerations (corrosion inhibitors), cooling-water temperature limitations combination gas-and-electric plants special considerations for direct-fired chillers, ASHRAE Standard 15 and ARI Standard 560	$16 12
246-52	TRG-TRC012-EN	Helical-Rotary Water Chillers (1999)	Dual units (IP/SI)	Presentation of the components, operation and application of a helical-rotary (screw) water chiller Topics include helical-rotary compressor oil separator condenser (water-cooled and air-cooled), expansion device, liquid/vapor separator, evaporator, starter, controls, the refrigeration cycle refrigerants compressor capacity control slide valve operation, maintenance considerations and a brief list of application considerations (air-cooled or water-cooled condensing, condensing temperature control, constant or variable evaporator water flow short water loops ARI Standard 550/590-1998)	$16 12

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	TRG-TRC013-EN	Air Conditioning Fans (· :)	Dual units (IP/SI)	Coverage of fan system performance, types of fans, and methods of control. Topics include. static pressure vs. velocity pressure, fan performance curves, fan—system interaction, basic types of fans (forward curved - FC, backward inclined - BI, airfoil - AF, vaneaxial, and variable-pitch vaneaxial - VPVA), methods of fan control (riding the fan curve, discharge dampers, inlet vanes. variable speed, and variable-pitch blade control), and fan applications considerations (static pressure control. system effects, non-standard conditions – altitude, and equipment certification standards.)	$12.00
				SYSTEMS SERIES	
246-52	TRG-TRC014-EN	VAV Systems (2001)	Dual units (IP/SI)	Summary of the variable air volume (VAV) approach to air conditioning. Topics include: explanation of VAV. components of a VAV system, terminal unit types (cooling only, reheat, parallel and series fan powered, dual duct), terminal unit controllers (pneumatic, electronic, DDC), diffusers, supply duct design, interior vs. perimeter spaces, system control modes, fan modulation, static pressure control, and system applications considerations (system-level ventilation, freeze protection for coils, part-load space humidity control, building pressure control.).	$16.12
246-52	TRG-TRC015-EN	Water-Source Heat Pump Systems (2000)	Dual units (IP/SI)	Discussion of the water-source heat pump (WSHP) system. Topics include. operation and components of a heat pump, types of heat pumps. components of a WSHP system, system benefits and issues. system configurations (cooling tower/boiler, ground-coupled. types of ground heat exchangers. hybrid systems). system-level control issues. maintenance considerations application considerations (ventilation, acoustics. space humidity control. condensate management. airside and waterside economizers building pressurization equipment rating standards)	$16.12
246-52	TRG-TRC016-EN	Chilled-Water Systems (2001)	Dual units (IP/SI)	Description of chilled-water systems Topics include vapor-compression and absorption chiller types. air-cooled vs water-cooled condensers packaged vs split components. ASHRAE Standard 90 1-1999 equipment rating standards (ARI 550, 590 and 560) components of a chilled-water system coil control (3-way valves 2-way valves face-and-bypass dampers) constant vs variable evaporator flow chiller plant design concepts (parallel. series and primary-secondary or decoupled) combined energy (hybrid) plants low-flow systems variable-primary-flow systems heat recovery sidecar arrangement. free cooling (plate-and-frame heat exchanger refrigerant migration) and chilled-water system control (chiller sequencing. swing chiller failure recovery. system optimization and system-level control)	$16 12

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	TRG-TRC017-EN	HVAC System Control (2002)	Dual units (IP/SI)	Introduction to automatic control of HVAC equipment and systems. Topics include: control loops, types of control action (two position or on/off, floating, proportional, proportional-integral or PI, and proportional-integral-derivative or PID), pneumatic controls, analog-electric controls, microprocessor-based controls or DDC, unit-level control versus system-level control, example unit-level control loops for a VAV air handler (discharge-air temperature, ventilation, airside economizer, mixed-air temperature, static pressure, building pressurization), examples of system-level control (occupied versus unoccupied modes, morning warmup mode, changeover in a two-pipe system, water loop temperature control in a WSHP system), examples of system optimization strategies (fan-pressure optimization, optimum start, chilled-water reset, WSHP loop optimization), normally-open versus normally-closed actuators,	$16.12
246-52	TRG-TRC017-EN	HVAC System Control (2002)	Dual units (IP/SI)	(cont.)common functions of a building automation system (responding to complaints, graphical user interface, time-of-day scheduling, centralized alarms and diagnostics, remote access, reports, preventive maintenance, integration with other systems, multiple-site support), network terminology, dedicated vs. shared networks, communication protocols, gateways, interoperability, BACnet, LonTalk, LonMark.	
246-52	TRG-TRC018-EN	Introduction to HVAC Systems (2004)	Dual units (IP/SI)	Introduction to HVAC systems that dissects the entire system into five subsystems, or "loops." Topics include: requirements for occupant comfort, five "loops" (airside loop, chilled-water loop, refrigeration-equipment loop, heat-rejection loop, controls loop), factors that affect decision to choose a chilled-water versus a direct expansion (DX) system, packaged versus split systems, common HVAC system types, single-zone versus multiple-zone systems, constant-volume versus variable-air-volume systems, packaged terminal air conditioner (PTAC), single-zone packaged DX rooftop, DX split system, chilled-water terminal system (fan coils, classroom unit ventilators, blower coils), two-pipe versus four-pipe systems, water-source heat pump systems, dedicated outdoor-air systems, single-zone VAV, multizone system, three-deck multizone system, changeover-bypass system, multiple-zone VAV system, rooftop VAV system, self-contained DX VAV system, chilled-water VAV system, double-duct VAV system, and factors that impact the selection of the HVAC system	$16.12
246-52	TRG-TRC019-EN	Ice Storage Systems (2005)	Dual units (IP/SI)	This clinic focuses on glycol-based ice storage systems, which use an ice-chiller to cool a heat transfer fluid—often a mixture of water and antifreeze, such as glycol—to a temperature below the freezing point of water. This fluid is pumped through an ice storage tank, causing water inside the tank to freeze. Topics include: benefits of ice storage, on-peak versus off-peak, ice storage tank, full storage versus partial storage, ice-making chiller, heat transfer fluid, ethylene glycol versus propylene glycol, common system layouts (small versus large systems), retrofitting existing systems, control of ice storage systems (tactical control versus strategic control)	$16.12

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number [	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	1-43 186	Set of all *Air Conditioning Clinic* booklets		Set of all *Air Conditioning Clinic* booklets	$206 55
246-52	1-43.165	"Air Conditioning Clinic" bundle		This bundle includes: - Trane Air Conditioning Manual (see page 43) - Set of all *Air Conditioning Clinic* booklets (see pages 36-40) - Ductulator duct sizing calculator (see page 54) - Psychrometric Charts – pad of 25, standard altitude, I-P units (see page 54-55)	$216.62

TEXTBOOKS AND MANUALS

246-52	AC MANUAL	Trane Air Conditioning Manual (1996)	IP units only	A comprehensive textbook, initially published in the 1930's, on the fundamentals of heating, ventilating, and air conditioning (HVAC). The audience is broad and has historically included students, HVAC system designers, installing contractors, architects, system operators, and service technicians. Chapters include: Heat and Its Measurement. Comfort; Heat Gains; Properties Of Air and The Psychrometric Chart; Calculations For The Conditioned Air Supply: Refrigeration Theory, Compressors, and Refrigeration Cycle Components: Refrigeration and Cooling Apparatus; Use Of Water In Air Conditioning; Air Transport Systems: The Air Conditioning System.	$30 23
246-52	REFR MANUAL	Trane Reciprocating Refrigeration Manual (1977)	IP units only	A comprehensive manual, initially published in the 1940's, on the design, installation, operation, and servicing of reciprocating refrigeration systems. The intended audience is installing contractors, service technicians, and Trane sales and service personnel. Historically, this manual has also been used by HVAC system designers and students. Chapters include Refrigerants. The Refrigeration Cycle. Evaporators: Reciprocating Compressors: Condensers. Thermostatic Expansion Valves: Refrigeration System Controls. Motors and Motor Controls Refrigeration Accessories, Refrigeration Piping. Water Piping: Pipe Hanging and Insulation: Refrigerant Charge Testing Charging, and Start-Up Periodic Maintenance Troubleshooting. Service Operations	$20.15

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number [	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price

APPLICATION MANUALS

Purpose. Comprehensive reference guides to increase awareness and working knowledge of heating. ventilating. and air conditioning (HVAC) system design concepts, component combination possibilities, system operating/control concepts and characteristics. general industry issues, and HVAC fundamentals.

Audience: The intended audience is HVAC system designers. However, depending on the topic. the manual may also be of interest to others in the industry. I-P units only (unless stated otherwise).

Note: There are more application manuals that deal specifically with obsolete Trane products and control systems. If they do not appear on this list, these manuals can be found archived on Trane's Eagle™ product information system (search Literature Type = Application Manual). Contact your local Trane office. or e-mail bookstore@trane.com, for further information on Eagle.

246-52	SYS-APM001-EN	Multiple Chiller System Design and Control (2000)	Dual units (IP/SI)	Details basic multiple-machine chilled water systems. Topics include: components of a chilled water system, chillers in parallel. chillers in series. primary/secondary (decoupled) systems, effects of temperatures and flow, low flow system designs, distributed pumping, tertiary pumping, chiller plant controls, chilled water reset, chiller staging, variable-primary flow (VPF) systems, heat recovery, free cooling, sidestream arrangement. system design considerations, preferential loading, alternate energy sources, series-counterflow arrangement, redundancy, contingency planning, condenser water systems. and cooling tower control.	$16 12
246-52	SYS-APM003-EN	Air-to-Air Energy Recovery in HVAC Systems (2002)	Dual units (IP/SI)	Discusses the various air-to-air energy recovery technologies and their application in HVAC systems. Topics include: why recover energy?. sensible- versus total-energy recovery, effectiveness, unbalanced airflow, outdoor-air preconditioning (or exhaust-air heat recovery). supply-air tempering (or reheat) in series or parallel, ASHRAE Standard 90.1. impact on first cost and operating cost. frost prevention methods. minimizing cross leakage. methods of capacity control. coil loops (or coil runaround loops) fixed-plate heat exchangers (or air-to-air heat exchangers). heat pipes rotary heat exchangers (or heat wheels. enthalpy wheels desiccant wheels). ARI Standard 1060 controlling energy recovery devices in dedicated outdoor-air systems and mixed-air systems (constant volume. VAV) economizer operation active desiccant dehumidification systems. local versus centralized preconditioning.	$16.12

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	SYS-APM004-EN	Dehumidification in HVAC Systems (2002)	Dual units (IP/SI)	Discusses the dehumidification performance of various cold-coil commercial HVAC systems, particularly at part-load conditions Topics include: why control humidity in buildings, sources of moisture, cold coil versus active desiccant dehumidification, full-load versus part-load conditions, ASHRAE weather data, dehumidification performance of constant-volume systems (impact of climate, impact of outdoor-air quantity, impact of packaged direct expansion DX equipment, impact of energy recovery, fan-speed adjustment, mixed-air bypass, return-air bypass, dual path air handlers, supply-air tempering or reheat), dehumidification performance of VAV systems (impact of minimum airflow settings, impact of supply-air temperature reset, supply-air tempering at VAV terminals, using colder supply-air temperatures), dedicated outdoor-air systems (neutral versus cold, to the space versus to other units, design procedures, general application considerations (humidity control during unoccupied periods, building pressure control, airside economizer control), psychrometric analyses, ASHRAE Standards 62 and 90.1.	$16 12
246-52	SYS-APM005-EN	Waterside Heat Recovery in HVAC Systems (2003)	Dual units (IP/SI)	This manual focuses on waterside heat recovery It describes concepts and mechanical implementation, and identifies system-level characteristics for effective operation and control. Topics include. why use heat recovery?, heat-recovery chiller types, system configurations and control modes, heat rejection control, common uses of recovered heat, and analysis methods,	$16.12
246-52	SYS-APM007-EN	Rooftop VAV Systems (2007)	Dual units (IP/SI)	Discusses proper design and application of packaged rooftop, variable air volume (VAV) systems Topics include basic system operation, benefits and drawbacks of a rooftop VAV system, in-depth coverage of the components that make up the system (packaged rooftop unit, VAV terminal units, air distribution system hot water heating system controls) solutions to address common design challenges (zoning ventilation humidity control energy efficiency, acoustics), several system variations (cold air distribution, single-zone VAV air-to-air energy recovery), and common unit-level and system-level control functions (including system optimization strategies)	$16.12
246-52	ISS-APM001-EN	Acoustics in Air Conditioning (2006)	Dual units (IP/SI)	Discusses the fundamentals of sound to aid in the design of quiet HVAC systems Topics include definitions frequency octave bands sound power vs sound pressure sound ratings (A-weighting B-weighting C-weighting noise criteria - NC room criteria – RC sone phone) sound measurement methods equipment sound rating and industry standards (ARI, AMCA ASHRAE) source-path-receiver, sound paths attenuation transmission loss regenerated noise, room effect and fan-generated noise	$16 12

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	APP-APM001-EN	Refrigerating Systems and Machinery Rooms: ASHRAE Standard 15 (2005)	Dual units (IP/SI)	Details ASHRAE Standard 15-2004 as it relates to water-chiller refrigeration systems that require machinery (or mechanical or equipment) rooms. Topics include: ASHRAE Standard 34, refrigerants, refrigerant safety classifications, standards vs. guidelines, ASHRAE Standard 15, machinery room, ventilation for machinery rooms, pressure relief piping, refrigerant monitors, equipment room design specification, indirect open-spray systems, MER, SCBA, and ANSI Standards.	$16 12
246-52	AM-SYS-6	Variable Air Volume Duct Design (1981)	IP Units only	Covers information pertaining to variable volume duct design with special attention given to the static regain method. Topics include: computerized duct design, round vs. rectangular ductwork, duct heat gain, fitting efficiency, duct design rules, typical duct layout errors, high-velocity duct fittings, and static pressure sensor location.	$4.03
246-52	SYS-AM-7	Water Source Heat Pump System Design (1994)	IP Units only	Describes the water source heat pump system, including design, selection, installation, and controls. Topics include: components, basic operation, system design, control recommendations, typical system operation parameters, boiler, cooling tower and pump selection, piping design recommendations, water regulating valve and variable speed pumping, hybrid systems, condensate drain lines, freeze protection	$16 12
246-52	AM-SYS-9	Self-Contained/VAV System Design (1984)	IP Units only	Discusses the various aspects of self-contained/VAV system applications and to provide suggestions that will help the designer make the best possible design decisions when applying this equipment. Topics include: system components, VAV terminal unit types, equipment selection, zoning, interior vs. perimeter zones, cooling tower and condenser water pump and piping, freeze protection, system control, airside economizer, waterside economizer, building pressurization, system-level controls and system optimization	$5.04
246-52	SYS-AM-10	Ice Storage Systems (1987)	IP Units only	Intended to aid designers in the design of ice storage systems using ethylene glycol Topics include types of thermal storage (chilled water, ice, eutectic salts) full storage vs partial storage ice storage selection and capacity chiller selection ice storage system design and control NOTE See also the "Ice Storage Systems" series of Engineered Systems Clinics (ISS-CLC-1, 2 3 4)	$5 04
246-52	SYS-AM-13	Absorption Chiller System Design (1999)	Dual units (IP/SI)	Helps designers correctly apply absorption chillers into systems Topics include, absorption refrigeration cycle types of absorption chillers gas cooling with absorption economic analysis chiller control chiller plant design and control (heat recovery thermal storage heating applications), installation (exhaust stack ASHRAE Standard 15, combustion air) and maintenance considerations	$16 12

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	SYS-AM-14	Designing an "IAQ-Ready" Air Handler System (1994)	IP Units only	Assists consulting engineers and design/built contractors correctly apply air handler (AHU) system options that provide solutions to indoor air quality (IAQ) problems. Topics include dual path air handlers, plate frame energy exchangers, TRAQ dampers, wing coils, stacking, split dehumidification units, Humidpak humidifiers, ASHRAE Standard 62, outdoor airflow measurement and control, coil freeze protection, filtration, microbial contaminants (carbon dioxide – CO2, VOC's, drain pans, access panels, outdoor air intakes), energy recovery (coil runaround loops, fixed plate heat exchangers, energy wheels, heat pipes), acoustics (fan types – Q fan, sound attenuation), system control considerations (ventilation, pressurization, humidity).	$10.08
246-52	SYS-AM-15	Managing Building Moisture (1998)	IP Units only	This manual helps HVAC system designers identify and quantify moisture sources in buildings. It also presents moisture-management techniques related to the building envelope, the occupied space and the mechanical-equipment room. Topics include: indoor air quality (IAQ), comfort, moisture sources, condensation, building envelope, dehumidification, equipment room moisture, ventilation air, moisture and equipment, drain pans, condensate traps, insulation, infiltration, vapor-pressure diffusion, design and control strategies, humid climates, and humidity control.	$16.12
246-52	AM-CON-10	Hot Gas Bypass Control (1982)	IP Units only	Explains the hot gas bypass (HGBP) system by discussing what it is, why and when it should be used, how it is properly applied, and how to size/adjust a HGBP valve. Includes: hot gas bypass to evaporator inlet, hot gas bypass to suction line	$1.26
246-52	AM-CON-17	Building Pressurization Control (1982)	IP Units only	Reviews several key definitions and outlines these space pressure control systems: natural relief, barometric relief, constant volume return fan, constant volume exhaust fan powered barometric relief, coordinated exhaust/supply fan control, coordinated return/supply fan control, volume reset of return fan, direct pressurization control, and sequenced control of multiple exhaust fans. Points out system performance characteristics and suggests control applications. Includes a general discussion, design considerations, system alternatives and recommended equipment for the application.	$5.04
246-52	ICS-AM-4	Control of Ice Storage Systems (1988)	IP Units only	Reviews ice storage controls as a part of a Trane Integrated Comfort system. Topics include: operating modes, control sequence development, demand-limiting vs. time-of-use, data gathering and monitoring and ice inventory, control of system components (chiller, pump, blending valve, bypass valve), system control and monitoring, load profiles, ice inventory, and points lists.	$5.04

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	ED-FAN	Fans and Their Application in Air Conditioning (1982)	IP Units only	Provides a detailed overview of fan fundamentals intended to help system designers understand their performance, selection. application and control Topics include: terminology, testing, fan performance curve, system resistance curve, fan surge, fan paralleling, types of fans (forward curved, backward inclined. radial, tubular, axial, fan laws, industry standards (AMCA), inlet and discharge conditions, transitions, drive and bearing losses. fan modulation devices (scroll volume damper, inlet and discharge dampers, inlet vanes, speed modulation, blade pitch variation). parallel and series operation. draw-thru vs. blow-thru, supply fans in systems, return fans. motors and controls, types of motor starters, power transmission, sound and vibration control, selection. specification, installation, maintenance, troubleshooting, and field measurement methods.	$10.08

Engineers Newsletter Live VIDEOTAPES

Purpose: *Engineers Newsletter Live* is a series of satellite broadcasts focused on the design and control of heating, ventilating, and air conditioning (HVAC) system. The content of each broadcast is technical and educational in nature, not a sales pitch. The series is produced and presented by the Trane Applications Engineering team.

Audience. The intended audience of the broadcast series is HVAC system designers. However, depending on the topic, a given broadcast may also be of interest to others in the industry

Each tape is 90 minutes long. in English, with I-P units displayed only.

Note: Each broadcast has an accompanying *Engineers Newsletter*. Current and past versions of the *Engineers Newsletter* are available on the Trane Web site at www.trane.com/commercial/library/newsletters asp.

246-52	APP-APV001-EN	The Low Dollar Chiller Plant (August 10. 1999)	IP Units or VHS format	By viewing this broadcast. the audience will gain an understanding of low-flow chiller system designs that will result in reduced capital. energy and installed costs Topics include· low flow. cooling tower performance chilled-water coil performance chiller-tower optimization series chillers variable-primary-flow systems	$35.26
246-52	APP-APV002-EN	Specifying Quality Sound (March 15 2000)	IP Units or VHS format	After viewing this broadcast you will understand how product sound data is developed and how to performance optimize an air-handling unit Topics include space sound level targets (NC. RC) acoustical analysis source-path-receiver method. ARI 260 cost effective noise control ideas (fan types. air handler casing wall construction return air path silencers)	$35 26
246-52	APP-APV003-EN	Lowering Supply Air Temperatures (May 3. 2000)	IP Units only	This broadcast explores the impact on system first cost and operating costs when lower air temperature principles are applied using modern-day equipment and technologies The common concerns associated with low-temperature air systems are discussed along with strategies to address these issues Topics include cold air chilled-water coil performance, fan-powered VAV boxes vapor retarder building pressurization. diffuser selection	$35 26

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	APP-APV004-EN	Advanced System Control Strategies (June 28 2000)	IP Units or VHS format	This broadcast discusses key air-handling system control issues like building pressure control, system ventilation control, damper control. and various reset strategies Advanced control ideas related to the impact of energy recovery within systems is also covered. All of these topics are discussed with an eye toward compliance with ASHRAE Standards 62 and 90.1, while maintaining comfort and minimizing system operating and life-cycle costs. Topics include: ventilation reset, dual versus single damper mixing boxes, fan-pressure optimization. optimized damper control, building pressurization control, control of air-to-air energy recovery (economizer, capacity modulation)	$35.26
246-52	APP-APV005-EN	Building Moisture and Humidity Management (August 30, 2000)	IP Units or VHS format	After viewing this satellite broadcast you will have a better understanding of the issue of building moisture control and the part-load dehumidification performance of various constant-volume system configurations. Other topics include: ASHRAE weather data. sensible- (peak dry bulb) and latent-design (peak dew point) conditions, psychrometric analysis (full load and part load), impact of total energy recovery, mixed-air bypass, return-air bypass. split dehumidification unit (SDU). supply air tempering (reheat), ASHRAE Standard 90.1.	$35.26
246-52	APP-APV006-EN	Air-to-Air Energy Recovery (October 27. 2000)	IP Units or VHS format	This broadcast addresses the available energy-recovery technologies: how they are applied in various systems; whether or not the investment is worth the return; and what works best and why. Topics include: sensible- versus total-energy recovery, effectiveness. balanced versus unbalanced airflows, coil loops. heat pipes, fixed-plate heat exchangers. sensible wheels (heat wheels). total-energy wheels (enthalpy wheels). psychrometric analysis (cooling and heating). equipment downsizing. frost prevention. capacity modulation. VAV systems, constant-volume systems dedicated outdoor-air systems (cold and neutral), control modes for all these systems ASHRAE Standard 90 1	$35.26
246-52	APP-APV007-EN	Geothermal Heat Pump Systems (May 23 2001)	IP Units or VHS format	By watching the broadcast participants will understand the critical factors in the success of geothermal heat pump systems consider the advantages and disadvantages understand the economic considerations and system variations Topics include conventional boiler-cooling tower WSHP system. geothermal heat pump system design process (site evaluation loop sizing. life-cycle cost evaluation) types of geothermal heat exchangers (vertical horizontal spiral or slinky) surface water systems ground temperatures GLHEPRO loop design software hybrid systems ARI/ASHRAE/ISO Standard 13256-1. ASHRAE Standard 90 1	$35 26

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number [	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	APP-APV008-EN	Dedicated Outdoor-Air Systems (September 19, 2001)	IP Units or VHS format	By watching the broadcast, participants will learn when separate conditioning of ventilation air is best applied: understand the pros and cons of dedicated outdoor-air ventilation systems in comparison to other system types, and understand the code requirements. Other topics include: system configurations (neutral-to-space, cold-to-space, neutral-to-units, cold-to-units), neutral versus cold air, system design procedures, system optimization ideas, application considerations (recovered heat for reheat, after-hours humidity control, building pressurization, economizer operation, outdoor-air preconditioning with air-to-air energy recovery) and ASHRAE Standard 90.1.	$35.26
246-52	APP-APV009-EN	Split System Refrigerant Piping Design (December 5, 2001)	IP Units only	A lower-cost and more reliable system is achieved by applying the "new rules" for sizing refrigerant lines with R-22 Trane scroll compressor split systems. The manufacturer should size the line whenever possible, but since some of the techniques presented in this broadcast wouldn't have been considered good practice in the past, it's important to understand why. The purpose of this broadcast is to learn how Trane has refocused the piping practices to achieve a less-costly and more reliable operating system; discover the traits of effective refrigerant piping; understand when to use the various line-sizing tools, and learn when and when not to use hot gas bypass.	$35.26
246-52	APP-APV012-EN	Coil Fundamentals (February 27, 2002)	IP Units or VHS format	This broadcast reviews the basic principles of heat transfer and how they're exploited in coil technology. Topics include: how chilled-water coil selections affect the entire system, how to properly apply DX coils in cooling applications, the advantages and disadvantages of face-split, row-split, and intertwined refrigerant coil arrangements, and how to avoid freeze-ups and operational problems in steam systems.	$35.26
246-52	APP-APV013-EN	Commercial Building Pressurization (April 17, 2002)	IP Units or VHS format	This broadcast reviews the basic principles of building pressure control in commercial buildings. Topics include: why control building pressure: (impact of overly positive or overly negative building pressure; what impacts building pressure? (intermittent local exhaust fan operation, airside economizer, stack effect, wind), natural relief, barometric relief (local in the space, or central at the unit), central relief fan (control options), central return fan (control options), and pressure sensor (indoor and outdoor) location and selection	$35.26
246-52	APP-APV014-EN	Underfloor Air Distribution (February 12, 2003)	IP Units or VHS format	This satellite broadcast discusses the benefits and issues associated with underfloor air distribution (UAD) systems and common system configurations. Topics include: potential benefits and potential problems; floor options, type of floor diffusers, types of terminal equipment, common system configurations, and control considerations (economizer, dehumidification, heating, plenum pressure control)	$35.26

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	APP-APV015-EN	Variable-Primary-Flow Chilled-Water Systems (May 14, 2003)	IP Units only	This satellite broadcast discusses variable-primary-flow (VPF) chilled-water systems. Topics include: comparison of a primary-secondary (decoupled) system to a variable-primary-flow system, advantages of VPF systems, proper selection of chillers for VPF applications, control sequence of operation, impact of VPF on plant design (series chillers, retrofit projects, manifolded or dedicated pumps, different type and size of chillers), and ASHRAE Standard 90.1 requirements.	$35.26
246-52	APP-APV016-EN	High Performance Schools (October 1, 2003)	IP Units or VHS format	This broadcast briefly reviews common attributes of High Performance School initiatives. Topics include: government initiatives, elements of High Performance School programs, indoor air quality, contaminant source control (location of outdoor air intakes), ventilation (calculating design ventilation rates, demand-controlled ventilation), building moisture control (moisture sources, methods for minimizing moisture problems), improving dehumidification performance of HVAC system (chilled-water terminal systems, single-zone DX systems, central VAV air-handling systems), acoustics in classrooms (ANSI/ASI Standard 12.60, reverberation time, absorption, background sound), lowering background sound of HVAC system (acoustical analysis, attenuation options), challenges of financing educational priorities (capital versus operating budgets, potential sources of funding, life-cycle cost analysis).	$35.26
246-52	APP-APV017-EN	HVAC and LEED (February 11 2004) - VHS format	IP Units only	This broadcast provides an overview of the U.S. Green Building Council's "Leadership in Energy and Environmental Design" (LEED) Green Building Rating System, with specific focus placed on how it relates to HVAC systems	$35.26
246-52	APP-CMC017-EN	HVAC and LEED (February 11 2004) - DVD format	IP Units only	This broadcast provides an overview of the U.S. Green Building Council's "Leadership in Energy and Environmental Design" (LEED) Green Building Rating System, with specific focus placed on how it relates to HVAC systems.	$35.26
246-52	APP-APV018-EN	Improving Dehumidification in Restaurants and Retail Stores (May 5, 2004) - VHS format	IP Units only	This broadcast discusses why humidity control is important for restaurants and retail stores (dry goods and wet goods), demonstrates how the constant-volume direct expansion (DX) equipment that is commonly used in these building types may not dehumidify adequately at part load, proposes some system designs that can offer enhanced humidity control, and discusses how ventilation requirements affect system design	$35.26
246-52	APP-CMC018-EN	Improving Dehumidification in Restaurants and Retail Stores (May 5, 2004) - DVD format	IP Units only	This broadcast discusses why humidity control is important for restaurants and retail stores (dry goods and wet goods), demonstrates how the constant-volume direct expansion (DX) equipment that is commonly used in these building types may not dehumidify adequately at part load, proposes some system designs that can offer enhanced humidity control, and discusses how ventilation requirements affect system design	$35.26
246-52	APP-APV019-EN	Small Chilled-Water Systems – Design and Application (September 15, 2004) - VHS format	IP Units only	This broadcast discusses which small-capacity applications favor chilled water, and explains how to simplify the design, control and operation of small chilled-water systems. For the purpose of this broadcast, a 'small' chilled-water system is less than 120 tons in capacity, and contains one or two air-cooled chillers	$35.26

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	APP-CMC003-EN	Lowering Supply Air Temperatures (May 3 2000)	IP Units only, DVD format	This broadcast explores the impact on system first cost and operating costs when lower air temperature principles are applied using modern-day equipment and technologies. The common concerns associated with low-temperature air systems are discussed along with strategies to address these issues. Topics include: cold air, chilled-water coil performance, fan-powered VAV boxes, vapor retarder, building pressurization, diffuser selection.	$55.42
246-52	APP-CMC009-EN	Split System Refrigerant Piping Design (December 5, 2001)	IP Units only, DVD format	A lower-cost and more reliable system is achieved by applying the "new rules" for sizing refrigerant lines with R-22 Trane scroll compressor split systems. The manufacturer should size the line whenever possible, but since some of the techniques presented in this broadcast wouldn't have been considered good practice in the past, it's important to understand why. The purpose of this broadcast is to learn how Trane has refocused the piping practices to achieve a less-costly and more reliable operating system; discover the traits of effective refrigerant piping; understand when to use the various line-sizing tools; and learn when and when not to use hot gas bypass.	$55.42
246-52	APP-CMC015-EN	Variable-Primary-Flow Chilled-Water Systems (May 14, 2003)	IP Units only, DVD format	This satellite broadcast discusses variable-primary-flow (VPF) chilled-water systems Topics include: comparison of a primary-secondary (decoupled) system to a variable-primary-flow system, advantages of VPF systems, proper selection of chillers for VPF applications, control sequence of operation, impact of VPF on plant design (series chillers, retrofit projects, manifolded or dedicated pumps, different type and size of chillers), and ASHRAE Standard 90 1 requirements.	$55.42
246-52	APP-APV017-EN	HVAC and LEED (February 11 2004) - VHS format	IP Units only, VHS format	This broadcast provides an overview of the U.S. Green Building Council's "Leadership in Energy and Environmental Design" (LEED) Green Building Rating System, with specific focus placed on how it relates to HVAC systems	$35 26
246-52	APP-CMC017-EN	HVAC and LEED (February 11 2004) - DVD format	IP Units only DVD format	This broadcast provides an overview of the U S Green Building Council's "Leadership in Energy and Environmental Design" (LEED) Green Building Rating System, with specific focus placed on how it relates to HVAC systems	$55 42
246-52	APP-APV018-EN	Improving Dehumidification in Restaurants and Retail Stores (May 5 2004) - VHS format	IP Units only, VHS format	This broadcast discusses why humidity control is important for restaurants and retail stores (dry goods and wet goods) demonstrates how the constant-volume direct expansion (DX) equipment that is commonly used in these building types may not dehumidify adequately at part load proposes some system designs that can offer enhanced humidity control and discusses how ventilation requirements affect system design	$35 26
246-52	APP-CMC018-EN	Improving Dehumidification in Restaurants and Retail Stores (May 5 2004) - DVD format	IP Units only DVD format	This broadcast discusses why humidity control is important for restaurants and retail stores (dry goods and wet goods) demonstrates how the constant-volume direct expansion (DX) equipment that is commonly used in these building types may not dehumidify adequately at part load proposes some system designs that can offer enhanced humidity control and discusses how ventilation requirements affect system design	$55 42

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number [	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	APP-CMC019-EN	Small Chilled-Water Systems – Design and Application (September 15, 2004) - DVD format	IP Units only	This broadcast discusses which small-capacity applications favor chilled water, and explains how to simplify the design, control, and operation of small chilled-water systems. For the purpose of this broadcast, a "small" chilled-water system is less than 120 tons in capacity, and contains one or two air-cooled chillers.	$55 00
246-52	APP-APV019-EN	Small Chilled-Water Systems – Design and Application (September 15, 2004) - VHS format	IP Units only. VHS format	This broadcast discusses which small-capacity applications favor chilled water, and explains how to simplify the design, control, and operation of small chilled-water systems. For the purpose of this broadcast, a "small" chilled-water system is less than 120 tons in capacity, and contains one or two air-cooled chillers.	$35.26
246-52	APP-CMC019-EN	Small Chilled-Water Systems – Design and Application (September 15, 2004) - DVD format	IP Units only. DVD format	This broadcast discusses which small-capacity applications favor chilled water, and explains how to simplify the design, control, and operation of small chilled-water systems. For the purpose of this broadcast, a "small" chilled-water system is less than 120 tons in capacity, and contains one or two air-cooled chillers.	$55 42
246-52	APP-CMC020-EN	Cooling Towers and Condenser-Water Systems – Design and Operation (January 26 2005)	IP Units only. DVD format	Proper design of a chilled water system can greatly affect its energy use and life-cycle costs. Fine-tuning the design and operation can go a long way toward minimizing energy costs—but it also requires a good understanding of how the system components affect each other. This ENL examines cooling tower–chiller interaction at various conditions, and discusses techniques to minimize initial and/or operating costs	$55.42
246-52	APP-CMC022-EN	Energy Analysis – LEED™ Modeling (May 25 2005)	IP Units only DVD format	Energy models are a critical requirement in the U S Green Building Council s LEED-NC rating system Under Energy & Atmosphere (EA) Credit 1 a prospective LEED building can earn up to 10 points if the project team can demonstrate optimized energy performance The greater the reduction in energy cost the more points may be awarded This broadcast will discuss methods of building design and operation to reduce energy costs (including daylighting, HVAC design parameters, and control options) and how to earn EA Credit 1 points by effectively modeling energy-saving designs	$55.42
246-52	APP-CMC023-EN	ASHRAE Standard 62 1-2004 Ventilation Requirements (September 21 2005)	IP Units only DVD format	In the 2004 version of ASHRAE Standard 62 1 the entire Ventilation Rate Procedure (VRP) has been revamped This procedure is used to determine the minimum ventilation requirements for commercial institutional and high-rise residential buildings The new VRP changes the requirements for breathing-zone and system-intake ventilation airflow by better accounting for the 'additivity of contaminants from different sources (people vs building) It also details system ventilation efficiency for multiple-zone systems This ENL takes a detailed look at the design and operation of various ventilation systems and their compliance with the new requirements	$55 42

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	APP-CMC024-EN	CO2-Based Demand-Controlled Ventilation (November 16, 2005)	IP Units only. DVD format	The mobility of a building's occupants poses a ventilation challenge...to bring enough outdoor air into the building to help assure good indoor air quality without wasting energy by bringing in (and conditioning) too much. This ENL discusses the use of carbon-dioxide (CO2) sensors to vary outdoor airflow based on actual demand. It also considers the related requirements for compliance with ASHRAE Standard 62.1-2004.	$55.42
246-52	APP-CMC025-EN	Variable-Speed Drives and Their Effect on HVAC System Components (February 1. 2006)	IP Units only. DVD format	Variable-speed drives (VSDs) can save energy, but the savings may not equal "the cube of the speed" in every case. This ENL looks at how VSDs affect the performance of pumps, cooling-tower fans, air-handler fans, and chillers. and discusses the differences in VSD control in each of these applications.	$55 42
246-52	APP-CMC026-EN	HVAC Systems and Airside Economizers (May 3. 2006)	IP Units only, DVD format	Airside economizers can lower annual energy costs by using outdoor air to help satisfy the building cooling load. This ENL discusses their use and control in constant- and variable-volume airside systems. It also considers the implications of the energy-use requirements in ASHRAE Standard 90.1 for airside economizing.	$55.42
246-52	APP-CMC027-EN	HVAC Design for Places of Assembly (September 13. 2006)	IP Units only. DVD format	Places of assembly such as auditoriums, gymnasiums and houses of worship create design and operational challenges for HVAC systems. Loads and ventilation requirements due to the number of people in the space are a challenge for any HVAC system. However. these issues can be overcome with proper system knowledge, design and operation.	$55 42
246-52	APP-CMC028-EN	Energy-Saving Strategies for Rooftop VAV Systems (November 8 2006)	IP Units only. DVD format	Rooftop variable-air-volume (VAV) systems are used to provide comfort in a wide range of building types and climates. This ENL discusses HVAC system design and operating strategies that can save energy in these systems Topics include. high efficiency equipment air-to-air energy recovery. relief fan vs return fan evaporative condensing. hot gas bypass. hot gas reheat. maintenance program. fan-powered VAV single-zone VAV. airside economizer fan-pressure optimization optimum start. optimum stop. supply-air-temperature reset. ventilation optimization (demand-controlled ventilation ventilation reset) TRACE 700	$55 42
246-52	APP-CMC029-EN	Waterside Heat Recovery (February 21 2007)	IP Units only DVD format	Green building initiatives. coupled with changes in building codes and standards have renewed interest in applications that recover condenser heat from water-cooled chillers This ENL describes how waterside energy recovery works what is necessary for implementation and identifies system-level characteristics for effective operation and control	$55 42

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	APP-CMC030-EN	Improving Dehumidification in HVAC Systems (September 12, 2007)	IP Units only, DVD format	Managing humidity should be a key design consideration in any HVAC application. This ENL will discuss the challenge of dehumidifying at part load, for both chilled-water and cycling compressor systems, and describe ways to improve the dehumidification performance of commonly-used HVAC systems. Topics include: modulating chilled water coil, cycling compressors, impact of ventilation, impact of oversizing, total-energy recovery, cool-reheat (hot gas reheat, condenser water heat recovery), face-and-bypass dampers (mixed-air bypass, return-air bypass), reduce airflow (multi-speed fan, VAV, single-zone VAV), dual paths (dedicated outdoor-air system, split dehumidification unit or SDU), desiccants (CDQ), and TRACE 700 humidity modeling and reports.	$55 42
246-52	APP-CMC031-EN	LEED® Case Studies (November 14, 2007)	IP Units only, DVD format	As of the broadcast date, the number of LEED certified buildings stands at over 800, with more than 6,500 additional buildings in the pipeline for certification. With USGBC's aggressive goal of having 100,000 certified buildings by 2010 there is no doubt this will be a major impact on the built environment. Sustainable design, construction, and operation will be increasingly requested by building owners. This broadcast will provide an in-depth review of LEED certified projects in a variety of building types and geographic locations. Unlike the previous LEED-related broadcasts, this ENL provides interviews with various project stakeholders to review LEED credits that were obtained for each project, the original design intent, challenges and lessons learned.	$55.42
			HVAC SYSTEM DESIGN TOOLS		
246-52	94 24	Ductulator® (1998)	Dual units (IP/SI)	Hand held rotating calculator used for sizing supply and return duct systems using the equal friction design method. Includes scales for friction loss per unit length, air volume, air velocity round duct diameter, and rectangular duct diameters. One side uses I-P units, the other side uses SI units. Includes a protective sleeve with ASHRAE recommended design air velocities for system components/applications	$8 06
246-52	1-43 190	Psychrometric Chart (1983) - standard altitude - 11" x 17" pad of 25 sheets	I-P Units	Chart used for determining properties of moist air and analyzing air conditioning processes	$7 56
246-52	1-43.191	Psychrometric Chart (1983) - standard altitude - 11" x 17" laminated chart	I-P Units	Chart used for determining properties of moist air and analyzing air conditioning processes.	$15 11
246-52	1-43 192	Psychrometric Chart (1983) - standard altitude - 8.5 x 11 pad of 25 sheets	I-P Units	Chart used for determining properties of moist air and analyzing air conditioning processes	$5 04

EDUCATIONAL LITERATURE AND MATERIALS

SIN	Order Number	Title (Publication Date)	IP or DUAL Units	Abstract	GSA Price
246-52	1-43.195	Psychrometric Chart (1983) - high altitude (24 in. Hg) - 8.5" x 11" pad of 25 sheets	I-P Units	Chart used for determining properties of moist air and analyzing air conditioning processes.	$5 04
246-52	1-43.196	Psychrometric Chart (1983) - standard altitude - 11" x 17" pad of 25 sheets	SI Units	Chart used for determining properties of moist air and analyzing air conditioning processes.	$7.56
246-52	1-43.197	Psychrometric Chart (1983) - standard altitude - 11" x 17" laminated chart	SI Units	Chart used for determining properties of moist air and analyzing air conditioning processes.	$15.11
246-52	OSA 214 E	Psychrometric Chart (1996) - standard altitude - 8.5" x 11" pad of 25 sheets	SI Units	Chart used for determining properties of moist air and analyzing air conditioning processes.	$7.56
246-52	1-43.198	Equilibrium Chart for Lithium Bromide Solutions (1983) - (1) 11" x 17" laminated chart	I-P Units	Chart used for determining properties of a lithium bromide solution used in the absorption refrigeration cycle	$15.11

NOTES:

(1) Minimum Order Policy Minimum order amount is $25 Orders which do not total $25 will be billed at $25

(2) Discount to Certified Government Educational Training Facilities Trane will discount the following products to certified Government educational training facilities *Trane Air Conditioning Manual* *Trane Reciprocating Refrigeration Manual* and the Ductulator A Customer from a certified Government educational training facility should contact Trane for information on pricing on these products

(3) Shipping/Delivery Literature orders shipped within the United States are shipped FedEx Ground and are typically delivered within 3 to 6 business days (depending on the destination) A US$10 shipping and handling fee is added to each order shipped within the United States Literature orders shipped outside the United States are shipped DHL and are typically delivered within 4 to 7 business days (depending on the destination and local customs) A US$30 shipping and handling fee is added to each order shipped outside of the United States

(4) Return Policy. All literature returns must receive prior authorization by calling 608-787-4153 or 608-787-3684 There will be a 15 percent restocking charge on all literature returned Literature returns will only be accepted up to 90 days after the ship date

(5) Order Form - The Trane Educational Literature and Materials Government Order Form is available at www trane com/Government/Federal/EM-GSA pdf

SIN	Reference Number	Trane Position Title	Labor Categories - Exempt/Non-Exempt under Service Contract Act	Description	GSA Ceiling Rate (per Hour) West	Central	Northeast	Southeast
246-1000/ 246-51	S020	HVAC Field Technician	Non-Exempt	Functional Description: Responsible for retrofit and repair of environmental-comfort systems, utilizing knowledge of air conditioning theory, pipe fitting, and mechanical layouts. **Minimum Experience:** Typically requires 5 years of related experience **Minimum Education:** Associate's degree or equivalent from a Technical/Trade School with a certificate in Heating, Ventilation, and Air Conditioning and five (5) years related experience, or seven (7) years related experience, or equivalent combination of education and experience	**$129.54**	**$157.95**	**$157.56**	**$121.25**
246-1000/ 246-51	S021	HVAC Field Technical – Apprentice	Non-Exempt	Functional Description: Assists HVAC Field Technicians in the installation and repair of environmental control systems, utilizing knowledge of refrigeration theory, control systems, pipe fitting, and structural layouts. **Minimum Experience:** Typically requires 6 months of related experience **Minimum Education:** Associate's degree or equivalent from two-year college or technical school with a certificate in Heating, Ventilation, and Air Conditioning; or six months to one-year related experience and/or training, or equivalent combination of education and experience	**$112.49**	**$136.05**	**$125.37**	**$111.83**
246-1000/ 246-51	S022	HVAC Field Technician – Team Leader	Non-Exempt	Functional Description: Performs and directs HVAC Field Technicians who accomplish the repair/retrofit/replacement installation of environment comfor systems utilizing knowledge of air conditioning theory, pipe fitting and mechanical layouts **Minimum Experience:** Typically requires 5 years of related experience **Minimum Education:** Associate's degree or equivalent from two-year college or technical school with a certificate in Heating, Ventilation, and Air Conditioning, and five (5) years HVAC experience, or equivalent combination of education and experience. Must have knowledge of various HVAC products, systems, electronics, and pneumatic controls	**$162.34**	**$165.54**	**$184.48**	**$135.18**
246-1000/ 246-51	S049	HVAC Field Technician: Senior	Non-Exempt	Functional Description Applies training, knowledge, and experience of HVAC systems at a Journeyman level HVAC Service Technician. Performs all work in the service and maintenance field on all major types of equipment, and is responsible for retrofit and repair of environmental-comfort systems, utilizing knowledge of air conditioning theory, pipe fitting, and mechanical layouts. **Minimum Experience:** Typically requires 7 years of related experience **Minimum Education:** Associate's degree (A.A.), or equivalent from a technical/trade school with a certificate in Heating, Ventilation, and Air Conditioning and seven (7) years related experience, or ten (10) years related experience, or equivalent combination of education and experience	**$149.12**	**$160.08**	**$164.41**	**$130.94**

SIN	Reference Number	Trane Position Title	Labor Categories - Exempt/Non-Exempt under Service Contract Act	Description	GSA Ceiling Rate (per Hour) West	Central	Northeast	Southeast
246-1000/ 246-51	S118	Project Administrator – Service	Non-Exempt	Functional Description: Possesses project documentation, materials, job costing, status monitoring, invoicing, and administrative closeout of a service project. This position is required to closely interact with the Project Manager and assigned project staff to ensure the timely completion of services scope of work. **Minimum Experience:** Typically requires 6 months of related experience. **Minimum Education:** One-year certificate from college or technical school, or six (6) months to two (2) years or related experience and/or training; or equivalent combination of education and experience. Familiarity with the operation of Energy Management Systems, HVAC Systems, and/or Temperature Controls preferred	$108.45	$97.67	$102.06	$101.03
246-1000/ 246-51	S154	Service Helper	Non-Exempt	Functional Description: Assists HVAC Field Technicians in routine maintenance and inspections on existing systems. **Minimum Experience:** Typically requires 1 year of related experience involving building trades or operation and service to buildings or HVAC **Minimum Education:** High School Diploma or GED	$110.33	$108.60	$114.47	$113.68
246-1000/ 246-51	S082	Project Engineer II – Controls	Exempt	Functional Description: Performs hardware and software design activities for building automation systems. Applies engineering principles and practices for work on assigned projects. Designs cost effective control solutions to meet project requirements. Works directly on the project team to assist the Project Manager with project commissioning **Minimum Experience:** Typically requires 3-6 years of related experience **Minimum Education:** Bachelor's degree in Engineering and 3-4 years experience, or Associate's degree or equivalent from two-year college or technical school in electrical engineering and a certificate in HVAC or AAS and BAS in electrical engineering and 5-6 years related experience, or equivalent combination of education and experience	$231.88	$137.08	$131.76	$165.60
246-1000/ 246-51	S083	Project Engineer II – Energy	Exempt	Functional Description: Performs technical analysis, review, measurement, and verification of financially guaranteed projects. Provides technical analysis and review for performance monitoring of contracts and applies engineering principles and practices on assigned projects **Minimum Experience:** Typically requires 3 years of related experience **Minimum Education:** Bachelor's degree in Engineering and three (3) years experience, or equivalent combination of education and experience. Knowledge and experience with HVAC, control electrical systems and proficiency with energy analysis tools such as TRACE and system analyzer. Working knowledge of cost and savings studies incorporating energy conservation measures	$234.86	$173.67	$201.49	$139.82

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GSA Pricing of Labor Under Schedule 84 SIN 246-1000 Ancillary Services and SIN 246-51 Installation Involving Construction

Price List for Wage Rates

For Period from 4/28/13 through 8/27/14

SIN	Reference Number	Trane Position Title	Labor Categories - Exempt/Non-Exempt under Service Contract Act	Description	GSA Ceiling Rate (per Hour) West	Central	Northeast	Southeast
246-1000/ 246-51	S084	Project Engineer II – Systems	Exempt	Functional Description: Performs complex planning, estimating and design activities for the layout of equipment, commercial and industrial facilities. Determines the scope of projects, estimates cost, designs and documents HVAC and electrical systems and procures components. Works directly on the project team to assist the Project Manager with project commissioning. **Minimum Experience:** Typically requires 3-6 years of related experience. **Minimum Education:** Bachelor's degree in Engineering and 3-4 years related experience; or Associate's degree (A.A.) or equivalent from two-year college or technical school in electrical engineering and a certificate in HVAC or AAS and BAS in electrical engineering and 5-6 years related experience; or equivalent combination of education and experience.	**$234.86**	**$143.69**	**$201.49**	**$139.82**
246-1000/ 246-51	S085	Project Manager – Controls	Exempt	Functional Description: Manages all aspects of HVAC control projects from beginning to end, with direct responsibility for project execution while leading a team, or teams, to accomplish specific objectives in a given time frame and with available resources. Responsible for the administration, implementation and management of HVAC control projects. Ensures assigned projects' scope of work, schedule, and budget are achieved. **Minimum Experience:** Typically requires 2-6 years of related experience. **Minimum Education:** Bachelor's degree in Electrical or Mechanical Engineering or Construction Management with a minimum of two (2) years of project management controls, HVAC or related experience or a minimum of six (6) years of project management controls, HVAC or related experience or an equivalent combination of education and experience.	**$187.90**	**$176.86**	**$160.59**	**$164.69**
246-1000/ 246-51	S089	Project Manager Contracts	Exempt	Functional Description Manages all aspects of HVAC contract projects from beginning to end with direct responsibility for project execution while leading a team or teams to accomplish specific objectives in a given time frame and with available resources. Responsible for the administration, implementation and management of control projects. Accountable for assigned projects' scope of work, schedule and budget. **Minimum Experience:** Typically requires 2-6 years of related experience. **Minimum Education:** Bachelor's degree in Electrical or Mechanical Engineering or Construction Management with a minimum of two (2) years of project management (HVAC systems, equipment, installation or service) or related experience or a minimum of six (6) years of project management (HVAC systems, equipment, installation, or service) or related experience or an equivalent combination of education and experience.	**$200.74**	**$150.33**	**$166.43**	**$165.20**

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GSA Pricing of Labor Under Schedule 84 SIN 246-1000 Ancillary Services and SIN 246-51 Installation Involving Construction

Price List for Wage Rates

For Period from 8/28/13 through 8/27/14

SIN	Reference Number	Trane Position Title	Labor Categories - Exempt/Non-Exempt under Service Contract Act	Description	GSA Ceiling Rate (per Hour) West	Central	Northeast	Southeast
246-1000/ 246-51	S104	Project Engineer Team Leader	Exempt	Functional Description: Performs hardware and software design activities for building automation systems. Applies engineering principles and practices for work on assigned projects. Designs cost effective control solutions to meet project requirements. Works directly with the project team to assist with project commissioning. Directs and assists other project engineers on the team related to opportunities and obstacles in managing the engineering workload. Possesses a familiarity with the concepts of new construction, renovation/retrofit; performance contracting, and service project management **Minimum Experience:** Typically requires 2-4 years of related experience. **Minimum Education:** Bachelor's degree in engineering and two (2) to three (3) years experience; or Associate's degree or equivalent from two-year college or technical school in electrical engineering and a certificate in HVAC or AAS and BAS in electrical engineering and three (3) to four (4) years related experience; or equivalent combination of education and experience.	$234.86	$176.63	$201.49	$165.60
246-1000/ 246-51	S119	Project Administrator – Contracting	Non-Exempt	Functional Description: Responsible for project set-up, document control, data entry, billing, contract monitoring, and administrative closeout of each project. This position is required to closely interact with the Project Manager and assigned project staff to assist with the timely completion of each project. **Minimum Experience:** Typically requires 6 months of related experience **Minimum Education:** One-year certificate from college or technical school or six (6) months of related experience and/or training, or equivalent combination of education and experience. Familiarity with the operation of Energy Management Systems, HVAC Systems and/or Temperature Controls preferred	$103.58	$112.07	$126.48	$112.47
246-1000/ 246-51	S120	Computer Aided Drafter	Precedent G/E - 3-10 Ton Packaged Heat Pump Heat/Cooling Rooftop Unit	Functional Description Responsible for creating computer aided design (CAD) drawings using standard CAD digitizing techniques and skills. Also responsible for the system graphics required to support automation systems design. **Minimum Experience:** Typically requires 6 months of related experience **Minimum Education:** Associate's degree from college or technical school in Computer Aided Design or Drafting, or at least six (6) months related experience and/or training, or equivalent combination of education and experience. Working knowledge of AutoCAD or other computer aided design. Microsoft Office software required.	$111.15	$77.51	$90.24	$75.42
246-1000/ 246-51	S121	Controls Technician	Non-Exempt	Functional Description Performs more complex commissioning, diagnosis, and repair of environmental-control systems, utilizing knowledge of electronics, direct digital control, airflow, hydronics, refrigeration theory, and control techniques. **Minimum Experience:** Typically requires 6 months of related experience **Minimum Education:** Associate's degree or equivalent from two-year college or technical school or six (6) months experience in control systems, or equivalent combination of education and experience.	$145.54	$134.70	$157.95	$139.30

TRANE

GSA Pricing of Labor Under Schedule 84 SIN 246-1000 Ancillary Services and SIN 246-51 Installation Involving Construction

Price List for Wage Rates

For Period from 3/28/13 through 3/27/14

SIN	Reference Number	Trane Position Title	Labor Categories - Exempt/Non-Exempt under Service Contract Act	Description	GSA Ceiling Rate (per Hour) West	Central	Northeast	Southeast
246-1000/ 246-51	S152	Controls Technician – Entry Level	Non-Exempt	Functional Description: Performs and assists under direction complex commissioning, diagnosis, and repair of environmental-control systems, utilizing knowledge of electronics, direct digital control, airflow, hydronics refrigeration theory, and control techniques. Performs these tasks on simple control projects **Minimum Experience:** Typically requires 6 months of related experience **Minimum Education:** Associate's degree or equivalent from two-year college or technical school or six (6) months experience in control systems or equivalent combination of education and experience	**$145.54**	**$116.11**	**$129.87**	**$139.29**
246-1000/ 246-51	S167	Project Engineer I – Systems	Non-Exempt	Functional Description: Project development - Performs planning, estimating and design activities for the layout of equipment, commercial and industrial facilities. Assists in determining the scope of projects, estimates cost, designs and documents HVAC and electrical systems and procures components. Works directly on the project team to assist the Project Manager with project commissioning **Minimum Experience:** Typically requires 4-5 years of related experience **Minimum Education:** Associate's degree or equivalent from two-year college or technical school in electrical engineering and a certificate in HVAC or AAS and BAS in electrical engineering and 4-5 years related experience or equivalent combination of education and experience	**$96.63**	**$98.73**	**$136.70**	**$120.53**
246-1000/ 246-51	S168	Project Engineer I – Energy	Non-Exempt	Functional Description: Project development - provides technical analysis and review for performance monitoring on contracts. Applies knowledge of technology and applications on assigned projects **Minimum Experience:** Typically requires 5-6 years of related experience **Minimum Education:** Knowledge and 5-6 years experience with HVAC, control electrical systems and proficiency with energy analysis tools such as TRACE and system analyzer. Working knowledge of cost and savings studies incorporating energy conversation measures	**$96.63**	**$98.73**	**$136.70**	**$120.53**
246-1000/ 246-51	S169	Project Engineer I – Controls	Non-Exempt	Functional Description: Project development which includes applying engineering principles and practices on assigned projects. Designs cost effective control solutions to meet project requirements. Works directly on the project team to assist with project commissioning **Minimum Experience:** Typically requires 4-5 years of related experience **Minimum Education:** Associate's degree or equivalent from two-year college or technical school in electrical engineering and a certificate in HVAC or AAS and BAS in electrical engineering and 4-5 years related experience or equivalent combination of education and experience	**$96.63**	**$98.73**	**$136.70**	**$120.53**

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GSA Pricing of Labor Under Schedule 36 SIN 246-1000 Ancillary Services and
SIN 246-51 Installation Involving Construction

Price List for Wage Rates

For Period from 8/28/13 through 9/27/14

SIN	Reference Number	Trane Position Title	Labor Categories - Exempt/Non-Exempt under Service Contract Act	Description	GSA Ceiling Rate (per Hour) West	Central	Northeast	Southeast

NOTES ON OVERTIME:

Labor Categories under SIN 246-1000 Ancillary Services and SIN 246-51 Installation Involving Construction

The rates shown above are for labor services performed during standard work hours and are the GSA ceiling rates (maximum price) for the region. These rates are adjusted to the Trane Commercial Sales Office (CSO) within the region where the work will be performed. An overtime premium is not charged for for exempt overtime labor services (See Service Contract Act Exempt / Non-Exempt listing). That is not the case for non-exempt positions.

Overtime Rates. For NE labor services performed after the standard workday (typically 5:00pm), the published rates in appendices do not apply and this Standard-Time (ST) rate should be multiplied by 1.5 to obtain the Over-Time (OT) rate for applicable NE job descriptions. Saturday after noon (12pm), Sunday and holiday work is at Premium-Time (PT). It is typically double-time (standard rate is multiplied by 2.0). These premium rates are charged unless it is established up front that there will be a work week change, for example, the workweek for services will be Sunday to Thursday. This must be negotiated and agreed to by both parties up front. Also, some work on Saturdays may be considered.

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Effective List for Wage Rates

GSA Hourly Sliding Rates for Labor Categories Covered by the Davis Bacon Act
under SIN 246-51 Installation Involving Construction

For Period from 3/25/13 through 9/27/13

SIN	Reference Number	Labor Category	Wage Dermination Labor Category	GSA Contract Ceiling Rate (per Hour) West	Central	Northeast	Southeast
246-51	DB01	Acoustical Installer	Davis Bacon Act	$77 73	$128 70	$128.62	$65 73
246-51	DB02	Carpenters	Davis Bacon Act	$95 00	$131 11	$125.59	$65 73
246-51	DB03	Mason/Concrete Finisher	Davis Bacon Act	$106.81	$137 72	$102.18	$52 58
246-51	DB04	Drywall Hanger	Davis Bacon Act	$77 73	$124.31	$102.85	$58 76
246-51	DB05	Electrician	Davis Bacon Act	$93 17	$128.70	$128 62	$62 53
246-51	DB06	Floor Laying Carpet	Davis Bacon Act	$68 23	$134.57	$110 22	$60 73
246-51	DB08	Glazier	Davis Bacon Act	$67.90	$135.04	$110.32	$56.26
246-51	DB09	Ironworker – Reinforcing	Davis Bacon Act	$120 51	$98 73	$122 56	$59 15
246-51	DB10	Ironworker - Structural	Davis Bacon Act	$120.51	$127 82	$122 56	$65 73
246-51	DB11	Laborer	Davis Bacon Act	$57 27	$122 27	$84 93	$37 86
246-51	DB12	Mechanical Insulator	Davis Bacon Act	$83 29	$135 59	$137 74	$43 82
246-51	DB13	Painters	Davis Bacon Act	$65 22	$115 89	$102 94	$48 55
246-51	DB14	Plasters	Davis Bacon Act	$66 16	$141 42	$113 49	$60 07
246-51	DB15	Plasterer Tender	Davis Bacon Act	$52 75	$128 65	$106 30	$58 76
246-51	DB16	Plumbers & Pipefitters	Davis Bacon Act	$136 55	$172 77	$143 13	$66 34
246-51	DB17	Roofer	Davis Bacon Act	$64 46	$132 54	$139 49	$42 77
246-51	DB18	Sheet Metal Worker	Davis Bacon Act	$67 90	$149 28	$137 03	$60 47
246-51	DB19	Welders Building	Davis Bacon Act	$136 55	$172 77	$143 13	$66 34

NOTES ON OVERTIME:

Davis Bacon Act Labor Categories under SIN 246-51 Installation Involving Construction

The rates shown are for labor services performed during standard work hours and are the GSA ceiling rates (maximum price) for the region. These rates are adjusted to the Trane Commercial Sales Office (CSO) within the region where the work will be performed. Since all of these labor categories are listed on the Davis-Bacon Act wage determinations, an overtime premium will be charged for these services.

Overtime Rates. If the labor categories listed in this price list are performed after the standard eight (8) hour workday, the rates above do not apply and this Standard-Time (ST) rate should be multiplied by 1.5 to obtain the Over-Time (OT) rate for the applicable labor category. Holiday work is at Premium-Time (PT). It is typically double-time (standard rate is multiplied by 2.0). These premium rates are charged unless it is established up front that there will be a work week change, for example, the workweek will be Sunday to Thursday. This must be negotiated and agreed to by both parties up front and must be compliant with DBA provisions.