

DLP-040105

Effective: April 1, 2005

Supersedes all previous list prices.

DANFOSS LIST PRICES

Industrial Refrigeration Valves, Controls, and Components

with sizes & model numbers

All prices shown are U.S. dollars and are subject to change without notice.

All prices shown are F.O.B. factory.

CONTENTS

| DESCRIPTION | TYPE | PAGE |
|-------------------------------------------------|-------------------|-------------|
| Ordering Instruction & Limited Product Warranty | | 2 |
| Shut-off Valves | SVA | 3-6 |
| Check Valves | SCA/CHV/ NRVA | 7-9 |
| Oil Drain Valves | QDV | 10 |
| Overflow Valves | OFV | 10 |
| Hand Expansion Valves | REG | 11 |
| Pressure Regulating Valves | ICS/PM | 12-16 |
| Gauge, Purge, and Needle Valves | SNV-ST | 17 |
| Gauges | 2 1/2" R717 | 17 |
| Pressure Transmitters | AKS 33 | 17 |
| Motorized Valves | ICM/MEV | 18-19 |
| Solenoid Valves | EVRA/EVRAT/ICS/PM | 20 |
| Coils for Solenoid Valves | | 21 |
| Strainers for direct fitting on valves | FA | 21 |
| Strainers (Filters) | FIA | 22-26 |
| Gas Powered Stop Valves | PML/PMLX/GPLX | 27 |
| Thermal Expansion Valves | TEA | 28 |
| Electronic Expansion Valves | AKVA | 29 |
| Moisture and Liquid Level Indicators | MLI | 30 |
| Pressure Controls | KP/RT/MP | 31 |
| Liquid Level Sensors | AKS 41U | 32 |
| Liquid Level Glasses | LLG | 33 |
| Refrigerant Float Switches | AKS 38 | 34 |
| Constant Pressure Regulating Valve | CVMD | 34 |
| Safety Relief Valves | SFVL/DSVL | 35 |
| Electronic Controllers | EKC | 36-37 |
| Terms and Conditions | | 38 |

ORDERING INSTRUCTIONS

- To order, specify:
- Code Number
 - Description
 - Connection (Size & Style)
 - Options (if applicable)
 - Type Coil (if applicable)
 - Voltage and Frequency (if applicable)
 - Accessories (if applicable)
 - Quantity

Options are listed at the end of each section or on the individual page as standard version. Any questions as to the product specifications and or pricing should be directed to your Danfoss sales representative.

Unit pricing is based on individual release quantities for each code number

All standard Danfoss products are listed by the eight or ten digit code number. For information on non-standard products, or products found in the catalogue but not listed in this price sheet, please contact your local Danfoss sales representative.

We accept VISA, MASTERCARD and AMERICAN EXPRESS.



LIMITED PRODUCT WARRANTY

H. A. Phillips & Co. ("Seller") warrants that its products ("Product(s)") will meet the specifications set forth in its catalog from time to time, unless the Buyer is notified otherwise prior to delivery. Seller will, without charge, repair or provide a replacement for any of the Products which prove to be defective in materials or workmanship within one (1) year from the date of first use or eighteen months from date of shipment, whichever first occurs ("Warranty Period").

If, within the Warranty Period, Buyer discovers a defect in materials or workmanship which interferes with the operation of any Product, Buyer must promptly notify Seller, in writing, of such defect. Seller's sole obligation to Buyer under this Warranty is to repair and correct any defect in material or workmanship, or provide a replacement Product to Buyer. Seller's decision with respect to the applicability of this Warranty to any defect shall be final and conclusive. Seller reserves the right to require Buyer, at Buyer's sole cost and expense, to return any defective Product, including any alterations made thereto, F.O.B. Seller's factory in Illinois.

Seller does not warrant against abrasion, corrosion or erosion. Seller shall not be liable to Buyer or to any other person for work done or repairs made, to remedy any defect, by any person who is not an authorized representative of Seller, unless Seller's written consent is first obtained by Buyer. This Warranty does not apply to, and is rendered null and void by, any Product which, after leaving Seller's manufacturing plant: (a) is repaired or altered without Seller's prior written approval; (b) is the subject of improper storage, installation or operation; (c) is the subject of intentional or negligent misuse, misapplication, neglect or accident; or (d) is not used, repaired or altered in accordance with Seller's written instructions.

Except for Products manufactured by Danfoss A/S and sold by Seller, this Warranty does not apply to any products which are purchased and resold by Seller and which bear the original manufacturer's name or nameplate on the product. Any such products shall be warranted only to the extent of the express warranty, if any, provided by the manufacturer of such products or parts.

Seller expressly reserves the right to declare this Warranty null and void upon Buyer's failure to make full and timely payments with respect to any Products purchased by Buyer from Seller, in which event all of Seller's obligations, and Buyer's rights, under this Warranty, shall immediately terminate.



SELLER DISCLAIMS THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES ARISING FROM COURSE OF PERFORMANCE, COURSE OF DEALING, OR USAGE OF TRADE. SELLER SHALL NOT BE LIABLE TO BUYER OR ANY OTHER PARTY UNDER THIS WARRANTY FOR DIRECT, SPECIAL, CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES OF ANY KIND.

SVA

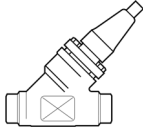
Threaded Shut-off Valves FPT 1/2" - 1 1/4"

Cold-resistant steel, no ductile iron used

ANGLE

| | | Handwheel | | Seal Cap  | | | Seal Cap and Extended Bonnet Low Temperature  | | | | |
|-------------|----------------|-----------|--------------|--------------------------------------------------------------------------------------------|----------|--------------|----------------------------------------------------------------------------------------------------------------------------------|----------|--------------|--------|-------|
| Size | Type | Part No. | List Price | Type | Part No. | List Price | Type | Part No. | List Price | Weight | |
| Inches (mm) | | | | | | | | | | lbs | (kg) |
| 1/2" (15) | SVA-ST15FPT121 | 148B3391 | \$91 | SVA-ST15FPT123 | 148B3392 | \$91 | SVA-LT15FPT123 | 148B3395 | \$110 | 3.1 | (1.4) |
| 3/4" (20) | SVA-ST20FPT121 | 148B3471 | \$99 | SVA-ST20FPT123 | 148B3472 | \$99 | SVA-LT20FPT123 | 148B3475 | \$117 | 3.1 | (1.4) |
| 1" (25) | SVA-ST25FPT121 | 148B3551 | \$111 | SVA-ST25FPT123 | 148B3552 | \$111 | SVA-LT25FPT123 | 148B3555 | \$132 | 5.3 | (2.4) |
| 1 1/4" (32) | SVA-ST32FPT121 | 148B3631 | \$148 | SVA-ST32FPT123 | 148B3632 | \$148 | SVA-LT32FPT123 | 148B3635 | \$175 | 5.3 | (2.4) |

GLOBE (STRAIGHT)

| | | Handwheel | | Seal Cap  | | | Seal Cap and Extended Bonnet Low Temperature | | | | |
|-------------|----------------|-----------|--------------|---------------------------------------------------------------------------------------------|----------|--------------|----------------------------------------------|----------|--------------|--------|-------|
| Size | Type | Part No. | List Price | Type | Part No. | List Price | Type | Part No. | List Price | Weight | |
| Inches (mm) | | | | | | | | | | lbs | (kg) |
| 1/2" (15) | SVA-ST15FPT221 | 148B3431 | \$91 | SVA-ST15FPT223 | 148B3432 | \$91 | SVA-LT15FPT223 | 148B3435 | \$110 | 4.4 | (2.0) |
| 3/4" (20) | SVA-ST20FPT221 | 148B3511 | \$99 | SVA-ST20FPT223 | 148B3512 | \$99 | SVA-LT20FPT223 | 148B3515 | \$117 | 4.4 | (2.0) |
| 1" (25) | SVA-ST25FPT221 | 148B3591 | \$111 | SVA-ST25FPT223 | 148B3592 | \$111 | SVA-LT25FPT223 | 148B3595 | \$132 | 6.6 | (3.0) |
| 1 1/4" (32) | SVA-ST32FPT221 | 148B3671 | \$148 | SVA-ST32FPT223 | 148B3672 | \$148 | SVA-LT32FPT223 | 148B3675 | \$175 | 6.6 | (3.0) |

Stop Valves (SVA)

- ANSI connections
- FPT: 1/2" to 1 1/4", SW: 1/2" to 2", BW 1/2" to 12"
- All valves rated 580 psig
- **ST** - standard valves: -58°F to 302°F
- **LT** - low temp valves: -76°F to 302°F
- **HS** - high spec valves (petrochemical)
- Seal cap or handwheel, angle or globe
- Perfect closing valve cone
- Great flow characteristics
- Polished stainless steel spindle
- Scraper designed to prevent penetration of dirt/ice into packing gland
- Cold-resistant steel design - no ductile iron valve bodies

SVA

Socket-Weld Shut-off Valves SOC 1/2" - 2"

ANGLE

| | | Handwheel | | Seal Cap | | Seal Cap Extended Bonnet Low Temperature | | and | | | |
|---------------------|------|----------------|----------|--------------|----------------|------------------------------------------------|--------------|----------------|----------|--------------|--------------------|
| Size Inches (mm) | | Type | Part No. | List Price | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) |
| 1/2" | (15) | SVA-ST15SOC121 | 148B3381 | \$91 | SVA-ST15SOC123 | 148B3382 | \$91 | SVA-LT15SOC123 | 148B3385 | \$110 | 5.3 (2.4) |
| 3/4" | (20) | SVA-ST20SOC121 | 148B3461 | \$99 | SVA-ST20SOC123 | 148B3462 | \$99 | SVA-LT20SOC123 | 148B3465 | \$117 | 5.3 (2.4) |
| 1" | (25) | SVA-ST25SOC121 | 148B3541 | \$111 | SVA-ST25SOC123 | 148B3542 | \$111 | SVA-LT25SOC123 | 148B3545 | \$132 | 5.3 (2.4) |
| 1 1/4" | (32) | SVA-ST32SOC121 | 148B3621 | \$148 | SVA-ST32SOC123 | 148B3622 | \$148 | SVA-LT32SOC123 | 148B3625 | \$175 | 5.3 (2.4) |
| 1 1/2" | (40) | SVA-ST40SOC121 | 148B3701 | \$203 | SVA-ST40SOC123 | 148B3702 | \$203 | SVA-LT40SOC123 | 148B3705 | \$235 | 5.3 (2.4) |
| 2" | (50) | SVA-ST50SOC121 | 148B3036 | \$253 | SVA-ST50SOC123 | 148B3037 | \$253 | SVA-LT50SOC123 | 148B3285 | \$294 | 9.0 (4.1) |

GLOBE (STRAIGHT)

| | | Handwheel | | Seal Cap | | Seal Cap Extended Bonnet Low Temperature | | and | | | |
|---------------------|------|----------------|----------|--------------|----------------|------------------------------------------------|--------------|----------------|----------|--------------|--------------------|
| Size Inches (mm) | | Type | Part No. | List Price | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) |
| 1/2" | (15) | SVA-ST15SOC221 | 148B3421 | \$91 | SVA-ST15SOC223 | 148B3422 | \$91 | SVA-LT15SOC223 | 148B3425 | \$110 | 4.4 (2.0) |
| 3/4" | (20) | SVA-ST20SOC221 | 148B3501 | \$99 | SVA-ST20SOC223 | 148B3502 | \$99 | SVA-LT20SOC223 | 148B3505 | \$117 | 6.6 (3.0) |
| 1" | (25) | SVA-ST25SOC221 | 148B3581 | \$111 | SVA-ST25SOC223 | 148B3582 | \$111 | SVA-LT25SOC223 | 148B3585 | \$132 | 6.6 (3.0) |
| 1 1/4" | (32) | SVA-ST32SOC221 | 148B3661 | \$148 | SVA-ST32SOC223 | 148B3662 | \$148 | SVA-LT32SOC223 | 148B3665 | \$175 | 6.6 (3.0) |
| 1 1/2" | (40) | SVA-ST40SOC221 | 148B3731 | \$203 | SVA-ST40SOC223 | 148B3732 | \$203 | SVA-LT40SOC223 | 148B3735 | \$235 | 6.6 (3.0) |
| 2" | (50) | SVA-ST50SOC221 | 148B3042 | \$253 | SVA-ST50SOC223 | 148B3043 | \$253 | SVA-LT50SOC223 | 148B3315 | \$294 | 11.2 (5.1) |


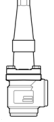
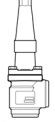
Stop Valves (SVA)

- ANSI connections
- FPT: 1/2" to 1 1/4", SW: 1/2" to 2", BW 1/2" to 12"
- All valves rated 580 psig
- **ST** - standard valves: -58°F to 302°F
- **LT** - low temp valves: -76°F to 302°F
- **HS** - high spec valves (petrochemical)
- Seal cap or handwheel, angle or globe
- Perfect closing valve cone
- Great flow characteristics
- Polished stainless steel spindle
- Scraper designed to prevent penetration of dirt/ice into packing gland
- Cold-resistant steel design - no ductile iron valve bodies

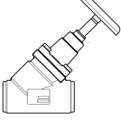
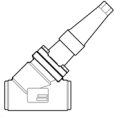
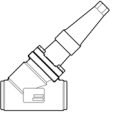
SVA

Butt-Weld Shut-off Valves BW 1/2" - 8" (10" and 12" see page 6)

ANGLE

| | | Handwheel  | | Seal Cap  | | Seal Cap and Extended Bonnet Low Temperature  | | | | |
|------------------|------------------|---------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------|------------------|----------|----------------|-----------------|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) |
| 1/2" (15) | SVA-ST 15 A 121 | 148B3371 | \$91 | SVA-ST 15 A 123 | 148B3372 | \$91 | SVA-LT 15 A 123 | 148B3375 | \$110 | 3.1 (1.4) |
| 3/4" (20) | SVA-ST 20 A 121 | 148B3451 | \$99 | SVA-ST 20 A 123 | 148B3452 | \$99 | SVA-LT 20 A 123 | 148B3455 | \$117 | 3.1 (1.4) |
| 1" (25) | SVA-ST 25 A 121 | 148B3531 | \$111 | SVA-ST 25 A 123 | 148B3532 | \$111 | SVA-LT 25 A 123 | 148B3535 | \$132 | 5.3 (2.4) |
| 1 1/4" (32) | SVA-ST 32 A 121 | 148B3611 | \$148 | SVA-ST 32 A 123 | 148B3612 | \$148 | SVA-LT 32 A 123 | 148B3615 | \$175 | 5.3 (2.4) |
| 1 1/2" (40) | SVA-ST 40 A 121 | 148B3691 | \$203 | SVA-ST 40 A 123 | 148B3692 | \$203 | SVA-LT 40 A 123 | 148B3695 | \$235 | 5.3 (2.4) |
| 2" (50) | SVA-ST 50 A 121 | 148B3034 | \$253 | SVA-ST 50 A 123 | 148B3035 | \$253 | SVA-LT 50 A 123 | 148B3275 | \$294 | 7.1 (3.2) |
| 2 1/2" (65) | SVA-ST 65 A 121 | 148B3046 | \$341 | SVA-ST 65 A 123 | 148B3047 | \$341 | SVA-LT 65 A 123 | 148B3335 | \$398 | 10.6 (4.8) |
| 3" (80) | SVA-ST 80 A 121 | 148B3071 | \$434 | SVA-ST 80 A 123 | 148B3072 | \$434 | SVA-LT 80 A 123 | 148B3075 | \$505 | 20.3 (9.2) |
| 4" (100) | SVA-ST 100 A 121 | 148B3111 | \$578 | SVA-ST 100 A 123 | 148B3112 | \$578 | SVA-LT 100 A 123 | 148B3115 | \$672 | 32.6 (14.8) |
| 5" (125) | SVA-ST 125 A 121 | 148B3151 | \$794 | SVA-ST 125 A 123 | 148B3152 | \$794 | SVA-LT 125 A 123 | 148B3155 | \$896 | 61.9 (28.1) |
| 6" (150) | SVA-ST 150 A 121 | 148B3191 | \$1,174 | SVA-ST 150 A 123 | 148B3192 | \$1,174 | SVA-LT 150 A 123 | 148B3195 | \$1,244 | 87.5 (39.7) |
| 8" (200) | SVA-ST 200 A 121 | 148B3231 | \$2,237 | SVA-ST 200 A 123 | 148B3232 | \$2,237 | SVA-LT 200 A 123 | 148B3235 | \$2,371 | 175.3 (79.5) |

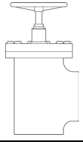

GLOBE (STRAIGHT)

| | | Handwheel  | | Seal Cap  | | Seal Cap and Extended Bonnet Low Temperature  | | | | |
|------------------|------------------|-----------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|----------------|-----------------|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) |
| 1/2" (15) | SVA-ST 15 A 221 | 148B3411 | \$91 | SVA-ST 15 A 223 | 148B3412 | \$91 | SVA-LT 15 A 223 | 148B3415 | \$110 | 4.4 (2.0) |
| 3/4" (20) | SVA-ST 20 A 221 | 148B3491 | \$99 | SVA-ST 20 A 223 | 148B3492 | \$99 | SVA-LT 20 A 223 | 148B3495 | \$117 | 4.4 (2.0) |
| 1" (25) | SVA-ST 25 A 221 | 148B3571 | \$111 | SVA-ST 25 A 223 | 148B3572 | \$111 | SVA-LT 25 A 223 | 148B3575 | \$132 | 6.6 (3.0) |
| 1 1/4" (32) | SVA-ST 32 A 221 | 148B3651 | \$148 | SVA-ST 32 A 223 | 148B3652 | \$148 | SVA-LT 32 A 223 | 148B3655 | \$175 | 6.6 (3.0) |
| 1 1/2" (40) | SVA-ST 40 A 221 | 148B3721 | \$203 | SVA-ST 40 A 223 | 148B3722 | \$203 | SVA-LT 40 A 223 | 148B3725 | \$235 | 6.6 (3.0) |
| 2" (50) | SVA-ST 50 A 221 | 148B3040 | \$253 | SVA-ST 50 A 223 | 148B3041 | \$253 | SVA-LT 50 A 223 | 148B3305 | \$294 | 9.3 (4.2) |
| 2 1/2" (65) | SVA-ST 65 A 221 | 148B3052 | \$354 | SVA-ST 65 A 223 | 148B3053 | \$354 | SVA-LT 65 A 223 | 148B3355 | \$412 | 13.9 (13.9) |
| 3" (80) | SVA-ST 80 A 221 | 148B3091 | \$486 | SVA-ST 80 A 223 | 148B3092 | \$486 | SVA-LT 80 A 223 | 148B3095 | \$567 | 22.9 (10.4) |
| 4" (100) | SVA-ST 100 A 221 | 148B3131 | \$653 | SVA-ST 100 A 223 | 148B3132 | \$653 | SVA-LT 100 A 223 | 148B3135 | \$761 | 39.0 (17.7) |
| 5" (125) | SVA-ST 125 A 221 | 148B3171 | \$893 | SVA-ST 125 A 223 | 148B3172 | \$893 | SVA-LT 125 A 223 | 148B3175 | \$947 | 72.3 (32.8) |
| 6" (150) | SVA-ST 150 A 221 | 148B3211 | \$1,320 | SVA-ST 150 A 223 | 148B3212 | \$1,320 | SVA-LT 150 A 223 | 148B3215 | \$1,400 | 132.3 (60.0) |
| 8" (200) | SVA-ST 200 A 221 | 148B3251 | \$2,517 | SVA-ST 200 A 223 | 148B3252 | \$2,517 | SVA-LT 200 A 223 | 148B3255 | \$2,670 | 245.8 (111.5) |

SVA-DH

Butt-Weld Shut-off Valves BW 10" - 12"

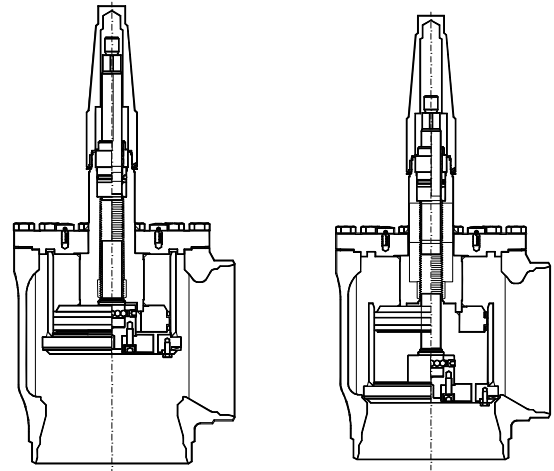
ANGLE

| Size Inches (mm) | Handwheel  | | | Seal Cap  | | | Weight lbs (kg) |
|---------------------|---------------------------------------------------------------------------------------------|----------|----------------|--------------------------------------------------------------------------------------------|----------|----------------|--------------------|
| | Type | Part No. | List Price | Type | Part No. | List Price | |
| 10" (250) | SVA-DH 250 A HW | 148B3767 | \$5,512 | SVA-DH 250 A CAP | 148B3766 | \$5,512 | 290.0 (130.0) |
| 12" (300) | SVA-DH 300 A HW | 148B3777 | \$6,646 | SVA-DH 300 A CAP | 148B3776 | \$6,646 | 420.0 (190.0) |

For larger sizes and other configurations, contact Danfoss.

Features

- No restriction in flow direction
- Internal equalization makes it easy to open under high (580 psi) Δp conditions on either side
- Designed to give favorable flow conditions
- Internal backseating enables replacement of the spindle seal while the valve is active, i.e. under pressure
- Max. operating pressure: 580 psig (40 bar g)
- Temperature range:
SVA-DH: -76/+302 °F (-60/+150 °C)
- SVA-DH is equipped with an extended bonnet/spindle for installation in insulated systems



SVA-DH

SCA

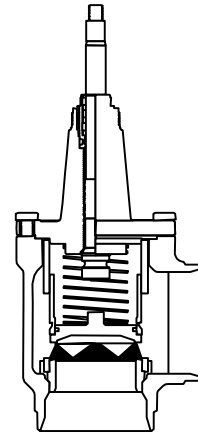
Stop Check Valve 1/2" - 5"

New Design!

ANGLE STOP CHECK VALVES with BUTT-WELD CONNECTIONS

| Size | | Type | Part No. | List Price | Weight | |
|--------|-------|---------------|----------|----------------|--------|--------|
| Inches | (mm) | | | | lbs | (kg) |
| 1/2" | (15) | SCA 15 A ANG | 148G3077 | \$213 | 3.5 | (1.6) |
| 3/4" | (20) | SCA 20 A ANG | 148G3079 | \$233 | 3.5 | (1.6) |
| 1" | (25) | SCA 25 A ANG | 148G3087 | \$251 | 7.1 | (3.2) |
| 1 1/4" | (32) | SCA 32 A ANG | 148G3089 | \$258 | 7.1 | (3.2) |
| 1 1/2" | (40) | SCA 40 A ANG | 148G3091 | \$271 | 7.1 | (3.2) |
| 2" | (50) | SCA 50 A ANG | 148G3144 | \$446 | 15.0 | (7.0) |
| 2 1/2" | (65) | SCA 65 A ANG | 148G3145 | \$617 | 20.0 | (10.0) |
| 3" | (80) | SCA 80 A ANG | 148G3146 | \$740 | 28.0 | (13.0) |
| 4" | (100) | SCA 100 A ANG | 148G3147 | \$1,010 | 45.0 | (21.0) |
| 5" | (125) | SCA 125 A ANG | 148G3148 | \$1,394 | 75.0 | (34.0) |

SCA



ANGLE STOP CHECK VALVES with SOCKET WELD CONNECTIONS

| Size | | Type | code No. | List Price | Weight | |
|--------|------|----------------|----------|--------------|--------|-------|
| Inches | (mm) | | | | lbs | (kg) |
| 2" | (50) | SCA 50 SOC ANG | 148G3150 | \$446 | 15.0 | (7.0) |

Features

- 1/2" to 5" ANSI BW connections
- 580 psig rated
- -76°F to 302°F
- Stainless steel bolts
- Laser cut V-ports for excellent opening characteristics even with low flow.
- Non-chattering design with built-in damping chamber
- Opens at low differential pressure of 0.58 psi
- Stronger spring available for an opening differential pressure of 4.35 psi.

For other sizes and options, contact Danfoss.

CHV

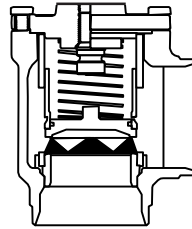
Piston Type Check Valves 1/2" - 5"

ANGLE CHECK VALVES with BUTT-WELD CONNECTIONS

| Size | | Type | Code No. | List Price | Weight | |
|--------|-------|---------------|----------|--------------|--------|--------|
| Inches | (mm) | | | | lbs | (kg) |
| 1/2" | (15) | CHV 15 A ANG | 148G3073 | \$168 | 2.6 | (1.2) |
| 3/4" | (20) | CHV 20 A ANG | 148G3075 | \$180 | 2.6 | (1.2) |
| 1" | (25) | CHV 25 A ANG | 148G3081 | \$187 | 5.1 | (2.3) |
| 1 1/4" | (32) | CHV 32 A ANG | 148G3083 | \$193 | 5.1 | (2.3) |
| 1 1/2" | (40) | CHV 40 A ANG | 148G3085 | \$206 | 5.1 | (2.3) |
| 2" | (50) | CHV 50 A ANG | 148G3139 | \$303 | 8.5 | (3.8) |
| 2 1/2" | (65) | CHV 65 A ANG | 148G3140 | \$394 | 12.5 | (5.5) |
| 3" | (80) | CHV 80 A ANG | 148G3141 | \$480 | 22 | (10.0) |
| 4" | (100) | CHV 100 A ANG | 148G3142 | \$611 | 33 | (15.0) |
| 5" | (125) | CHV 125 A ANG | 148G3143 | \$961 | 57 | (26.0) |



CHV

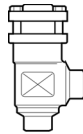


Features

- 1/2" to 5" ANSI BW connections
- 580 psig rated
- -76°F to 302°F
- Laser cut V-ports for excellent opening characteristics
- Non-chattering design with built-in damping chamber
- Opens at low differential pressure of 0.58 psi.
- Stainless steel bolts
- Stronger spring available for an opening differential pressure of 4.35 psi.

ANGLE CHECK VALVES with SOCKET WELD CONNECTIONS

| Size | | Type | Code No. | List Price | Weight | |
|--------|------|----------------|----------|--------------|--------|-------|
| Inches | (mm) | | | | lbs | (kg) |
| 2" | (50) | CHV 50 SOC ANG | 148G3149 | \$303 | 8.5 | (3.8) |




For other sizes and options, contact Danfoss.

NRVA

Piston Type In-Line Check Valves 1/2" - 2 1/2"

NRVA VALVE INCL. FLANGES

| Nom. Port Size Inches (mm) | | Valve Type | Flange Type | Code No. | List Price with Flanges | Weight lbs (kg) | |
|-------------------------------|------|-----------------------------------------------------------------------------------|-------------|------------|----------------------------|--------------------|--------|
| | |  | | | | | |
| 1/2" | (15) | NRVA 15 | 3/8" FPT | 020-202010 | \$120 | 3.1 | (1.4) |
| 1/2" | (15) | NRVA 15 | 3/8" SOC | 020-202020 | \$120 | 3.1 | (1.4) |
| 1/2" | (15) | NRVA 15 | 3/8" WN | 020-202030 | \$120 | 3.1 | (1.4) |
| 1/2" | (15) | NRVA 15 | 1/2" FPT | 020-202011 | \$120 | 3.1 | (1.4) |
| 1/2" | (15) | NRVA 15 | 1/2" SOC | 020-202021 | \$120 | 3.1 | (1.4) |
| 1/2" | (15) | NRVA 15 | 1/2" WN | 020-202031 | \$120 | 3.1 | (1.4) |
| 1/2" | (15) | NRVA 15 | 5/8" ODS | 020-202040 | \$120 | 3.1 | (1.4) |
| 3/4" | (20) | NRVA 20 | 3/4" WN | 020-202032 | \$120 | 3.1 | (1.4) |
| 3/4" | (20) | NRVA 20 | 3/4" SOC | 020-202022 | \$120 | 3.1 | (1.4) |
| 3/4" | (20) | NRVA 20 | 7/8" ODS | 020-202041 | \$120 | 3.1 | (1.4) |
| 1" | (25) | NRVA 25 | 3/4" FPT | 020-202210 | \$193 | 6.6 | (3.0) |
| 1" | (25) | NRVA 25 | 3/4" SOC | 020-202220 | \$193 | 6.6 | (3.0) |
| 1" | (25) | NRVA 25 | 1" FPT | 020-202211 | \$193 | 6.6 | (3.0) |
| 1" | (25) | NRVA 25 | 1" SOC | 020-202221 | \$193 | 6.6 | (3.0) |
| 1" | (25) | NRVA 25 | 1" WN | 020-202230 | \$193 | 6.6 | (3.0) |
| 1 1/4" | (32) | NRVA 32 | 1 1/4" SOC | 020-202222 | \$193 | 6.6 | (3.0) |
| 1 1/4" | (32) | NRVA 32 | 1 1/4" WN | 020-202231 | \$193 | 6.6 | (3.0) |
| 1 1/4" | (32) | NRVA 32 | 1 3/8" ODS | 020-202240 | \$193 | 6.6 | (3.0) |
| 1 1/2" | (40) | NRVA 40 | 1 1/4" SOC | 020-202420 | \$296 | 11.0 | (5.0) |
| 1 1/2" | (40) | NRVA 40 | 1 1/2" SOC | 020-202421 | \$296 | 11.0 | (5.0) |
| 1 1/2" | (40) | NRVA 40 | 1 1/2" WN | 020-202430 | \$296 | 11.0 | (5.0) |
| 2" | (50) | NRVA 50 | 2" WN | 020-202431 | \$296 | 11.0 | (5.0) |
| 2" | (50) | NRVA 50 | 2 1/8" ODS | 020-202440 | \$296 | 11.0 | (5.0) |
| 2 1/2" | (65) | NRVA 65 | 2 1/2" WN | 020-202630 | \$444 | 28.7 | (13.0) |

Features

- Suitable for pulsing discharge lines such as in reciprocating compressors
- Can be used in liquid, suction and hot gas line
- 406 psig rated
- Temperature range: -58°F to 284°F
- No orientation limitations

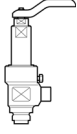
Check Valve for Direct Fitting on the Outlet of Solenoid Valve type EVRA / EVRAT

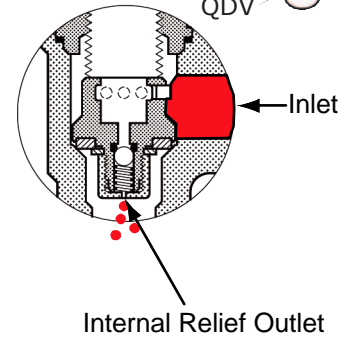
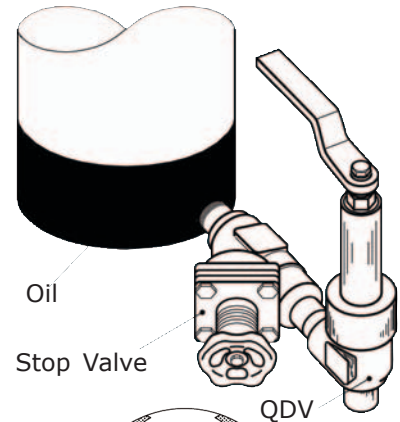
| Description | Part Number | List Price |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|
| NRVA 15 check valve including bolts, gaskets and male adapter ring for directly fitting on the Outlet of EVRA 10, EVRAT 10, EVRA 15 and EVRAT 15 solenoid valves | 020-2020AR | \$118 |

QDV

Quick Closing Oil Drain Valve 1/2" & 3/4"

ANGLE FLOW

| | |  | | | | | | |
|---------------------|--------|-----------------------------------------------------------------------------------|-------------|----------|---------------|--------|-------|--|
| Size Inches (mm) | Type | Connections | | Part No. | List Price | Weight | | |
| | | Bottom | Side | | | lbs | (kg) | |
| 1/2" (15) | QDV 15 | 1/2" FPT | 1/2" FPT | 2412+655 | \$227 | 2.6 | (1.2) | |
| 3/4" (20) | QDV 15 | 3/4" FPT | 3/4" FPT | 2412+672 | \$232 | 2.6 | (1.2) | |
| 1/2" (15) | QDV 15 | 3/4" BSP | 1/2" DIN BW | 2412+307 | \$227 | 2.6 | (1.2) | |



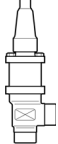
Features

- 1/2" and 3/4" FPT connections
 - Spring-loaded handle closes immediately upon release
 - Internal relief device prevents hydraulic pressure build-up
- The internal relief device in the Danfoss QDV allows trapped refrigerant to slowly bleed if internal valve pressure exceeds 260 psig. Further, the valve is easily actuated by hand (without tools), and has an internal spring mechanism to instantly close the valve if the actuator is let go.

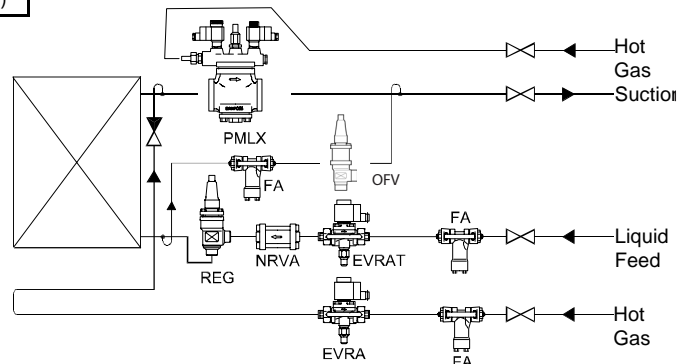
OFV

Butt-Weld Overflow Valve BW 3/4" & 1" Defrost regulation

Opening Differential Pressure: 29-116 psi (2-8 bar)

| | |  | | | | |
|---------------------|--------------|-------------------------------------------------------------------------------------|--------------|--------|-------|--|
| Size Inches (mm) | Type | Part No. | List Price | Weight | | |
| 3/4" (20) | OFV 20 A 133 | 2412+185 | \$290 | 4.4 | (2.0) | |
| 1" (25) | OFV 25 A 133 | 2412+186 | \$300 | 4.4 | (2.0) | |

The Danfoss OFV overflow valve is a simple, adjustable pressure regulator that does not require pilots and is self-seating. It is suitable for defrost regulation of evaporators up to 100 TR. The OFV is also suitable for oil pump discharge relief applications.




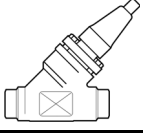
List Pricing

Effective: April 1, 2005

REG

Threaded Hand Expansion Valve FPT 1/2" - 1 1/4"


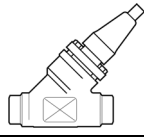
ANGLE AND GLOBE

| | |  | | | |  | | | | | |
|---------------------|----------------|-----------------------------------------------------------------------------------|-------|----------|--------------|-------------------------------------------------------------------------------------|------------------------------------------|-------|----------|--------------|--------------------|
| Angle with Seal Cap | | | | | | Globe with Seal Cap | | | | | |
| Size Inches (mm) | Type | Cone No. (flow area mm ²) | | Part No. | List Price | Type | Cone No. (flow area mm ²) | | Part No. | List Price | Weight lbs (kg) |
| 1/2" (15) | REG 15 FPT ANG | 5 | (44) | 148G3390 | \$107 | REG 15 FPT STR | 5 | (44) | 148G3394 | \$107 | 3.1 (1.4) |
| 3/4" (20) | REG 20 FPT ANG | 6 | (92) | 148G3399 | \$113 | REG 20 FPT STR | 6 | (92) | 148G3403 | \$113 | 3.1 (1.4) |
| 1" (25) | REG 25 FPT ANG | 8 | (272) | 148G3405 | \$143 | REG 25 FPT STR | 8 | (272) | 148G3408 | \$143 | 5.3 (2.4) |
| 1 1/4" (32) | REG 32 FPT ANG | 8 | (272) | 148G3411 | \$183 | REG 32 FPT STR | 8 | (272) | 148G3414 | \$183 | 5.3 (2.4) |

REG

Socket-Weld Hand Expansion Valve SOC 1/2" - 1 1/2"


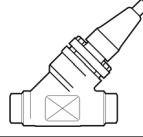
ANGLE AND GLOBE

| | |  | | | |  | | | | | |
|---------------------|----------------|------------------------------------------------------------------------------------|-------|----------|--------------|--------------------------------------------------------------------------------------|------------------------------------------|-------|----------|--------------|--------------------|
| Angle with Seal Cap | | | | | | Globe with Seal Cap | | | | | |
| Size Inches (mm) | Type | Cone No. (flow area mm ²) | | Part No. | List Price | Type | Cone No. (flow area mm ²) | | Part No. | List Price | Weight lbs (kg) |
| 1/2" (15) | REG 15 SOC ANG | 5 | (44) | 148G3313 | \$107 | REG 15 SOC STR | 5 | (44) | 148G3317 | \$107 | 3.1 (1.4) |
| 3/4" (20) | REG 20 SOC ANG | 6 | (92) | 148G3324 | \$113 | REG 20 SOC STR | 6 | (92) | 148G3328 | \$113 | 3.1 (1.4) |
| 1" (25) | REG 25 SOC ANG | 8 | (272) | 148G3330 | \$143 | REG 25 SOC STR | 8 | (272) | 148G3333 | \$143 | 5.3 (2.4) |
| 1 1/4" (32) | REG 32 SOC ANG | 8 | (272) | 148G3336 | \$183 | REG 32 SOC STR | 8 | (272) | 148G3339 | \$183 | 5.3 (2.4) |
| 1 1/2" (40) | REG 40 SOC ANG | 9 | (432) | 148G3343 | \$258 | REG 40 SOC STR | 9 | (432) | 148G3345 | \$258 | 5.3 (2.4) |

REG

Butt-Weld Hand Expansion Valve BW 1/4" - 2 1/2"

ANGLE AND GLOBE

| BW | |  | | | |  | | | | | |
|---------------------|--------------|-------------------------------------------------------------------------------------|--------|----------|--------------|---------------------------------------------------------------------------------------|------------------------------------------|-------|----------|--------------|--------------------|
| Angle with Seal Cap | | | | | | Globe with Seal Cap | | | | | |
| Size Inches (mm) | Type | Cone No. (flow area mm ²) | | Part No. | List Price | Type | Cone No. (flow area mm ²) | | Part No. | List Price | Weight lbs (kg) |
| 1/4" (6) | REG 6 A ANG | 2 | (6) | 2415+475 | \$88 | REG 6 A STR | 2 | (6) | 2415+478 | \$88 | 1.8 (0.8) |
| 3/8" (10) | REG 10 A ANG | 3 | (12) | 2415+482 | \$90 | REG 10 A STR | 3 | (12) | 2415+485 | \$90 | 1.8 (0.8) |
| 1/2" (15) | REG 15 A ANG | 5 | (44) | 148G3277 | \$107 | REG 15 A STR | 5 | (44) | 148G3281 | \$107 | 3.1 (1.4) |
| 3/4" (20) | REG 20 A ANG | 6 | (92) | 148G3286 | \$113 | REG 20 A STR | 6 | (92) | 148G3290 | \$113 | 3.1 (1.4) |
| 1" (25) | REG 25 A ANG | 7 | (152) | 148G3295 | \$143 | REG 25 A STR | 7 | (152) | 148G3299 | \$143 | 3.1 (1.4) |
| 1 1/4" (32) | REG 32 A ANG | 8 | (272) | 148G3300 | \$183 | REG 32 A STR | 8 | (272) | 148G3303 | \$183 | 5.3 (2.4) |
| 1 1/2" (40) | REG 40 A ANG | 9 | (432) | 148G3307 | \$258 | REG 40 A STR | 9 | (432) | 148G3310 | \$258 | 5.3 (2.4) |
| 2" (50) | REG 50 A ANG | 11 | (822) | 148G3487 | \$297 | | | | | | 7.1 (3.2) |
| 2 1/2" (65) | REG 65 A ANG | 12 | (1978) | 148G3488 | \$425 | | | | | | 10.6 (4.8) |

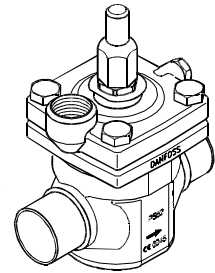
Contact Danfoss for other sizes and options.

ICS

Pressure Regulating Valve with Direct Weld Body (Steel Body)

SIZE 3/16" - 2-1/2"

| Valve Size | Module Port Size | | Flow Coefficient Cv (Kv) | Connection Type and Size | | | | Weight without pilots | |
|------------|------------------|------|-----------------------------|--------------------------|----------|------------------|----------------------|-----------------------|-------|
| | Inches | (mm) | | FPT | SW | WN | ODS | lbs | (kg) |
| ICS 25-5 | 3/16" | (5) | 2 (1.7) | 3/4", 1" | 3/4", 1" | 3/4", 1", 1 1/4" | 7/8", 1-1/8", 1-3/8" | 7.9 | (3.6) |
| ICS 25-10 | 3/8" | (10) | 4.1 (3.5) | 3/4", 1" | 3/4", 1" | 3/4", 1", 1 1/4" | 7/8", 1-1/8", 1-3/8" | 7.9 | (3.6) |
| ICS 25-15 | 5/8" | (15) | 7 (6.0) | 3/4", 1" | 3/4", 1" | 3/4", 1", 1 1/4" | 7/8", 1-1/8", 1-3/8" | 7.9 | (3.6) |
| ICS 25-20 | 3/4" | (20) | 9.3 (8.0) | 3/4", 1" | 3/4", 1" | 3/4", 1", 1 1/4" | 7/8", 1-1/8", 1-3/8" | 7.9 | (3.6) |
| ICS 25-25 | 1" | (25) | 13.3 (11.5) | 3/4", 1" | 3/4", 1" | 3/4", 1", 1 1/4" | 7/8", 1-1/8", 1-3/8" | 7.9 | (3.6) |
| ICS 32 | 1 1/4" | (32) | 20 (17) | - | 1 1/4" | 1 1/4", 1 1/2" | 1-3/8", 1-5/8" | 11.0 | (5.0) |
| ICS 40 | 1 1/2" | (40) | 31 (27) | - | 1-1/2" | 1 1/2", 2" | 1-5/8" | 13.9 | (6.3) |
| ICS 50 | 2" | (50) | 51 (44) | - | 2" | 2", 2 1/2" | 2-1/8" | 20 | (9) |
| ICS 65 | 2 1/2" | (65) | 81 (70) | - | 2 1/2" | 2 1/2", 3" | 2-5/8" | 30 | (14) |



Features:

- Direct-weld connections to eliminate leak potential
- Single-piece function module with V-port design
- ICS in one-third the weight and half the size of traditional cast iron valves with flanges (less costly to ship and takes less space)
- Complete overhaul by replacing the one-piece function module containing the only wear surfaces
- Low temperature steel body, media range: -76 °F to +248 °F
- Stainless steel bolts
- 754 psig rated

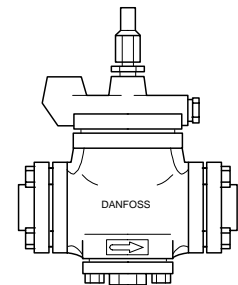


PM

Pressure Regulating Valve with Flanged Body (Ductile Iron Body)

SIZE 3/16" - 6"

| Valve Size | Port Size | | Flow Coefficient Cv (Kv) | Available Flange Types and Sizes | | | | Weight | |
|------------|-----------|-------|-----------------------------|----------------------------------|------------------|------------------|--------------|--------|--------|
| | Inches | (mm) | | FPT | SW | WN | ODS | lbs | (kg) |
| PM 5 | 3/16" | (5) | 1.9 (1.6) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 15.5 | (7.0) |
| PM 10 | 3/8" | (10) | 3.5 (3.0) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 15.5 | (7.0) |
| PM 15 | 5/8" | (15) | 4.7 (4.0) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 15.5 | (7.0) |
| PM 20 | 3/4" | (20) | 8.2 (7.0) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 15.5 | (7.0) |
| PM 25 | 1" | (25) | 13.4 (11.4) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 15.5 | (7.0) |
| PM 32 | 1 1/4" | (32) | 20.1 (17.1) | - | 1 1/4" | 1 1/4", 1 1/2" | 1-3/8" | 25.0 | (11.5) |
| PM 40 | 1 1/2" | (40) | 35.1 (30) | - | 1-1/2" | 1 1/2", 2" | 1-5/8" | 31.0 | (14.0) |
| PM 50 | 2" | (50) | 50.3 (43) | - | 2" | 2", 2 1/2" | 2-1/8" | 45 | (20.0) |
| PM 65 | 3" | (65) | 92.3 (78) | - | 2 1/2" | 2 1/2", 3" | 2-5/8" | 63 | (29.0) |
| PM 80 | 4" | (80) | 165 (140) | - | - | 4" | - | 177 | (80) |
| PM 100 | 5" | (100) | 240 (204) | - | - | 5" | - | 265 | (120) |
| PM 125 | 6" | (125) | 385 (327) | - | - | 6" | - | 375 | (170) |



STANDARD REGULATOR VARIATIONS

| Suffix | Function |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| STD | Constant pressure regulation - ICS and PM sizes 5 to 65 are standard with CVP(LP) pilot range 0 to 102 psig. PM sizes 80 to 125 are standard with CVP(HP) pilot range 20 in.HG to 102 psig. |
| "O" | Outlet pressure regulation - PM sizes 5 to 65 are with CVC pilot range 13 in.HG to 102 psig and external pilot mounting set for connection between CVC pilot and the outlet of the PM valve. ICS sizes 5 to 65 and PM sizes 80 to 125 are only with CVC pilot range 13 in.HG to 102 psig and do not include external pilot mounting set. |
| "T" | Thermostatic regulation - Standard with CVT pilot range +14°F to +77°F, which opens valve on temperature rise. CVTO valves, which close valve on temperature rise are available. |
| "J" (1) | Electronically controlled pressure regulation - Standard with CVQ pilot range 0 to 87 psig. |
| "L" | Differential pressure regulation - PM sizes 5 to 65 are standard with CVPP(HP) pilot range 0 to 102 psi and external pilot mounting set for connection between CVPP pilot and the outlet of the PM valve. ICS sizes 5 to 65 and PM sizes 80 to 125 are standard with CVPP(HP) pilot range 0 to 102 psi and do not include external pilot mounting set. |
| "S" | Inlet pressure regulation combined with forced closing - ICS and PM sizes 5 to 65 are standard with CVP(LP) pilot range 0 to 102 psig and EVM(NC) pilot. PM sizes 80 to 125 are standard with CVP(HP) pilot range 20 in.HG to 102 psig and EVM(NC) pilot. |
| "B" | Constant inlet pressure regulation combined with electrical forced wide opening - ICS and PM sizes 5 to 65 are standard with CVP(LP) pilot range 0 to 102 psig and EVM(NC) pilot. PM sizes 80 to 125 are standard with CVP(HP) pilot range 20 in.HG to 102 psig and EVM(NC) pilot. |
| "D" | Dual inlet pressure regulation with changeover between two preset evaporating pressures - ICS and PM sizes 5 to 65 are standard with two CVP(LP) pilots range 0 to 102 psig and EVM(NC) pilot. PM sizes 80 to 125 are standard with two CVP(HP) pilots range 20 in.HG to 102 psig and EVM(NC) pilot. |
| "OS" | Outlet pressure regulation combined with electrical forced closing - PM sizes 5 to 65 are with CVC pilot range 13 in.HG to 102 psig, EVM(NC) pilot and external pilot mounting set for connection between CVC pilot and the outlet of the PM valve. ICS sizes 5 to 65 and PM sizes 80 to 125 are only with CVC pilot range 13 in.HG to 102 psig and EVM(NC) pilot and do not include external pilot mounting set. |
| "BL" | Differential pressure regulation combined with electrical forced wide opening - PM sizes 5 to 65 are standard with CVPP(HP) pilot range 0 to 102 psi, EVM(NC) pilot and external pilot mounting set for connection between CVPP pilot and the outlet of the PM valve. ICS sizes 5 to 65 and PM sizes 80 to 125 are standard with CVPP(HP) pilot range 0 to 102 psi and EVM(NC) pilot and do not include external pilot mounting set. |
| "JD" (1) | Electronically controlled temperature regulation combined with electric forced closing and changeover to constant pressure regulation - ICS and PM sizes 5 to 65 are standard with CVQ pilot range 0 to 87 psig, EVM(NC) pilot and CVP(LP) pilot range 0 to 102 psig. PM sizes 80 to 125 are standard with CVQ pilot range 0 to 87 psig, EVM(NC) pilot and CVP(HP) pilot range 20 in.HG to 102 psig. |
| "K" | Reseating Relief - high-to-low pressure relief setting, List ADD \$39 . Valve will be set and tagged with specified pressure relief setting. |

(1) Requires EKC 366 Interface Module or EKC 361 Electronic Controller and AKS Temperature Sensor. See PM Variations for pricing.

Steps for ordering:

- Step 1: Specify regulator type and size; valve prices are on the following two pages.
- Step 2: Specify regulator variation; consult Danfoss for variations not listed.
- Step 3: Specify connection size and type.
- Step 4: Specify coil voltage and accessories where applicable.






Example for ordering: Dual inlet pressure regulator type ICS with ¾" Port size, 1" SW connections, 120V coil and gauge valve with adapter for fitting into regulator.

Item 1: ICS 25-20-D with 1" SW and 120V coil







Item 2: ¼" gauge valve with adapter, p/n 148B418062 (selected from ICS accessories)

Note: Standard pilot ranges/coil versions will be supplied unless other pilot ranges/coil versions are specified.

New! Standard Regulator Variations

| Single Pilot Variations | | | | | | | |
|-------------------------|------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Valve Size | Module Port Size | | List Prices | | | | |
| | | |  |  |  |  |  |
| | Inches | (mm) | "STD" | "O" | "T" | "J" (2) | "L" |
| ICS 25-5 | 3/16" | (5) | \$384 | \$537 | \$659 | \$901 | \$512 |
| ICS 25-10 | 3/8" | (10) | \$384 | \$537 | \$659 | \$901 | \$512 |
| ICS 25-15 | 5/8" | (15) | \$384 | \$537 | \$659 | \$901 | \$512 |
| ICS 25-20 | 3/4" | (20) | \$384 | \$537 | \$659 | \$901 | \$512 |
| ICS 25-25 | 1" | (25) | \$419 | \$572 | \$694 | \$936 | \$547 |
| ICS 32 | 1 1/4" | (32) | \$461 | \$614 | \$736 | \$978 | \$589 |
| ICS 40 | 1 1/2" | (40) | \$657 | \$810 | \$932 | \$1,174 | \$785 |
| ICS 50 | 2" | (50) | \$750 | \$903 | \$1,025 | \$1,267 | \$878 |
| ICS 65 | 2 1/2" | (65) | \$982 | \$1,135 | \$1,257 | \$1,499 | \$1,110 |

New!

| Multiple Pilot Variations | | | | | | | | |
|---------------------------|------------------|------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Valve Size | Module Port Size | | List Price (1) | | | | | |
| | | |  |  |  |  |  |  |
| | Inches | (mm) | "S" | "B" | "D" | "OS" | "BL" | "JD" (2) |
| ICS 25-5 | 3/16" | (5) | \$590 | \$590 | \$700 | \$743 | \$718 | \$1,217 |
| ICS 25-10 | 3/8" | (10) | \$590 | \$590 | \$700 | \$743 | \$718 | \$1,217 |
| ICS 25-15 | 5/8" | (15) | \$590 | \$590 | \$700 | \$743 | \$718 | \$1,217 |
| ICS 25-20 | 3/4" | (20) | \$590 | \$590 | \$700 | \$743 | \$718 | \$1,217 |
| ICS 25-25 | 1" | (25) | \$621 | \$621 | \$731 | \$774 | \$749 | \$1,248 |
| ICS 32 | 1 1/4" | (32) | \$686 | \$686 | \$796 | \$839 | \$814 | \$1,313 |
| ICS 40 | 1 1/2" | (40) | \$886 | \$886 | \$996 | \$1,039 | \$1,014 | \$1,513 |
| ICS 50 | 2" | (50) | \$984 | \$984 | \$1,094 | \$1,137 | \$1,112 | \$1,611 |
| ICS 65 | 2 1/2" | (65) | \$1,221 | \$1,221 | \$1,331 | \$1,374 | \$1,349 | \$1,848 |

(1) Price includes a standard 14W coil with DIN connector plug for use on the EVM solenoid pilot.

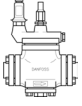
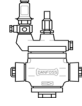
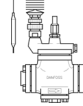
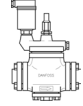

(2) Requires EKC 366 Interface Module or EKC 361 Electronic Controller with AKS Temperature Sensor.

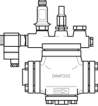
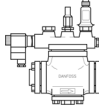
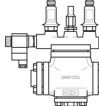
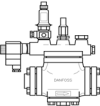
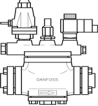
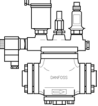
| | Code No. | List Price |
|-----------------------------------------------------------------------------------------------------------------|----------|----------------|
| EKC 361 Electronic Controller for stand alone control. | 084B7060 | List ADD \$707 |
| EKC 366 Interface Module allows for control from customer supplied PLC. | 084B7076 | List ADD \$353 |
| AKS 21M General Purpose temperature sensor (-94 to +356 °F) w/ 8.2" cable. Consult Danfoss for other variations | 084N2003 | List ADD \$45 |

SOLENOID COIL(S) INCLUDED IN ALL VALVE PRICES

WHEN ORDERING PLEASE SPECIFY VALVE TYPE, VARIATION, NOMINAL PORT SIZE, CONNECTION TYPE AND SIZE, COIL VOLTAGE AND Hz. OTHER REGULATOR VARIATIONS AND ASSEMBLED VALVES ARE AVAILABLE. CONSULT DANFOSS FOR ASSISTANCE.

Standard Regulator Variations

| Single Pilot Variations | | | | | | | | |
|-------------------------|-----------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------|
| Valve Size | Port Size | | List Prices | | | | | Flange Deduct |
| | | |  |  |  |  |  | |
| | | | "STD" | "O" | "T" | "J" (2) | "L" | |
| PM1-5 | 3/16" | (5) | \$375 | \$584 | \$650 | \$892 | \$559 | (\$40) |
| PM1-10 | 3/8" | (10) | \$375 | \$584 | \$650 | \$892 | \$559 | (\$40) |
| PM1-15 | 5/8" | (15) | \$375 | \$584 | \$650 | \$892 | \$559 | (\$40) |
| PM1-20 | 3/4" | (20) | \$375 | \$584 | \$650 | \$892 | \$559 | (\$40) |
| PM1-25 | 1" | (25) | \$409 | \$618 | \$684 | \$926 | \$593 | (\$40) |
| PM1-32 | 1 1/4" | (32) | \$493 | \$724 | \$768 | \$1,010 | \$699 | (\$53) |
| PM1-40 | 1 1/2" | (40) | \$670 | \$920 | \$945 | \$1,187 | \$895 | (\$76) |
| PM1-50 | 2" | (50) | \$790 | \$1,060 | \$1,065 | \$1,307 | \$1,035 | (\$85) |
| PM1-65 | 3" | (65) | \$1,065 | \$1,358 | \$1,340 | \$1,582 | \$1,333 | (\$133) |
| PM3-80 | 4" | (80) | \$2,354 | \$2,391 | \$2,513 | \$2,755 | \$2,366 | (\$185) |
| PM3-100 | 5" | (100) | \$4,007 | \$4,044 | \$4,166 | \$4,408 | \$4,019 | (\$405) |
| PM3-125 | 6" | (125) | \$6,110 | \$6,147 | \$6,269 | \$6,511 | \$6,122 | (\$505) |

| Multiple Pilot Variations | | | | | | | | | |
|---------------------------|-----------|-------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------|
| Valve Size | Port Size | | List Price (1) | | | | | | Flange Deduct |
| | | |  |  |  |  |  |  | |
| | | | "S" | "B" | "D" | "OS" | "BL" | "JD" (2) | |
| PM3-5 | 3/16" | (5) | \$597 | \$597 | \$707 | \$806 | \$781 | \$1,224 | (\$40) |
| PM3-10 | 3/8" | (10) | \$597 | \$597 | \$707 | \$806 | \$781 | \$1,224 | (\$40) |
| PM3-15 | 5/8" | (15) | \$597 | \$597 | \$707 | \$806 | \$781 | \$1,224 | (\$40) |
| PM3-20 | 3/4" | (20) | \$597 | \$597 | \$707 | \$806 | \$781 | \$1,224 | (\$40) |
| PM3-25 | 1" | (25) | \$676 | \$676 | \$786 | \$885 | \$860 | \$1,303 | (\$40) |
| PM3-32 | 1 1/4" | (32) | \$742 | \$742 | \$852 | \$973 | \$948 | \$1,369 | (\$53) |
| PM3-40 | 1 1/2" | (40) | \$985 | \$985 | \$1,095 | \$1,235 | \$1,210 | \$1,612 | (\$76) |
| PM3-50 | 2" | (50) | \$1,128 | \$1,128 | \$1,238 | \$1,398 | \$1,373 | \$1,755 | (\$85) |
| PM3-65 | 3" | (65) | \$1,354 | \$1,354 | \$1,464 | \$1,647 | \$1,622 | \$1,981 | (\$133) |
| PM3-80 | 4" | (80) | \$2,481 | \$2,481 | \$2,707 | \$2,518 | \$2,493 | \$3,108 | (\$185) |
| PM3-100 | 5" | (100) | \$4,134 | \$4,134 | \$4,360 | \$4,171 | \$4,146 | \$4,761 | (\$405) |
| PM3-125 | 6" | (125) | \$6,237 | \$6,237 | \$6,463 | \$6,274 | \$6,249 | \$6,864 | (\$505) |

(1) Price includes a standard 14W coil with DIN connector plug for use on the EVM solenoid pilot.

(2) Requires EKC 366 Interface Module or EKC 361 Electronic Controller with AKS Temperature Sensor.


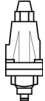
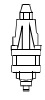












| | Code No. | List Price |
|-----------------------------------------------------------------------------------------------------------------|----------|----------------|
| EKC 361 Electronic Controller for stand alone control. | 084B7060 | List ADD \$707 |
| EKC 366 Interface Module allows for control from customer supplied PLC. | 084B7076 | List ADD \$353 |
| AKS 21M General Purpose temperature sensor (-94 to +356 °F) w/ 8.2" cable. Consult Danfoss for other variations | 084N2003 | List ADD \$45 |

SOLENOID COIL(S) INCLUDED IN ALL VALVE PRICES

ALL PM VALVES INCLUDE INTEGRAL STRAINER.

**WHEN ORDERING PLEASE SPECIFY VALVE TYPE, VARIATION, NOMINAL PORT SIZE, FLANGE TYPE AND SIZE, COIL VOLTAGE AND Hz.
OTHER REGULATOR VARIATIONS AND ASSEMBLED VALVES ARE AVAILABLE. CONSULT DANFOSS FOR ASSISTANCE.**

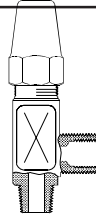
Pilots and Accessories for type ICS and PM Pressure Regulators

| | Type | Description | Range | MWP psig | Part No. | List Price |
|-------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------|----------------------------------------------|--------------------------------------------------------------|
|  | CVP (LP) | Pilot Valve, Inlet Pressure | 0 to 102 psig 20" to 29 psig | 250 250 | 027B1100 027B1101 | \$110 \$110 |
|  | CVP (HP) | Pilot Valve, Inlet Pressure | 20" to 102 psig 58 to 319 psig 58 to 406 psig | 406 406 406 | 027B1164 027B1160 027B1161 | \$226 \$226 \$304 |
|  | CVP (XP) | Pilot Valve, Inlet Pressure | 363 to 754 psig | 754 | 027B0080 | \$335 |
|  | CVC | Pilot Valve, Outlet Pressure | 13"-102 psig | 406/250 | 027B1070 | \$263 |
|  | CVPP (HP) | Pilot Valve, Diff. Pressure | 0 to 102 psig 58 to 319 psig | 406 406 | 027B1162 027B1168 | \$238 \$287 |
|  | CVT | Pilot Valve, Temperature (Temperature rise opens valve) | -40°F to +32°F +14°F to +77°F +68°F to +140°F +176°F to +284°F | 320 320 320 320 | 027B1110 027B1111 027B1112 027B1116 | \$385 \$385 \$385 \$483 |
|  | CVTO | Pilot Valve, Temperature (Temperature rise closes valve) | -40°F to +32°F +14°F to +77°F +68°F to +140°F | 320 320 320 | 027B1117 027B1118 027B1119 | \$628 \$747 \$747 |
|  | CVQ | Pilot Valve, Electronic | 29.5" to 72.5 psig 0 to 87 psig 25 to 116 psig | 250 250 250 | 027B1139 027B1140 027B1141 | \$627 \$627 \$627 |
|  | EVM (NC) | Pilot Valve, Solenoid (Normally Closed) Does Not Include Coil | - | 508 | 027B1120 | \$88 |
|  | EVM (NO) | Pilot Valve, Solenoid (Normally Open) Does Not Include Coil | - | 508 | 027B1130 | \$128 |
|  | - | Pilot Blanking Plug | - | - | 027F1046 | \$11 |
|  | - | External Pilot Connector for PM 5 to 65 | 1/4" FPT | - | 027B2065 | \$37 |
|  | - | External Pilot Connector for PM 80 to 12 | 1/4" FPT | - | 027B2066 | \$84 |
|  | - | Pressure Gauge Connection Adapter | 1/4" FPT | - | 027B2062 | \$16 |
|  | - | Pressure Gauge Connection Adapter and SNV-ST 1/4" MPT x 1/4" FPT gauge valve (see diagram below) | 1/4" FPT | - | 148B418062 | \$47 |

REMOTE PILOT MOUNTING AVAILABLE. CONSULT DANFOSS FOR ASSISTANCE.

SNV-ST

Gauge, Purge and Needle Valves



ANGLE FLOW WITH SEAL CAP

| Connection size and type | | Type | Part No. | List Price |
|--------------------------|------------|------------------------------|----------|-------------|
| Bottom | Side | | | |
| 1/4" MPT | 1/4" FPT | SNV-ST 1/4" FPT - 1/4" MPT | 148B4180 | \$39 |
| 3/8" MPT | 3/8" FPT | SNV-ST 3/8" FPT - 3/8" MPT | 148B4181 | \$45 |
| 1/2" MPT | 3/8" FPT | SNV-ST 3/8" FPT - 1/2" MPT | 148B4233 | \$45 |
| 1/2" MPT | 1/2" MPT | SNV-ST 1/2" MPT - 1/2" MPT | 148B4224 | \$45 |
| 1/4" FPT | 1/4" FPT | SNV-ST 1/4" FPT - 1/4" FPT | 148B4223 | \$39 |
| 3/8" FPT | 3/8" FPT | SNV-ST 3/8" FPT - 3/8" FPT | 148B4225 | \$45 |
| 1/4" MPT | 1/4" FPT | SNV-ST LONG NECK (3.95") | 148B4232 | \$49 |
| 1/4" MPT | 1/4" Flare | SNV-ST 1/4" Flare - 1/4" MPT | 148B4230 | \$39 |
| G 1/2 | G 1/2 | SNV-ST G 1/2 - G 1/2 * | 148B3745 | \$61 |

* Includes 1 set of cap and gasket

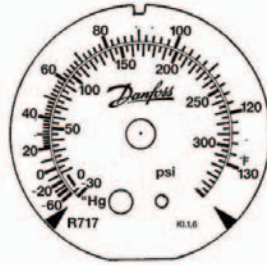
Note: Purge valves for use with strainers, see purge valve kits in the relevant strainer section.

Features

- Cold resistant steel with zinc chromate coating
- Valve safety is enhanced with a non-removable stainless steel stem
- No special flow direction required
- Full temperature range: -76°F to 302°F
- 725 psig rated - valves for higher operating pressure available upon request

2 1/2" Ammonia Pressure Gauges

| Pressure Range | Part No. | List Price |
|-----------------|----------|-------------|
| 30" to 150 psig | R4785900 | \$75 |
| 30" to 300 psig | R4114900 | \$75 |



Features

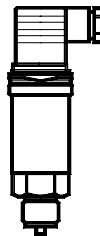
- Liquid filled design to prevent flutter
- 1/4" male NPT bottom connection
- 2 1/2" face which displays both pressure and saturation temperature

AKS

Pressure Transmitters

AKS 33 (4 to 20 mA output)

| Type | Pressure Range | Output Signal | Part No. | List Price |
|--------|----------------|---------------|----------|--------------|
| AKS 33 | 0 to 100 psia | 4 to 20 mA | 060G3802 | \$350 |
| AKS 33 | 0 to 200 psia | 4 to 20 mA | 060G1711 | \$350 |
| AKS 33 | 0 to 500 psig | 4 to 20 mA | 060G1712 | \$350 |



Features

- 1/4" male NPT connection
- DIN connector
- Stainless steel body and material in contact with medium
- Suitable for all refrigerants, including ammonia
- UL recognized for Class I, Group A, B, C, and D, Division 2
- Built-in voltage stabilizer for varying voltage supply

ICM

Motorized Regulating Valves for Expansion and Pressure Regulation
Direct Weld Body (Steel Body)

ICM MOTORIZED EXPANSION VALVE

| Valve Size * | Flow Coefficient Cv (Kv) | | Connection type and size | | | | List Price | Weight including motor | |
|--------------|--------------------------|-------|--------------------------|----------|------------------|----------------------|----------------|------------------------|----------|
| | | | FPT | SW | WN | ODS | | lbs | (kg) |
| | | | ICM 20-A | 0.7 | (0.6) | 3/4" | | 3/4" | 3/4", 1" |
| ICM 20-B | 2.8 | (2.4) | 3/4" | 3/4" | 3/4", 1" | 5/8", 7/8" | \$2,360 | 6.6 | (3.0) |
| ICM 20-C | 5.3 | (4.6) | 3/4" | 3/4" | 3/4", 1" | 5/8", 7/8" | \$2,360 | 6.6 | (3.0) |
| ICM 25-A | 7.0 | (6) | 3/4", 1" | 3/4", 1" | 3/4", 1", 1-1/4" | 7/8", 1-1/8", 1-3/8" | \$2,449 | 8.8 | (4.1) |
| ICM 25-B | 13.9 | (12) | 3/4", 1" | 3/4", 1" | 3/4", 1", 1-1/4" | 7/8", 1-1/8", 1-3/8" | \$2,449 | 8.8 | (4.1) |
| ICM 32-A | 10.4 | (9) | - | 1-1/4" | 1-1/4", 1-1/2" | 1-3/8", 1-5/8" | \$2,566 | 11.0 | (5.8) |
| ICM 32-B | 20 | (17) | - | 1-1/4" | 1-1/4", 1-1/2" | 1-3/8", 1-5/8" | \$2,566 | 11.1 | (5.8) |
| ICM 40-A | 17 | (15) | - | 1-1/2" | 1-1/2", 2" | 1-5/8" | \$2,791 | 17.2 | (7.8) |
| ICM 40-B | 30 | (26) | - | 1-1/2" | 1-1/2", 2" | 1-5/8" | \$2,791 | 17.2 | (7.8) |
| ICM 50-A | 27 | (23) | - | 2" | 2", 2-1/2" | 2-1/8" | \$2,909 | 24.4 | (11.1) |
| ICM 50-B | 46 | (40) | - | 2" | 2", 2-1/2" | 2-1/8" | \$2,909 | 24.4 | (11.1) |
| ICM 65-B | 81 | (70) | - | 2½" | 2½", 3" | 2-5/8" | \$3,782 | 36.5 | (16.6) |

ICM valves sizes 20, 25 and 32 are supplied with ICAD 600 motor; ICM valve sizes 40, 50 and 65 are supplied with ICAD 900 motor
For battery backup, contact Danfoss.

ACCESSORIES

| Description | Part Number | List Price |
|--------------------------------------------------------------------|-------------|-------------|
| Magnetic tool for manually operating ICM valve sizes 20, 25 and 32 | 027H0180 | \$60 |
| Magnetic tool for manually operating ICM valve sizes 40, 50 and 65 | 027H0181 | \$65 |

Features:

- Direct-weld connections to eliminate leak potential
- Adjustable speed digital stepper motor (Input: 4-20 mA; 0-20 mA; 0-10 VDC; 2-10 VDC)
- Magnetically coupled motor and valve are independently sealed to eliminate valve stem leakage and allow motor replacement while the system is still under pressure
- Digital display on motor constantly shows valve position and valve settings are easily programmed with tree buttons on the display
- Low temperature steel body, media range: -76 °F to +248 °F
- Stainless steel bolts
- 754 psig rated



MEV

Motorized Expansion Valves 1/2" - 3"
Flanged Body (Ductile Iron Body)

MEV MOTORIZED EXPANSION VALVE LESS MOTOR, INCL FLANGES

| Valve Size | Flow Coefficient Cv (Kv) | | Flanges Style and Sizes | | | | Part Number | List Price | Weight | |
|------------|--------------------------|--------|-------------------------|------------------|------------------|--------------|-------------|------------|------------------|------------------|
| | | | FPT | SW | WN | ODS | | | lbs | (kg) |
| | | | MEV 80-2 | 0.7 | (0.6) | 3/4", 1" | | | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" |
| MEV 80-3 | 1.2 | (1.0) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 027F3166-FL | \$1,013 | 14.3 | (6.5) |
| MEV 80-4 | 1.7 | (1.5) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 027F3167-FL | \$1,062 | 14.3 | (6.5) |
| MEV 80-5 | 2.4 | (2.1) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 027F3168-FL | \$1,062 | 14.3 | (6.5) |
| MEV 80-6 | 3.8 | (3.3) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 027F3169-FL | \$1,217 | 14.3 | (6.5) |
| MEV 80-7 | 5.8 | (5.0) | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1-1/8" | 027F3170-FL | \$1,217 | 14.3 | (6.5) |
| MEV 125 | 8.1 | (7.0) | - | 1 1/4" | 1 1/4", 1 1/2" | 1-3/8" | 027F3171-FL | \$1,408 | 25.5 | (11.5) |
| MEV 200 | 11.6 | (10.0) | - | 1-1/2" | 1 1/2", 2" | 1-5/8" | 027F3172-FL | \$1,760 | 31.0 | (14.0) |
| MEV 300 | 18 | (15.5) | - | 2" | 2", 2 1/2" | 2-1/8" | 027F3173-FL | \$1,769 | 44 | (20.0) |
| MEV 500 | 26.7 | (23) | - | 2 1/2" | 2 1/2", 3" | 2-5/8" | 027F3174-FL | \$2,019 | 63 | (28.5) |

FL - Please inform type of flange and size when ordering

MOTORS

| Description | Part Number | List Price |
|-------------------------------------------------------------------------------------------------------|-------------|------------|
| SMVE 24 Motor, 24Va.c., 0-10V/4-20 mA modulating control | 082H3032 | \$1,190 |
| SMVE Motor with EVM solenoid pilot kit (coil not included), 24Va.c., 0-10V/4-20 mA modulating control | 082H3032EV | \$1,388 |

ACCESSORIES

| Description | Part Number | List Price |
|--------------------------------------------------------------------------------------------------|-------------|------------|
| Spindle Heater, 24 V A.C., 18 W, includes aluminum housing. Use when media temp is below 32° F | 027F3180 | \$314 |
| EVM solenoid pilot kit for use with SMVE motor to optimize closing abilities (coil not included) | 027F1971 | \$198 |
| Pressure Gauge Connection, 1/4" FPT | 027B2062 | \$16 |
| Pressure Gauge Connection, 1/4" FPT with SNV-ST 1/4" MPT x 1/4" FPT gauge valve | 148B418062 | \$47 |

WHEN ORDERING PLEASE SPECIFY VALVE TYPE, NOMINAL PORT SIZE, FLANGE TYPE AND SIZE AND MOTOR TYPE.

When ordering, please specify valve type, nominal port size, flange type, and size and motor type.

Steps for ordering:

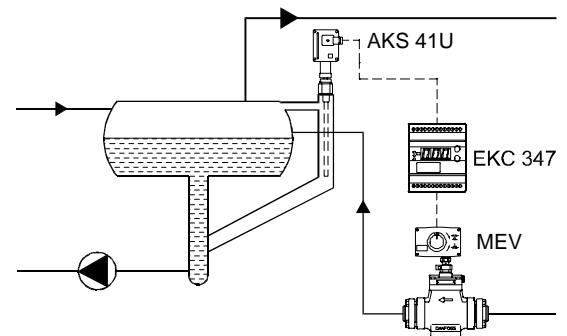
- Step 1: Specify valve type, and nominal port size, and flange type
- Step 2: Select motor type (with or without EVM kit)
- Step 3: Select accessories, noting that the spindle heater is required when media temp. is below 32°F

MEV

- Modulating V-port design minimizes pressure fluctuation
- Fail-safe spring return closes valve on power failure
- Motor assembly isolated from valve housing for easy service
- Ideal for wide operating ranges, including low capacity
- Visual indication of valve position

See EKC 347 on page 36.

See AKS 41U on page 32.



EVRA / EVRAT
Solenoid Valves

| Type | Cv | Nom. Port Size Inches | Min. Open dp psi | Available Connections | | | | List Prices (1) | |
|--------------------------------------------------------------------------------|------|-----------------------|------------------|-----------------------|------------------|------------------|--------------|-----------------|--------------|
| | | | | FPT | SOC | WN | ODS | With Flanges | Less Flanges |
| Servo Operated / Direct Operated | | | | | | | | | |
| EVRA3 | 0.3 | 1/8" | 0 | 3/8", 1/2" | 3/8", 1/2", 3/4" | 3/8", 1/2", 3/4" | 5/8", 7/8" | \$184 | \$156 |
| EVRA 10 | 1.8 | 3/8" | 0.75 | 3/8", 1/2" | 3/8", 1/2", 3/4" | 3/8", 1/2", 3/4" | 5/8", 7/8" | \$242 | \$214 |
| EVRA 15 | 3.2 | 1/2" | 0.75 | 3/8", 1/2" | 3/8", 1/2", 3/4" | 3/8", 1/2", 3/4" | 5/8", 7/8" | \$254 | \$226 |
| EVRA 20 | 5.3 | 3/4" | 0.75 | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1 1/8" | \$292 | \$252 |
| EVRA 25 | 11.6 | 1" | 2.9 | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1 1/8" | \$396 | \$356 |
| EVRA 32 | 18.7 | 1 1/4" | 2.9 | - | - | 1 1/4", 1 1/2" | - | \$521 | - |
| EVRA 40 | 29.3 | 1 1/2" | 2.9 | - | - | 1 1/2", 2" | - | \$622 | - |
| Servo Operated with Assisted Lift (zero DP needed for valve to be open) | | | | | | | | | |
| EVRAT 10 | 1.8 | 3/8" | 0 | 3/8", 1/2" | 3/8", 1/2", 3/4" | 3/8", 1/2", 3/4" | 5/8", 7/8" | \$258 | \$230 |
| EVRAT 15 | 3.2 | 1/2" | 0 | 3/8", 1/2" | 3/8", 1/2", 3/4" | 3/8", 1/2", 3/4" | 5/8", 7/8" | \$296 | \$268 |
| EVRAT 20 | 5.3 | 3/4" | 0 | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1 1/8" | \$350 | \$310 |

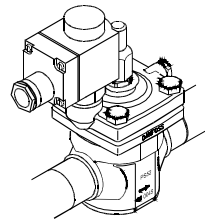


(1) Standard 14W solenoid coil with DIN connector is included in all valve prices.

See page 12 for ICS description. See next few pages for available strainers.

ICS Solenoid Valve
Direct Weld Body (Steel)

| Type | Cv | Module Port Size Inches | Min. Open dp psi | Available Connections | | | | List Prices (1) |
|-----------------------|------|-------------------------|------------------|-----------------------|----------|------------------|----------------------|-----------------|
| | | | | FPT | SOC | WN | ODS | |
| Pilot Operated | | | | | | | | |
| ICS 25-20 | 9.3 | 3/4" | 2.9 | 3/4", 1" | 3/4", 1" | 3/4", 1", 1 1/4" | 7/8", 1-1/8", 1-3/8" | \$401 |
| ICS 25-25 | 13.3 | 1" | 2.9 | 3/4", 1" | 3/4", 1" | 3/4", 1", 1 1/4" | 7/8", 1-1/8", 1-3/8" | \$436 |
| ICS 32 | 20 | 1 1/4" | 2.9 | - | 1 1/4" | 1 1/4", 1 1/2" | 1-3/8", 1-5/8" | \$478 |
| ICS 40 | 31 | 1 1/2" | 2.9 | - | 1-1/2" | 1 1/2", 2" | 1-5/8" | \$674 |
| ICS 50 | 51 | 2" | 2.9 | - | 2" | 2", 2 1/2" | 2-1/8" | \$767 |
| ICS 65 | 81 | 2 1/2" | 2.9 | - | 2 1/2" | 2 1/2", 3" | 2-5/8" | \$999 |



(1) Standard 14W solenoid coil with DIN connector is included in all valve prices.

PM Solenoid Valve
With Flanged Body (Ductile Iron)

| Type | Cv | Nom. Port Size Inches | Min. Open dp psi | Available Connections | | | | List Prices (1) | |
|-----------------------|------|-----------------------|------------------|-----------------------|------------------|------------------|--------------|-----------------|--------------|
| | | | | FPT | SOC | WN | ODS | With Flanges | Less Flanges |
| Pilot Operated | | | | | | | | | |
| PM 20 | 8.2 | 3/4" | 2.9 | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1 1/8" | \$392 | \$352 |
| PM 25 | 13.5 | 1" | 2.9 | 3/4", 1" | 3/4", 1", 1 1/4" | 3/4", 1", 1 1/4" | 7/8", 1 1/8" | \$426 | \$386 |
| PM 32 | 20 | 1 1/4" | 2.9 | - | 1 1/4" | 1 1/4", 1 1/2" | 1 3/8" | \$510 | \$457 |
| PM 40 | 35 | 1 1/2" | 2.9 | - | 1 1/2" | 1 1/2", 2" | 1 5/8" | \$687 | \$611 |
| PM 50 | 50 | 2" | 2.9 | - | 2" | 2", 2 1/2" | 2 1/8" | \$807 | \$722 |
| PM 65 | 92 | 3" | 2.9 | - | 2 1/2" | 2 1/2", 3" | 2 5/8" | \$1,082 | \$949 |
| PM 80 | 165 | 4" | 2.9 | - | - | 4" | - | \$2,255 | \$2,070 |
| PM 100 | 240 | 5" | 2.9 | - | - | 5" | - | \$3,908 | \$3,503 |
| PM 125 | 385 | 6" | 2.9 | - | - | 6" | - | \$6,011 | \$5,506 |



(1) Standard 14W solenoid coil with DIN connector is included in all valve prices.

Solenoid Valves

Danfoss solenoid valves are designed and built for industrial applications. They can be installed in suction lines, return lines (liquid/vapor), pressure-equalizing lines, or bypass lines.

- Direct or servo-operated valves (EVRA). Need differential pressure to operate valve.
- Assisted lift, servo-operated (EVRAT). No pressure drop needed to open valve.
- Pilot operated with direct weld body $3/4"$ to $2 1/2"$ (ICS)
- Pilot operated with flanged body $3/4"$ to $6"$ (PM)
- Closed-coupled strainer available up to 1" for type EVRA/EVRAT.

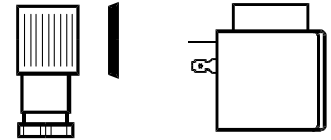
Coils for Solenoid Valves

Standard Encapsulated Solenoid Coils with DIN connector *

| Voltage | Hz | Holding | Connection | Part No. | List Price |
|------------|-------|---------|---------------|------------|------------|
| 110-120 AC | 60 | 14 W | DIN connector | 018F766356 | \$39 |
| 208-240 AC | 60 | 14 W | DIN connector | 018F765856 | \$39 |
| 24 AC | 50/60 | 14 W | DIN connector | 018F765556 | \$39 |

* Coils are UL recognized

Coil with DIN connector

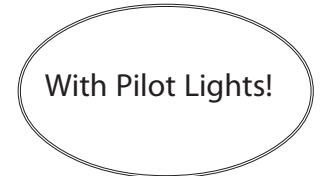


Encapsulated Solenoid Coils with DIN Connector and Built-in Pilot Light*

| Voltage | Hz | Holding | Color | Connection | Part No. | List Price |
|------------|-------|---------|--------|--------------------------------|------------|------------|
| 110-120 AC | 60 | 14 W | RED | DIN connector with pilot light | 018F7663RD | \$60 |
| 110-120 AC | 60 | 14 W | YELLOW | DIN connector with pilot light | 018F7663YL | \$60 |
| 110-120 AC | 60 | 14 W | GREEN | DIN connector with pilot light | 018F7663GR | \$60 |
| 208-240 AC | 60 | 14 W | RED | DIN connector with pilot light | 018F7658RD | \$60 |
| 24 AC | 50/60 | 14 W | RED | DIN connector with pilot light | 018F7655RD | \$60 |

* Coils are UL recognized

With Pilot Lights!

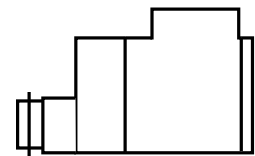


Encapsulated Solenoid Coils with Terminal Box *

| Voltage | Hz | Holding | Connection | Part No. | List Price |
|------------|-------|---------|--------------|----------|------------|
| 220/230 AC | 50/60 | 10 W | Terminal Box | 018F6732 | \$41 |
| 110 AC | 50/60 | 10 W | Terminal Box | 018F6730 | \$41 |
| 115 AC | 60 | 10 W | Terminal Box | 018F6710 | \$41 |
| 24 AC | 60 | 10 W | Terminal Box | 018F6715 | \$41 |
| 24 DC | - | 20 W | Terminal Box | 018F6857 | \$66 |
| 24 AC | 60 | 12 W | Terminal Box | 018F6815 | \$66 |
| 110 AC | 60 | 12 W | Terminal Box | 018F6813 | \$66 |

* A 12W coil or greater is recommended for use with our assisted lift solenoid valve type EVRAT and normally open solenoid pilot type EVM (NO)

Coil with terminal box



Note: Please contact Danfoss for solenoid coils with junction box

Strainers type FA For Direct Fitting on Solenoid Valves (close-couple strainers)

| Valve Size | Nom. Port Size | Will Directly Fit with Solenoid Valves Type/Size | Part No. | List Price |
|------------|----------------|--------------------------------------------------|----------|------------|
| FA 15 | 1/2" | EVRA 3 | 006-0043 | \$61 |
| FA 15 | 1/2" | EVRA 10, EVRAT 10, EVRA 15, EVRAT 15 | 006-1012 | \$64 |
| FA 20 | 3/4" | EVRA 20, EVRAT 20, PM 5, PM 10, PM 15, PM 20 | 006-1013 | \$84 |

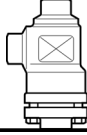
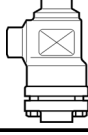
Purge Valve Drain Kits for FA Strainers

| Purge Valve Kit | Description | Part No. | List Price |
|--------------------|--------------------------------------------------------------------------------|------------|------------|
| For use with FA 15 | Includes 1/4" gauge valve type SNV, FA cover with 1/4" NPT connection and plug | 006-0276DK | \$54 |
| For use with FA 20 | Includes 1/4" gauge valve type SNV, FA cover with 1/4" NPT connection and plug | 006-0277DK | \$54 |

FIA

Threaded Strainers (Filters) FPT 1/2" - 1 1/4"

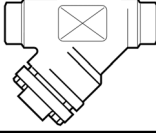
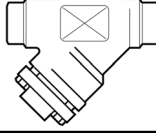
ANGLE

| FPT | 150 Mesh 100 microns |  | 100 Mesh 150 microns |  | | | | |
|---------------------|-------------------------|-----------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|-------------|--------------|--------------------|-------|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | |
| 1/2" (15) | FIA15 FPT ANG | 148H3081 10 | \$133 | FIA15 FPT ANG | 148H3081 15 | \$133 | 2.4 | (1.1) |
| 3/4" (20) | FIA20 FPT ANG | 148H3082 10 | \$133 | FIA20 FPT ANG | 148H3082 15 | \$133 | 2.4 | (1.1) |
| 1" (25) | FIA25 FPT ANG | 148H3083 10 | \$162 | FIA25 FPT ANG | 148H3083 15 | \$162 | 3.7 | (1.7) |
| 1 1/4" (32) | FIA32 FPT ANG | 148H3084 10 | \$164 | FIA32 FPT ANG | 148H3084 15 | \$164 | 3.7 | (1.7) |

| FPT | 72 Mesh 250 microns | | | 38 Mesh 500 microns | | | | |
|---------------------|------------------------|-------------|--------------|------------------------|-------------|--------------|--------------------|-------|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | |
| 1/2" (15) | FIA15 FPT ANG | 148H3081 25 | \$133 | FIA15 FPT ANG | 148H3081 50 | \$133 | 2.4 | (1.1) |
| 3/4" (20) | FIA20 FPT ANG | 148H3082 25 | \$133 | FIA20 FPT ANG | 148H3082 50 | \$133 | 2.4 | (1.1) |
| 1" (25) | FIA25 FPT ANG | 148H3083 25 | \$162 | FIA25 FPT ANG | 148H3083 50 | \$162 | 3.7 | (1.7) |
| 1 1/4" (32) | FIA32 FPT ANG | 148H3084 25 | \$164 | FIA32 FPT ANG | 148H3084 50 | \$164 | 3.7 | (1.7) |

**See page 26
for purge
valve drain
kits**

GLOBE

| FPT | 150 Mesh 100 microns |  | 100 Mesh 150 microns |  | | | | |
|---------------------|-------------------------|-------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|-------------|--------------|--------------------|-------|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | |
| 1/2" (15) | FIA15 FPT STR | 148H3115 10 | \$137 | FIA15 FPT STR | 148H3115 15 | \$137 | 2.4 | (1.1) |
| 3/4" (20) | FIA20 FPT STR | 148H3116 10 | \$137 | FIA20 FPT STR | 148H3116 15 | \$137 | 2.4 | (1.1) |
| 1" (25) | FIA25 FPT STR | 148H3117 10 | \$182 | FIA25 FPT STR | 148H3117 15 | \$182 | 3.7 | (1.7) |
| 1 1/4" (32) | FIA32 FPT STR | 148H3118 10 | \$184 | FIA32 FPT STR | 148H3118 15 | \$184 | 3.7 | (1.7) |

| FPT | 72 Mesh 250 microns | | | 38 Mesh 500 microns | | | | |
|---------------------|------------------------|-------------|--------------|------------------------|-------------|--------------|--------------------|-------|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | |
| 1/2" (15) | FIA15 FPT STR | 148H3115 25 | \$137 | FIA15 FPT STR | 148H3115 50 | \$137 | 2.4 | (1.1) |
| 3/4" (20) | FIA20 FPT STR | 148H3116 25 | \$137 | FIA20 FPT STR | 148H3116 50 | \$137 | 2.4 | (1.1) |
| 1" (25) | FIA25 FPT STR | 148H3117 25 | \$182 | FIA25 FPT STR | 148H3117 50 | \$182 | 3.7 | (1.7) |
| 1 1/4" (32) | FIA32 FPT STR | 148H3118 25 | \$184 | FIA32 FPT STR | 148H3118 50 | \$184 | 3.7 | (1.7) |

Mesh is the number of threads per inch.

Microns (μ) is the distance between two threads ($1\mu = 1/1000$ mm)

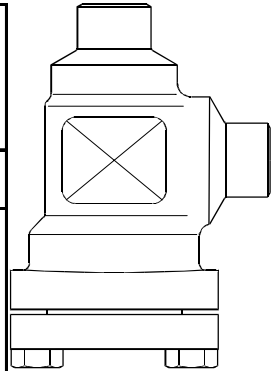
List Pricing

Effective: April 1, 2005

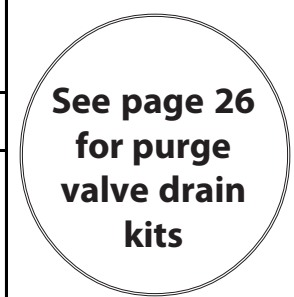
FIA

Socket Weld Strainers (Filters) SOC 1/2" - 2" ANGLE

| | | 150 Mesh 100 microns | | | 100 Mesh 150 microns | | | | |
|---------------------|---------------|-------------------------|--------------|---------------|-------------------------|--------------|--------------------|-------|--|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | | |
| 1/2" (15) | FIA15 SOC ANG | 148H3075 10 | \$133 | FIA15 SOC ANG | 148H3075 15 | \$133 | 2.4 | (1.1) | |
| 3/4" (20) | FIA20 SOC ANG | 148H3076 10 | \$133 | FIA20 SOC ANG | 148H3076 15 | \$133 | 2.4 | (1.1) | |
| 1" (25) | FIA25 SOC ANG | 148H3077 10 | \$162 | FIA25 SOC ANG | 148H3077 15 | \$162 | 3.7 | (1.5) | |
| 1 1/4" (32) | FIA32 SOC ANG | 148H3078 10 | \$164 | FIA32 SOC ANG | 148H3078 15 | \$164 | 3.7 | (1.5) | |
| 1 1/2" (40) | FIA40 SOC ANG | 148H3079 10 | \$166 | FIA40 SOC ANG | 148H3079 15 | \$166 | 3.7 | (1.5) | |
| 2" (50) | FIA50 SOC ANG | 148H3080 10 | \$218 | FIA50 SOC ANG | 148H3080 15 | \$218 | 6.2 | (6.2) | |

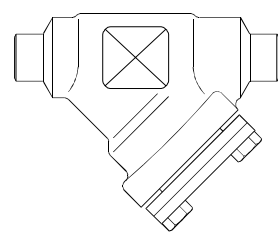


| | | 72 Mesh 250 microns | | | 38 Mesh 500 microns | | | | |
|---------------------|---------------|------------------------|--------------|---------------|------------------------|--------------|--------------------|-------|--|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | | |
| 1/2" (15) | FIA15 SOC ANG | 148H3075 25 | \$133 | FIA15 SOC ANG | 148H3075 50 | \$133 | 2.4 | (1.1) | |
| 3/4" (20) | FIA20 SOC ANG | 148H3076 25 | \$133 | FIA20 SOC ANG | 148H3076 50 | \$133 | 2.4 | (1.1) | |
| 1" (25) | FIA25 SOC ANG | 148H3077 25 | \$162 | FIA25 SOC ANG | 148H3077 50 | \$162 | 3.7 | (1.5) | |
| 1 1/4" (32) | FIA32 SOC ANG | 148H3078 25 | \$164 | FIA32 SOC ANG | 148H3078 50 | \$164 | 3.7 | (1.5) | |
| 1 1/2" (40) | FIA40 SOC ANG | 148H3079 25 | \$166 | FIA40 SOC ANG | 148H3079 50 | \$166 | 3.7 | (1.5) | |
| 2" (50) | FIA50 SOC ANG | 148H3080 25 | \$218 | FIA50 SOC ANG | 148H3080 50 | \$218 | 6.2 | (6.2) | |



GLOBE

| | | 150 Mesh 100 microns | | | 100 Mesh 150 microns | | | | |
|---------------------|---------------|-------------------------|--------------|---------------|-------------------------|--------------|--------------------|-------|--|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | | |
| 1/2" (15) | FIA15 SOC STR | 148H3109 10 | \$137 | FIA15 SOC STR | 148H3109 15 | \$137 | 3.1 | (1.4) | |
| 3/4" (20) | FIA20 SOC STR | 148H3110 10 | \$137 | FIA20 SOC STR | 148H3110 15 | \$137 | 3.1 | (1.4) | |
| 1" (25) | FIA25 SOC STR | 148H3111 10 | \$182 | FIA25 SOC STR | 148H3111 15 | \$182 | 5.3 | (2.4) | |
| 1 1/4" (32) | FIA32 SOC STR | 148H3112 10 | \$184 | FIA32 SOC STR | 148H3112 15 | \$184 | 5.3 | (2.4) | |
| 1 1/2" (40) | FIA40 SOC STR | 148H3113 10 | \$188 | FIA40 SOC STR | 148H3113 15 | \$188 | 5.3 | (2.4) | |
| 2" (50) | FIA50 SOC STR | 148H3114 10 | \$241 | FIA50 SOC STR | 148H3114 15 | \$241 | 7.7 | (3.5) | |



| | | 72 Mesh 250 microns | | | 38 Mesh 500 microns | | | | |
|---------------------|---------------|------------------------|--------------|---------------|------------------------|--------------|--------------------|-------|--|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | | |
| 1/2" (15) | FIA15 SOC STR | 148H3109 25 | \$137 | FIA15 SOC STR | 148H3109 50 | \$137 | 3.1 | (1.4) | |
| 3/4" (20) | FIA20 SOC STR | 148H3110 25 | \$137 | FIA20 SOC STR | 148H3110 50 | \$137 | 3.1 | (1.4) | |
| 1" (25) | FIA25 SOC STR | 148H3111 25 | \$182 | FIA25 SOC STR | 148H3111 50 | \$182 | 5.3 | (2.4) | |
| 1 1/4" (32) | FIA32 SOC STR | 148H3112 25 | \$184 | FIA32 SOC STR | 148H3112 50 | \$184 | 5.3 | (2.4) | |
| 1 1/2" (40) | FIA40 SOC STR | 148H3113 25 | \$188 | FIA40 SOC STR | 148H3113 50 | \$188 | 5.3 | (2.4) | |
| 2" (50) | FIA50 SOC STR | 148H3114 25 | \$241 | FIA50 SOC STR | 148H3114 50 | \$241 | 7.7 | (3.5) | |

Mesh is the number of threads per inch.

Microns (μ) is the distance between two threads ($1\mu = 1/1000$ m)

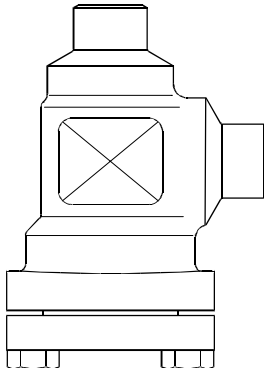
FIA

Butt Weld Strainers (Filters) BW 1/2"- 8"

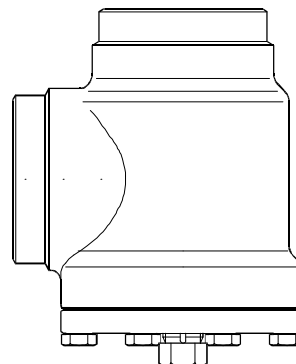
ANGLE

| | | 150 Mesh 100 microns | | | 100 Mesh 150 microns | | | | |
|---------------------|-------------|-------------------------|------------|--------------|-------------------------|------------|--------------------|--------|--|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | | |
| 1/2" (15) | FIA15 A ANG | 148H3063 10 | \$133 | FIA15 A ANG | 148H3063 15 | \$133 | 2.4 | (1.1) | |
| 3/4" (20) | FIA20 A ANG | 148H3064 10 | \$133 | FIA20 A ANG | 148H3064 15 | \$133 | 2.4 | (1.1) | |
| 1" (25) | FIA25 A ANG | 148H3065 10 | \$162 | FIA25 A ANG | 148H3065 15 | \$162 | 3.7 | (1.5) | |
| 1 1/4" (32) | FIA32 A ANG | 148H3066 10 | \$164 | FIA32 A ANG | 148H3066 15 | \$164 | 3.7 | (1.5) | |
| 1 1/2" (40) | FIA40 A ANG | 148H3067 10 | \$166 | FIA40 A ANG | 148H3067 15 | \$166 | 3.7 | (1.5) | |
| 2" (50) | FIA50 A ANG | 148H3068 10 | \$218 | FIA50 A ANG | 148H3068 15 | \$218 | 6.2 | (6.2) | |
| 2 1/2" (65) | | | | FIA65 A ANG | 148H3069 15 | \$349 | 8.4 | (3.8) | |
| 3" (80) | | | | FIA80 A ANG | 148H3070 15 | \$404 | 16.1 | (7.3) | |
| 4" (100) | | | | FIA100 A ANG | 148H3071 15 | \$535 | 26.2 | (11.9) | |
| 5" (125) | | | | FIA125 A ANG | 148H3072 15 | \$772 | 46.7 | (21.2) | |
| 6" (150) | | | | FIA150 A ANG | 148H3073 15 | \$1,065 | 67.2 | (30.5) | |
| 8" (200) | | | | FIA200 A ANG | 148H3074 15 | \$1,989 | 150 | (68.0) | |

| | | 72 Mesh 250 microns | | | 38 Mesh 500 microns | | | | |
|---------------------|--------------|------------------------|------------|--------------|------------------------|------------|--------------------|--------|--|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight lbs (kg) | | |
| 1/2" (15) | FIA15 A ANG | 148H3063 25 | \$133 | FIA15 A ANG | 148H3063 50 | \$133 | 2.4 | (1.1) | |
| 3/4" (20) | FIA20 A ANG | 148H3064 25 | \$133 | FIA20 A ANG | 148H3064 50 | \$133 | 2.4 | (1.1) | |
| 1" (25) | FIA25 A ANG | 148H3065 25 | \$162 | FIA25 A ANG | 148H3065 50 | \$162 | 3.7 | (1.5) | |
| 1 1/4" (32) | FIA32 A ANG | 148H3066 25 | \$164 | FIA32 A ANG | 148H3066 50 | \$164 | 3.7 | (1.5) | |
| 1 1/2" (40) | FIA40 A ANG | 148H3067 25 | \$166 | FIA40 A ANG | 148H3067 50 | \$166 | 3.7 | (1.5) | |
| 2" (50) | FIA50 A ANG | 148H3068 25 | \$218 | FIA50 A ANG | 148H3068 50 | \$218 | 6.2 | (6.2) | |
| 2 1/2" (65) | FIA65 A ANG | 148H3069 25 | \$349 | FIA65 A ANG | 148H3069 50 | \$349 | 8.4 | (3.8) | |
| 3" (80) | FIA80 A ANG | 148H3070 25 | \$404 | FIA80 A ANG | 148H3070 50 | \$404 | 16.1 | (7.3) | |
| 4" (100) | FIA100 A ANG | 148H3071 25 | \$535 | FIA100 A ANG | 148H3071 50 | \$535 | 26.2 | (11.9) | |
| 5" (125) | FIA125 A ANG | 148H3072 25 | \$772 | FIA125 A ANG | 148H3072 50 | \$772 | 46.7 | (21.2) | |
| 6" (150) | FIA150 A ANG | 148H3073 25 | \$1,065 | FIA150 A ANG | 148H3073 50 | \$1,065 | 67.2 | (30.5) | |
| 8" (200) | FIA200 A ANG | 148H3074 25 | \$1,989 | FIA200 A ANG | 148H3074 50 | \$1,989 | 150 | (68.0) | |



1/2" to 1 1/2"

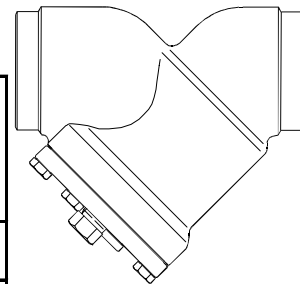


2" to 8"

FIA

Butt Weld Strainers (Filters) BW 1/2" - 8"

GLOBE



| | | 150 Mesh 100 microns | | 100 Mesh 150 microns | | | | |
|---------------------|-------------|-------------------------|--------------|-------------------------|-------------|----------------|--------|--------|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight | |
| | | | | | | | lbs | (kg) |
| 1/2" (15) | FIA15 A STR | 148H3097 10 | \$137 | FIA15 A STR | 148H3097 15 | \$137 | 3.1 | (1.4) |
| 3/4" (20) | FIA20 A STR | 148H3098 10 | \$137 | FIA20 A STR | 148H3098 15 | \$137 | 3.1 | (1.4) |
| 1" (25) | FIA25 A STR | 148H3099 10 | \$182 | FIA25 A STR | 148H3099 15 | \$182 | 5.3 | (2.4) |
| 1 1/4" (32) | FIA32 A STR | 148H3100 10 | \$184 | FIA32 A STR | 148H3100 15 | \$184 | 5.3 | (2.4) |
| 1 1/2" (40) | FIA40 A STR | 148H3101 10 | \$188 | FIA40 A STR | 148H3101 15 | \$188 | 5.3 | (2.4) |
| 2" (50) | FIA50 A STR | 148H3102 10 | \$241 | FIA50 A STR | 148H3102 15 | \$241 | 7.7 | (3.5) |
| 2 1/2" (65) | | | | FIA65 A STR | 148H3103 15 | \$389 | 11.7 | (5.3) |
| 3" (80) | | | | FIA80 A STR | 148H3104 15 | \$427 | 19 | (8.6) |
| 4" (100) | | | | FIA100 A STR | 148H3105 15 | \$618 | 32.8 | (14.9) |
| 5" (125) | | | | FIA125 A STR | 148H3106 15 | \$924 | 59.3 | (26.9) |
| 6" (150) | | | | FIA150 A STR | 148H3107 15 | \$1,252 | 112 | (51.0) |
| 8" (200) | | | | FIA200 A STR | 148H3108 15 | \$2,396 | 209 | (95.0) |

**See page 26
for purge
valve drain
kits**

| | | 72 Mesh 250 microns | | 38 Mesh 500 microns | | | | |
|---------------------|--------------|------------------------|----------------|------------------------|-------------|----------------|--------|--------|
| Size Inches (mm) | Type | Part No. | List Price | Type | Part No. | List Price | Weight | |
| | | | | | | | lbs | (kg) |
| 1/2" (15) | FIA15 A STR | 148H3097 25 | \$137 | FIA15 A STR | 148H3097 50 | \$137 | 3.1 | (1.4) |
| 3/4" (20) | FIA20 A STR | 148H3098 25 | \$137 | FIA20 A STR | 148H3098 50 | \$137 | 3.1 | (1.4) |
| 1" (25) | FIA25 A STR | 148H3099 25 | \$182 | FIA25 A STR | 148H3099 50 | \$182 | 5.3 | (2.4) |
| 1 1/4" (32) | FIA32 A STR | 148H3100 25 | \$184 | FIA32 A STR | 148H3100 50 | \$184 | 5.3 | (2.4) |
| 1 1/2" (40) | FIA40 A STR | 148H3101 25 | \$188 | FIA40 A STR | 148H3101 50 | \$188 | 5.3 | (2.4) |
| 2" (50) | FIA50 A STR | 148H3102 25 | \$241 | FIA50 A STR | 148H3102 50 | \$241 | 7.7 | (3.5) |
| 2 1/2" (65) | FIA65 A STR | 148H3103 25 | \$389 | FIA65 A STR | 148H3103 50 | \$389 | 11.7 | (5.3) |
| 3" (80) | FIA80 A STR | 148H3104 25 | \$427 | FIA80 A STR | 148H3104 50 | \$427 | 19 | (8.6) |
| 4" (100) | FIA100 A STR | 148H3105 25 | \$618 | FIA100 A STR | 148H3105 50 | \$618 | 32.8 | (14.9) |
| 5" (125) | FIA125 A STR | 148H3106 25 | \$924 | FIA125 A STR | 148H3106 50 | \$924 | 59.3 | (26.9) |
| 6" (150) | FIA150 A STR | 148H3107 25 | \$1,252 | FIA150 A STR | 148H3107 50 | \$1,252 | 112 | (51.0) |
| 8" (200) | FIA200 A STR | 148H3108 25 | \$2,396 | FIA200 A STR | 148H3108 50 | \$2,396 | 209 | (95.0) |

Mesh is the number of threads per inch.

Microns (μ) is the distance between two threads ($1\mu = 1/1000$ mm)

ADDITIONAL PRICE FOR MAGNETIC INSERTS

Please specify on the order if you want the filter equipped with magnetic inserts

| Type FIA Filter Size Inches (mm) | Magnetic Inserts | | Weight | |
|----------------------------------------|------------------|--------------|--------|-------|
| | Part No. | List Price | lbs | (kg) |
| 2" (50) | 2464+595 | \$66 | 1.1 | (0.5) |
| 2 1/2" (65) | 2464+596 | \$81 | 1.5 | (0.7) |
| 3" (80) | 2464+596 | \$81 | 1.5 | (0.7) |
| 4" (100) | 2464+596 | \$81 | 1.5 | (0.7) |
| 5" (125) | 2464+597 | \$123 | 1.8 | (0.8) |
| 6" (150) | 2464+597 | \$123 | 1.8 | (0.8) |
| 8" (200) | 2464+597 | \$123 | 1.8 | (0.8) |

FILTER BAGS FOR PLANT START UP

50 micron / includes support frame

| Type FIA Filter Size Inches (mm) | Filter Bags | |
|-------------------------------------|-------------|--------------|
| | Part No. | List Price |
| 2" (50) | 148H3150 | \$95 |
| 2 1/2" (65) | 148H3151 | \$111 |
| 3" (80) | 148H3152 | \$135 |
| 4" (100) | 148H3153 | \$185 |
| 5" (125) | 148H3154 | \$276 |
| 6" (150) | 148H3155 | \$406 |
| 8" (200) | 148H3156 | \$555 |



FIA

Replacement Strainer Elements for FIA Strainers

| Type FIA Filter Size | | Mesh Size | | Part No. | List Price |
|----------------------|----------|-----------|--------|----------|--------------|
| Inches | (mm) | microns | (Mesh) | | |
| 1/2", 3/4" | 15-20 | 100 | (150) | 148H3122 | \$48 |
| 1", 1 1/4", 1 1/2" | 25-32-40 | 100 | (150) | 148H3123 | \$66 |
| 2" | 50 | 100 | (150) | 148H3157 | \$85 |
| 1/2", 3/4" | 15-20 | 150 | (100) | 148H3124 | \$48 |
| 1", 1 1/4", 1 1/2" | 25-32-40 | 150 | (100) | 148H3125 | \$66 |
| 2" | 50 | 150 | (100) | 148H3130 | \$85 |
| 2 1/2" | 65 | 150 | (100) | 148H3131 | \$102 |
| 3" | 80 | 150 | (100) | 148H3119 | \$122 |
| 4" | 100 | 150 | (100) | 148H3132 | \$168 |
| 5" | 125 | 150 | (100) | 148H3133 | \$249 |
| 6" | 150 | 150 | (100) | 148H3134 | \$368 |
| 8" | 200 | 150 | (100) | 148H3135 | \$505 |
| 1/2", 3/4" | 15-20 | 250 | (72) | 148H3126 | \$48 |
| 1", 1 1/4", 1 1/2" | 25-32-40 | 250 | (72) | 148H3127 | \$66 |
| 2" | 50 | 250 | (72) | 148H3138 | \$85 |
| 2 1/2" | 65 | 250 | (72) | 148H3139 | \$102 |
| 3" | 80 | 250 | (72) | 148H3120 | \$122 |
| 4" | 100 | 250 | (72) | 148H3140 | \$168 |
| 5" | 125 | 250 | (72) | 148H3141 | \$249 |
| 6" | 150 | 250 | (72) | 148H3142 | \$368 |
| 8" | 200 | 250 | (72) | 148H3143 | \$505 |
| 1/2", 3/4" | 15-20 | 500 | (38) | 148H3128 | \$48 |
| 1", 1 1/4", 1 1/2" | 25-32-40 | 500 | (38) | 148H3129 | \$66 |
| 2" | 50 | 500 | (38) | 148H3144 | \$85 |
| 2 1/2" | 65 | 500 | (38) | 148H3145 | \$102 |
| 3" | 80 | 500 | (38) | 148H3121 | \$122 |
| 4" | 100 | 500 | (38) | 148H3146 | \$168 |
| 5" | 125 | 500 | (38) | 148H3147 | \$249 |
| 6" | 150 | 500 | (38) | 148H3148 | \$368 |
| 8" | 200 | 500 | (38) | 148H3149 | \$505 |

Mesh is the number of threads per inch.

Microns (μ) is the distance between two threads ($1\mu = 1/1000$ mm)

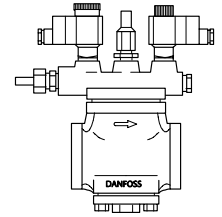
Purge Valve Drain Kits for FIA Strainers

| Purge Valve Kit | Description | Part No. | List Price |
|-------------------|---------------------------------------------------------------------------------|------------|-------------|
| For FIA 15/20 | Includes 1/4" gauge valve type SNV, FIA cover with 1/4" NPT connection and plug | 148H1182DK | \$54 |
| For FIA 25/32/40 | Includes 1/4" gauge valve type SNV, FIA cover with 1/4" NPT connection and plug | 148H1183DK | \$54 |
| For FIA 50 to 200 | Includes 1/4" gauge valve type SNV and adapter for mounting into FIA cover | 148B4180DK | \$54 |

PML

Gas Powered Stop Valves Globe (1 1/4" - 6")

| Valve Size | Cv | Nom. Port Size Inches | Min. Open dp psi | Available Flange Connections | | | List Prices (1) | |
|-------------|------|-----------------------|------------------|------------------------------|----------------|--------|-----------------|----------------|
| | | | | SOC | WN | ODS | With Coils (2) | Less Coils |
| Gas Powered | | | | | | | | |
| PML 32 | 29.6 | 1 1/4" | 0 | 1 1/4" | 1 1/4", 1 1/2" | 1 3/8" | \$935 | \$857 |
| PML 40 | 38.9 | 1 1/2" | 0 | 1 1/2" | 1 1/2", 2" | 1 5/8" | \$1,065 | \$987 |
| PML 50 | 58 | 2" | 0 | 2" | 2", 2 1/2" | 2 1/8" | \$1,217 | \$1,139 |
| PML 65 | 94 | 3" | 0 | 2 1/2" | 2 1/2", 3" | 2 5/8" | \$1,497 | \$1,419 |
| PML 80 | 218 | 4" | 0 | - | 4" | - | \$3,249 | \$3,171 |
| PML 100 | 335 | 5" | 0 | - | 5" | - | \$3,871 | \$3,793 |
| PML 125 | 455 | 6" | 0 | - | 6" | - | \$6,402 | \$6,324 |



PMLX

Gas Powered Stop Valves Globe with Two-Step Opening (1 1/4" - 6")

| Valve Size | Cv | Nom. Port Size Inches | Min. Open dp psi | Available Flange Connections | | | List Prices (1) | |
|--------------------------------|-------|-----------------------|------------------|------------------------------|----------------|--------|-----------------|----------------|
| | | | | SOC | WN | ODS | With Coils (2) | Less Coils |
| Gas Powered (Two-Step Opening) | | | | | | | | |
| PMLX 32 | 26 | 1 1/4" | 0 | 1 1/4" | 1 1/4", 1 1/2" | 1 3/8" | \$969 | \$891 |
| PMLX 40 | 34.1 | 1 1/2" | 0 | 1 1/2" | 1 1/2", 2" | 1 5/8" | \$1,126 | \$1,048 |
| PMLX 50 | 55.5 | 2" | 0 | 2" | 2", 2 1/2" | 2 1/8" | \$1,280 | \$1,202 |
| PMLX 65 | 93.1 | 3" | 0 | 2 1/2" | 2 1/2", 3" | 2 5/8" | \$1,566 | \$1,488 |
| PMLX 80 | 197.2 | 4" | 0 | - | 4" | - | \$3,553 | \$3,475 |
| PMLX 100 | 280.7 | 5" | 0 | - | 5" | - | \$4,370 | \$4,292 |
| PMLX 125 | 446.6 | 6" | 0 | - | 6" | - | \$6,297 | \$6,219 |

(1) Flange price included in all valve prices. Please specify flange type and size when ordering.

(2) Coil prices include 2pcs. standard 14W a.c. coil with DIN connector which are needed for each valve. Please specify coil voltage and Hz when ordering. See replacement coils for other coil options.

Note: Separate filter available. See FIA filters.

GPLX

Gas Powered Solenoid Valves Angle 3" - 6" Two Step Opening

ANGLE FLOW with BUTT-WELD CONNECTIONS

| Connection Size Inches (mm) | | Valve Size | Part No. | List Price (1) With Coils | List Price Less Coils | Weight lbs (kg) | |
|-----------------------------|-------|------------|----------|---------------------------|-----------------------|-----------------|--------|
| 3" | (80) | GPLX 80 A | 148G3155 | \$2,949 | \$2,871 | 44.0 | (20.0) |
| 4" | (100) | GPLX 100 A | 148G3156 | \$4,041 | \$3,963 | 73.0 | (33.0) |
| 5" | (125) | GPLX 125 A | 148G3157 | \$5,763 | \$5,685 | 99.0 | (45.0) |
| 6" | (150) | GPLX 150 A | 148G3158 | \$7,738 | \$7,660 | 143.0 | (65.0) |

(1) Coil prices include 2pcs. standard 14W a.c. coils with DIN connector which are needed for each valve. Please specify coil voltage and Hz when ordering.

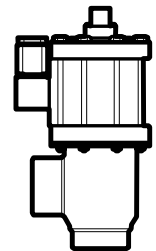
See replacement coils for other coil options

| COILS | | | | |
|---------|---------------|------------------|------------|-------------|
| Holding | Connection | Voltage | Part No. | List Price |
| 14 W | DIN connector | 24V, 60Hz | 018F765556 | \$39 |
| 14 W | DIN connector | 110 - 120V, 60Hz | 018F766356 | \$39 |
| 14 W | DIN connector | 208 - 240V, 60Hz | 018F765856 | \$39 |

OPTIONAL EQUIPMENT: FILTER FOR PILOT CONNECTION

With threaded connection - 1/4" BSP (male)

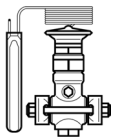
| Size Inches (mm) | Type | Part No. | List Price | Weight lbs (kg) | |
|------------------|------|--------------|------------|-----------------|-----------|
| 1/4" | (6) | FIL 6 R 1/4" | 2464+608 | \$49 | 0.4 (0.2) |



TEA

Thermal Expansion Valves for Ammonia

1-85 TR 1/2" to 3/4" - Patented double contact bulb for tighter control

|  | | | | | | | | |
|-----------------------------------------------------------------------------------|---------|-----------------------|------------------------|-----------------------|-----------------------------------|--------------------|--------|-------|
| Type | Nom. TR | Part No. | | | Flange Connections (Inlet/Outlet) | Valve with flanges | Weight | |
| | | Valve with WN flanges | Valve with FPT flanges | Valve with SW flanges | | | lbs | (kg) |
| TEA 20 Range: -58 °F to 32 °F | | | | | | | | |
| TEA 20-1 | 1 | 068G600000 | 068G600049 | 068G600045 | 1/2" | \$290 | 4.6 | (2.1) |
| TEA 20-2 | 2 | 068G600100 | 068G600149 | 068G600145 | 1/2" | | | |
| TEA 20-3 | 3 | 068G600200 | 068G600249 | 068G600245 | 1/2" | | | |
| TEA 20-5 | 5 | 068G600300 | 068G600349 | 068G600345 | 1/2" | | | |
| TEA 20-8 | 8 | 068G600400 | 068G600449 | 068G600445 | 1/2" | | | |
| TEA 20-12 | 12 | 068G600500 | 068G600549 | 068G600545 | 1/2" | | | |
| TEA 20-20 | 20 | 068G600600 | 068G600649 | 068G600645 | 1/2" | \$367 | | |
| TEA 20 Range: -4 °F to 86 °F | | | | | | | | |
| TEA 20-1 | 1 | 068G613700 | 068G613749 | 068G613745 | 1/2" | \$290 | 4.6 | (2.1) |
| TEA 20-2 | 2 | 068G613300 | 068G613349 | 068G613345 | 1/2" | | | |
| TEA 20-3 | 3 | 068G613400 | 068G613449 | 068G613445 | 1/2" | | | |
| TEA 20-5 | 5 | 068G613800 | 068G613849 | 068G613845 | 1/2" | | | |
| TEA 20-8 | 8 | 068G613900 | 068G613949 | 068G613945 | 1/2" | | | |
| TEA 20-12 | 12 | 068G614000 | 068G614049 | 068G614045 | 1/2" | | | |
| TEA 20-20 | 20 | 068G613500 | 068G613549 | 068G613545 | 1/2" | \$367 | | |
| TEA 85 Range: -58 °F to 32 °F | | | | | | | | |
| TEA 85-33 | 33 | 068G600700 | 068G600790 | 068G600778 | 3/4" | \$556 | 6.6 | (4.5) |
| TEA 85-55 | 55 | 068G600800 | 068G600890 | 068G600878 | 3/4" | | | |
| TEA 85-85 | 85 | 068G600900 | 068G600990 | 068G600978 | 3/4" | \$591 | | |
| TEA 85 Range: -4 °F to 86 °F | | | | | | | | |
| TEA 85-33 | 33 | 068G614100 | 068G614190 | 068G614178 | 3/4" | \$556 | 6.6 | (4.5) |
| TEA 85-55 | 55 | 068G614200 | 068G614290 | 068G614278 | 3/4" | | | |
| TEA 85-85 | 85 | 068G614300 | 068G614390 | 068G614378 | 3/4" | \$591 | | |

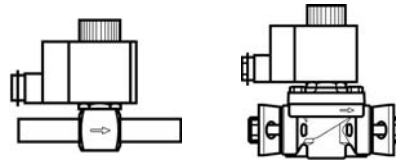
Capillary tube length = 16 feet

Spare thermostatic elements #068G3250 (range -58 °F to 32 °F) and #068G3252 (-4 °F to 86 °F). **List price \$187 each.**

Strainers

| Close-couple strainer type FA | Part No. | List Price |
|-----------------------------------------------------------------------|----------|-------------|
| FA 15 Strainer for direct fitting on TEA 20 valve sizes 1 to 20 | 006-0042 | \$61 |
| FA 20 Strainer for direct fitting on TEA 85 valve sizes 33, 55 and 85 | 006-0048 | \$83 |

AKVA 10, AKVA 15, and AKVA 20
Electronic Expansion Valves



| Type | Nom. TR | Connections | | List Price (1) with Coil | Strainer (2) Part No | Valve Only Part No | List Price (3) Valve Only |
|----------|---------|-----------------------|--------|-----------------------------|-------------------------------------------------------------------------------------------------------|-----------------------|------------------------------|
| | | Inlet | Outlet | | | | |
| AKVA10-1 | 1.1 | 1/2" | 3/4" | \$295 | Has a built-in strainer and an external strainer is not necessary. | 068F3281 | \$256 |
| AKVA10-2 | 1.8 | 1/2" | 3/4" | \$295 | | 068F3282 | \$256 |
| AKVA10-3 | 2.8 | 1/2" | 3/4" | \$295 | | 068F3283 | \$256 |
| AKVA10-4 | 4.5 | 1/2" | 3/4" | \$295 | | 068F3284 | \$256 |
| AKVA10-5 | 7.1 | 1/2" | 3/4" | \$295 | | 068F3285 | \$256 |
| AKVA10-6 | 11.4 | 1/2" | 3/4" | \$295 | | 068F3286 | \$256 |
| AKVA10-7 | 17.9 | 1/2" | 3/4" | \$295 | | 068F3267 | \$256 |
| AKVA15-1 | 35 | Flanges | | \$595 | Please select a FIA strainer with 100 µm insert from our available FIA strainers starting on page 20. | 068F5020 | \$516 |
| AKVA15-2 | 60 | Available | | \$595 | | 068F5023 | \$516 |
| AKVA15-3 | 90 | 3/4" & 1" SW, FPT, WN | | \$595 | | 068F5026 | \$516 |
| AKVA15-4 | 140 | 1 1/4" SW and WN only | | \$595 | | 068F5029 | \$516 |
| AKVA20-1 | 140 | 1 1/4" | 1 1/4" | \$1,318 | | 042H2101 | \$1,279 |
| AKVA20-2 | 240 | 1 1/4" | 1 1/4" | \$1,318 | | 042H2102 | \$1,279 |
| AKVA20-3 | 350 | 1 1/4" | 1 1/4" | \$1,318 | | 042H2103 | \$1,279 |
| AKVA20-4 | 600 | 1 1/2" | 1 1/2" | \$1,318 | | 042H2104 | \$1,279 |
| AKVA20-5 | 900 | 2" | 2" | \$1,318 | 042H2105 | \$1,279 | |

(1) Price includes valve body, standard 24 V a.c., 14W coil with DIN connector and flanges where applicable. Other voltages available. Consult Danfoss for assistance.

(2) A 100 µm strainer must be mounted in front of AKVA 15 and AKVA 20 valves. Price will depend on the selected FIA filter.

(3) Price does not include coil, strainer or flanges (where applicable).

OPTION 1 FOR AKVA 10, AKVA 15, AND AKVA 20 LIQUID LEVEL CONTROL

| Type | Description | Part No. | List Price |
|---------|---------------------------------------------------------------------------|------------|------------|
| EKC 347 | Electronic Liquid Level Control. (1) | 084B7067 | \$782 |
| Coil | 24 V, 14 W, 60Hz standard coil with DIN connector for use with AKVA valve | 018F765556 | \$39 |

(1) Requires 24 V A.C., 50/60 Hz, 60 VA power supply. Supplied by others.

OPTION 2 FOR AKVA 10, AKVA 15, AND AKVA 20 EVAPORATOR CONTROL

| Type | Description | Part No. | List Price |
|----------|----------------------------------------------------------------------------------------|------------|------------|
| EKC 315A | Evaporator Controller (superheat) (1) | 084B7086 | \$929 |
| AKS 33 | Pressure transducer with 1/4" MPT and DIN plug. Range 0-200PSIA and 4-20mA output. (2) | 060G1711 | \$350 |
| AKS 21M | General purpose temperature sensor PT 1000 (2) (3) | 084N2003 | \$45 |
| Coil | 24 V, 14 W, 60Hz standard coil with DIN connector for use with AKVA valve | 018F765556 | \$39 |

(1) Requires 24 V A.C., 50/60 Hz, 60 VA power supply. Supplied by others.

(2) Other pressure ranges, temperature ranges, connection types and sensor mounting styles available. Please consult Danfoss for assistance.

(3) Temperature Range -94°F to +356°F (-70°C to +180°C), 8.2 ft. cable (2.5m)

Features

- 1/2" to 2"
- -58°F to 302°F
- 1-900 TR capacity range for ammonia applications
- Pulse width modulating electronic expansion valve
- Full velocity through the valve combined with its damping orifice makes it ideal for flooded systems
- AKVA does not require manual adjustments for changes in capacity (10 to 100%)



: Distributed by H.A. Phillips & Co.

Moisture & Liquid Level Indicators

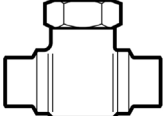
List Pricing

Effective: April 1, 2005

MLI

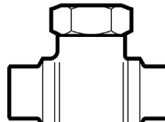
Moisture and Liquid Level Indicators 3/4" - 1 5/8"

STRAIGHT FLOW FOR R22, R500 and R502

| STEEL ELEMENT / STEEL HOUSING | | | | | | | |  | |
|-------------------------------|--------------|----------|--------------|---------------------|---------------|----------|--------------|-----------------------------------------------------------------------------------|-------|
| Butt-Weld Connections | | | | Solder Connections | | | | Weight | |
| Size Inches (mm) | Type | Part No. | List Price | Size Inches (mm) | Type | Code No. | List Price | lbs | (kg) |
| 3/4" (20) | MLI 20 A 100 | 2511+088 | \$128 | 7/8" 20 | MLI 20 SA 100 | 2511+019 | \$128 | 1.5 | (0.7) |
| 1" (25) | MLI 25 A 100 | 2511+089 | \$128 | 1 1/8" 25 | MLI 25 SA 100 | 2511+020 | \$128 | 1.5 | (0.7) |
| 1 1/4" (32) | MLI 32 A 100 | 2511+090 | \$139 | 1 3/8" 32 | MLI 32 SA 100 | 2511+021 | \$139 | 1.8 | (0.8) |
| 1 1/2" (40) | MLI 40 A 100 | 2511+091 | \$139 | 1 5/8" 40 | MLI 40 SA 100 | 2511+022 | \$139 | 1.8 | (0.8) |

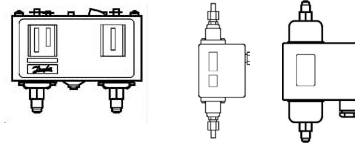
Prices includes: Moisture and liquid indicator for R12, R22 and R502 liquid lines, with connections suitable for both welding into steel pipes and soldering into copper pipes.

STRAIGHT FLOW FOR HFC AND HCFC (R134aR404A, R407A, ETC.)

| BRASS ELEMENT / STEEL HOUSING DO NOT USE WITH AMMONIA | | | | | | | |  | |
|----------------------------------------------------------|--------------|----------|--------------|---------------------|---------------|----------|--------------|-----------------------------------------------------------------------------------|-------|
| Butt-Weld Connections | | | | Solder Connections | | | | Weight | |
| Size Inches (mm) | Type | Part No. | List Price | Size Inches (mm) | Type | Code No. | List Price | lbs | (kg) |
| 3/4" (20) | MLI 20 A 100 | 2511+097 | \$140 | 7/8" 20 | MLI 20 SA 100 | 2511+093 | \$140 | 1.5 | (0.7) |
| 1" (25) | MLI 25 A 100 | 2511+098 | \$140 | 1 1/8" 25 | MLI 25 SA 100 | 2511+094 | \$140 | 1.5 | (0.7) |
| 1 1/4" (32) | MLI 32 A 100 | 2511+099 | \$152 | 1 3/8" 32 | MLI 32 SA 100 | 2511+095 | \$152 | 1.8 | (0.8) |
| 1 1/2" (40) | MLI 40 A 100 | 2511+100 | \$152 | 1 5/8" 40 | MLI 40 SA 100 | 2511+096 | \$152 | 1.8 | (0.8) |

Prices includes: Moisture and liquid indicator for HFC and HCFC liquid lines, with connections suitable for both welding into steel pipes and soldering into copper pipes.

KP, RT, and MP
Pressure Controls Designed for Ammonia



| Type KP Pressure Controls | | | | | | | | | | |
|----------------------------------|----------|--------------|----------------------|------------------|--------------------|------------------|--------------|---------------|------------|--------------|
| Type* | Pressure | Contact Type | Low Pressure (LP) | | High Pressure (HP) | | Reset | | Part No. | List Price |
| | | | Range in. Hg to psig | Differential psi | Range psig | Differential psi | Low Pressure | High Pressure | | |
| KP1A | Low | SPDT | 6" -108 | 10-58 | - | - | Auto | - | 060-116201 | \$124 |
| KP5A | High | SPDT | - | - | 85 - 300 | 25-85 | - | Auto | 060-502901 | \$124 |
| KP5A | High | SPDT | - | - | 85 - 300 | Fixed 43 | - | Manual | 060-203966 | \$130 |
| KP15A | Dual | SPDT | 6" - 108 | 10 - 58 | 85 - 400 | Fixed 58 | Auto | Auto | 060-129501 | \$238 |
| KP15A | Dual | SPDT | 6" - 108 | 6 - 108 | 85 - 400 | Fixed 58 | Auto | Manual | 060-204266 | \$255 |

*Supplied with 1/4" FPT connection.

| Type RT Pressure Controls | | | | | | | | | | |
|----------------------------------|----------|--------------|----------------------|------------------|--------------------|------------------|--------------|---------------|----------|--------------|
| Type* | Pressure | Contact Type | Low Pressure (LP) | | High Pressure (HP) | | Reset | | Part No. | List Price |
| | | | Range in. Hg to psig | Differential psi | Range psig | Differential psi | Low Pressure | High Pressure | | |
| RT1A | Low | SPDT | 25" - 72 | 7 - 23 | - | - | SPDT | Auto | 017-5001 | \$238 |
| RT5A | High | SPDT | - | - | 58 - 245 | 17 - 58 | SPDT | Auto | 017-5046 | \$238 |
| RT5A | High | SPDT | - | - | 58 - 245 | Fixed 17 | SPDT | Manual | 017-5047 | \$285 |

*Supplied with 3/8" male BSP connection and an adapter for conversion to 6.5mm ID/10mm OD weld nipple.

| Type MP Oil Differential Pressure Controls | | | | | | |
|---------------------------------------------------|--------------------------------------------|------------------|-------------------------|-----------------------------|------------|--------------|
| Type | Operating Range for LP Side in. Hg to psig | Differential psi | Time relay release time | Type Reset | Part No. | List Price |
| MP55A* | 29" - 170 | 4.3 - 64 | 45 Sec. | Manual | 060B017466 | \$287 |
| MP55A* | 29" - 170 | 4.3 - 64 | 60 Sec. | Manual | 060B017566 | \$287 |
| MP55A* | 29" - 170 | 4.3 - 64 | 90 Sec. | Manual | 060B017666 | \$287 |
| MP55A* | 29" - 170 | 4.3 - 64 | 120 Sec. | Manual | 060B017766 | \$287 |
| MP55A** | 29" - 170 | 4.3 - 64 | 60 Sec. | Manual w/ Operational Light | 060B201766 | \$328 |

*Supplied with 3/8" male BSP connection and an adapter for conversion to 6.5mm ID/10mm OD weld nipple.

**Supplied with 3/8" male BSP connection and an adapter for conversion to 1/4" FPT connection.

| Type RT Differential Pressure Controls | | | | | | | |
|-----------------------------------------------|-------------------------------------|-----------------------------|----------|------------|--------------|----------|--------------|
| Type* | Regulation Range (Differential) psi | Mechanical Differential psi | MWP psig | Type Reset | Type Contact | Part No. | List Price |
| RT260A | 7 - 58 | Fixed 4.3 | 319 | Auto | SPDT | 017D0021 | \$443 |
| RT262A | 1 - 21 | Fixed 1.5 | 160 | Auto | SPDT | 017D0025 | \$443 |

*Supplied with 3/8" male BSP connection and adapter for conversion to 6.5mm ID/10mm OD weld nipple.

FOR OTHER RANGES OR VARIATIONS CONSULT DANFOSS FOR ASSISTANCE



RT Thermostats

| Type | Pressure | Regulation Range (°F) | Max. Bulb Temp (°F) | Type Contact | Reset | Differential Temp | | Code Number | List Price |
|------|----------------|-----------------------|---------------------|--------------|-------|-------------------------|--------------------------|-------------|--------------|
| | | | | | | Lowest temp. setting °F | Highest temp. setting °F | | |
| RT3 | Vapor (1) | -13° - +59° | 302 | SPDT | Auto | 5 - 18 | 1.8 - 8.1 | 017-5014 | \$187 |
| RT9 | Vapor (1) | -49° - +5° | 302 | SPDT | Auto | 4 - 18 | 1.8 - 5.4 | 017-5066 | \$200 |
| RT7 | Adsorption (2) | -13° - +59° | 302 | SPDT | Auto | 3.6 - 18 | 4.5 - 25.2 | 017-5053 | \$200 |
| RT14 | Adsorption (2) | +23° - +86° | 302 | SPDT | Auto | 3.6 - 14.4 | 3.6 - 18 | 017-5099 | \$213 |
| RT4 | Vapor (1) | +23° - +86° | 167 | SPDT | Auto | 2.7 - 12.6 | 2.1 - 7.2 | 017-5036 | \$188 |
| RT11 | Vapor (1) | -22° - +32° | 150 | SPDT | Auto | 2.7 - 10.8 | 1.8 - 5.4 | 017-5083 | \$188 |

(1) The sensor must be located in a location colder than the thermostat housing and capillary tube

(2) The sensor can be located in a location warmer than the thermostat housing and capillary tube

FOR OTHER RANGES OR VARIATIONS CONSULT DANFOSS FOR ASSISTANCE

AKS 41U
Liquid Level Sensors

LIQUID LEVEL SENSORS AKS 41U **WITHOUT BARGRAPH**

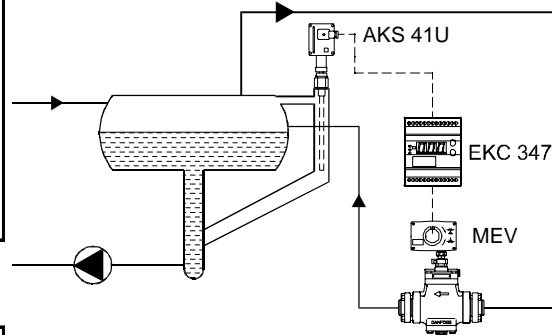
| Active Length Inches (mm) | Insertion Length Inches (mm) | Type | Part No. | List Price |
|------------------------------|---------------------------------|---------------|----------|------------|
| 3.13 (79) | 6 (152) | AKS 41U-6" | 084H4100 | \$750 |
| 5.13 (130) | 8 (203) | AKS 41U-8" | 084H4102 | \$761 |
| 9.13 (232) | 12 (305) | AKS 41U-12" | 084H4104 | \$771 |
| 12.43 (316) | 15.3 (389) | AKS 41U-15.3" | 084H4106 | \$832 |
| 16.33 (415) | 19.2 (488) | AKS 41U-19.2" | 084H4108 | \$864 |
| 20.23 (514) | 23.1 (587) | AKS 41U-23.1" | 084H4110 | \$937 |
| 27.1 (689) | 30 (762) | AKS 41U-30" | 084H4112 | \$950 |
| 32.1 (816) | 35 (889) | AKS 41U-35" | 084H4114 | \$1,055 |
| 42.1 (1070) | 45 (1143) | AKS 41U-45" | 084H4116 | \$1,083 |
| 52.1 (1324) | 55 (1397) | AKS 41U-55" | 084H4118 | \$1,119 |
| 62.1 (1578) | 65 (1651) | AKS 41U-65" | 084H4122 | \$1,235 |
| 82.1 (2086) | 85 (2159) | AKS 41U-85" | 084H4126 | \$1,392 |
| 102.1 (2594) | 105 (2667) | AKS 41U-105" | 084H4130 | \$1,541 |
| 117.1 (2974) | 120 (3048) | AKS 41U-120" | 084H4132 | \$1,633 |

LIQUID LEVEL SENSORS AKS 41U **WITH BARGRAPH**

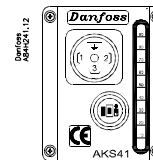
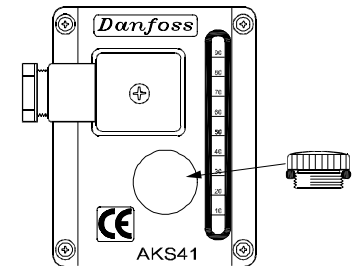
| Active Length Inches (mm) | Insertion Length Inches (mm) | Type | Part No. | List Price |
|------------------------------|---------------------------------|---------------|----------|------------|
| 3.13 (79) | 6 (152) | AKS 41U-6" | 084H4101 | \$1,213 |
| 5.13 (130) | 8 (203) | AKS 41U-8" | 084H4103 | \$1,243 |
| 9.13 (232) | 12 (305) | AKS 41U-12" | 084H4105 | \$1,274 |
| 12.43 (316) | 15.3 (389) | AKS 41U-15.3" | 084H4107 | \$1,308 |
| 16.33 (415) | 19.2 (488) | AKS 41U-19.2" | 084H4109 | \$1,346 |
| 20.23 (514) | 23.1 (587) | AKS 41U-23.1" | 084H4111 | \$1,391 |
| 27.1 (689) | 30 (762) | AKS 41U-30" | 084H4113 | \$1,438 |
| 32.1 (816) | 35 (889) | AKS 41U-35" | 084H4115 | \$1,490 |
| 42.1 (1070) | 45 (1143) | AKS 41U-45" | 084H4117 | \$1,515 |
| 52.1 (1324) | 55 (1397) | AKS 41U-55" | 084H4119 | \$1,557 |
| 62.1 (1578) | 65 (1651) | AKS 41U-65" | 084H4123 | \$1,657 |
| 82.1 (2086) | 85 (2159) | AKS 41U-85" | 084H4127 | \$1,838 |
| 102.1 (2594) | 105 (2667) | AKS 41U-105" | 084H4131 | \$2,023 |
| 117.1 (2974) | 120 (3048) | AKS 41U-120" | 084H4133 | \$2,113 |

Features

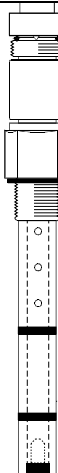
- Level probe connection is 3/4" male NPT
- From 6" to 120" - other lengths upon request
- Detachable electronic top - isolated from refrigerant
- Available with bar graph liquid level indication (optional)
- Pre-calibrated for R717; easily calibrated for other refrigerants



See EKC 347 for level controller on



3/4" NPT



LLG

Liquid Level Glasses 7 1/4" - 61"

LIQUID LEVEL GLASSES - LLG

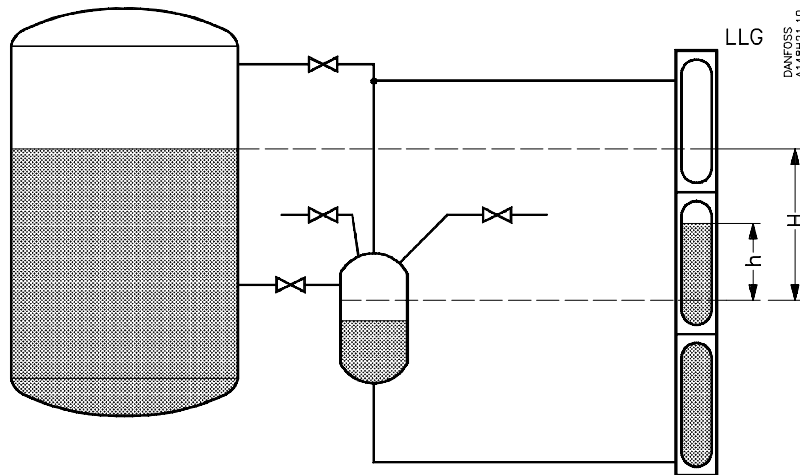
With safety system and welding nipples *

LIQUID LEVEL GLASSES - LLG F

With safety system, wilding nipples * and sight adapter

| Length | | LIQUID LEVEL GLASSES - LLG | | | LIQUID LEVEL GLASSES - LLG F | | | Weight | |
|---------|--------|----------------------------|------------|----------------|------------------------------|------------|----------------|--------|--------|
| Inches | (mm) | Type | Part No. | List Price | Type | Part No. | List Price | lbs | (kg) |
| 7 1/4" | (185) | LLG 185 | 2512+04910 | \$323 | LLG 185 F | 2512+07810 | \$536 | 9.3 | (4.2) |
| 13 1/4" | (335) | LLG 335 | 2512+05010 | \$443 | LLG 335 F | 2512+07910 | \$659 | 17.0 | (7.5) |
| 23 1/4" | (590) | LLG 590 | 2512+05110 | \$774 | LLG 590 F | 2512+08010 | \$1,145 | 29.0 | (3.2) |
| 29 1/4" | (740) | LLG 740 | 2512+05210 | \$945 | LLG 740 F | 2512+08110 | \$1,296 | 36.0 | (6.5) |
| 39 1/4" | (995) | LLG 995 | 2512+05310 | \$1,104 | LLG 995 F | 2512+08210 | \$1,537 | 50.0 | (22.5) |
| 45" | (1145) | LLG 1145 | 2512+05410 | \$1,320 | LLG 1145 F | 2512+08310 | \$1,670 | 57.0 | (25.7) |
| 61" | (1550) | LLG 1550 | 2512+05510 | \$1,919 | LLG 1550 F | 2512+08410 | \$2,315 | 74.0 | (33.5) |

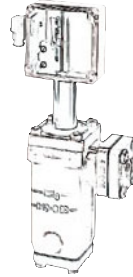
* The welding nipples extend 3.25" from the level glass and can easily be welded into a 1/2" socket-weld connection. If shut-off valves are needed, please see 1/2" socket-weld shut-off valves type SVA



AKS 38

Liquid Level Float Switch

| Type | Connections | Flanges | Part No. | List Price |
|--------|-------------|--------------|----------|--------------|
| AKS 38 | WN | 1" (DN 25) | 148H3204 | \$586 |
| AKS 38 | Socket Weld | 1" (DN 25) | 148H3206 | \$586 |
| AKS 38 | FPT | 3/4" (DN 20) | 148H3207 | \$586 |



Features

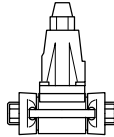
- Reliable SPDT micro switch
- Protection from high and low levels
- Operates liquid solenoid valve
- Transparent switch box cover for visual indication
- Switch box can be rotated to improve visibility

Flanges included with AKS-38 Float Switch
 Contact Danfoss for other connection types/sizes.

CVMD

Constant Pressure Valve

| Type | Connections | Part No. | List Price |
|------|-------------------|----------|--------------|
| CVMD | 1/2" Weld flanges | 027B1038 | \$238 |



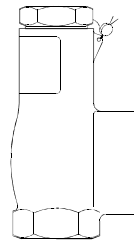
Features

- Regulating range: 0 to 102 psig
- Temperature range: -58°F to 248°F
- Flow coefficient: $C_v = 1.74$

Flanges included with CVMD valve
 Contact Danfoss for other connection types/sizes.

SFVL
Safety Relief Valves

| Type | Connections [Inlet x Outlet] | Pressure setting [psig] | Part No. | List Price |
|----------|------------------------------|-------------------------|----------|--------------|
| SFVL 803 | 1/2" FPT x 3/4" FPT | 150 | 148F8000 | \$148 |
| | | 175 | 148F8035 | \$148 |
| | | 225 | 148F8059 | \$148 |
| | | 250 | 148F8001 | \$148 |
| | | 300 | 148F8002 | \$148 |
| SFVL 813 | 1/2" FPT x 1" FPT | 150 | 148F8003 | \$151 |
| | | 175 | 148F8037 | \$151 |
| | | 225 | 148F8052 | \$151 |
| | | 250 | 148F8004 | \$151 |
| | | 300 | 148F8005 | \$151 |
| SFVL 804 | 3/4" FPT x 1" FPT | 150 | 148F8006 | \$203 |
| | | 175 | 148F8039 | \$203 |
| | | 225 | 148F8046 | \$203 |
| | | 250 | 148F8007 | \$203 |
| | | 300 | 148F8008 | \$203 |
| SFVL 814 | 3/4" FPT x 1-1/4" FPT | 150 | 148F8009 | \$208 |
| | | 175 | 148F8041 | \$208 |
| | | 225 | 148F8055 | \$208 |
| | | 250 | 148F8010 | \$208 |
| | | 300 | 148F8011 | \$208 |
| SFVL 805 | 1" FPT x 1-1/4" FPT | 150 | 148F8012 | \$320 |
| | | 175 | 148F8030 | \$320 |
| | | 225 | 148F8060 | \$320 |
| | | 250 | 148F8013 | \$320 |
| | | 300 | 148F8014 | \$320 |
| SFVL 815 | 1" FPT x 1-1/2" FPT | 150 | 148F8015 | \$328 |
| | | 175 | 148F8044 | \$328 |
| | | 225 | 148F8061 | \$328 |
| | | 250 | 148F8016 | \$328 |
| | | 300 | 148F8017 | \$328 |



SFVL safety relief valves are backpressure dependent and designed for protection of vessels and other components against excessive pressure. They are manufactured in accordance with the ASME Quality Control Procedures and stamped with the UV and NB symbols.

Pressure:

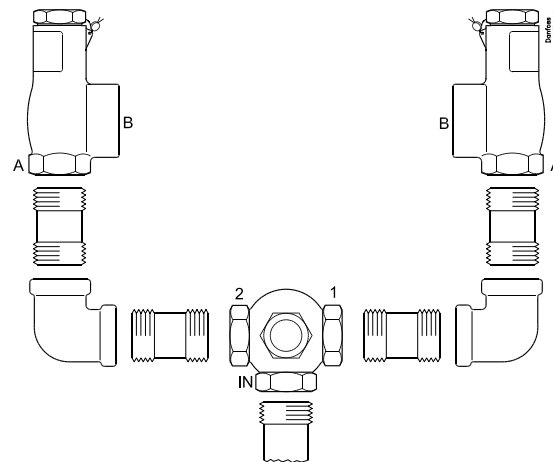
- Settings available from 75 to 400 psig
- Common pressures settings of 150, 250 and 300 psig are available from stock or with short lead-time; please contact Danfoss, Inc. for other pressure settings.
- Maximum working pressure of 500 psig

Temperature:

- -20°F to +275°F

Refrigerants:

- Suitable for R717 (ammonia NH₃), HFC and HCFC refrigerants.



DSVL
Dual Shut-off Manifolds

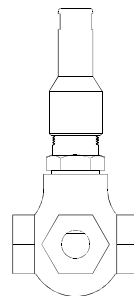
Dual Shut-off Manifolds

| Type | Connections | Part No. | List Price |
|----------|------------------------|----------|--------------|
| DSVL 843 | 1/2" x 1/2" x 1/2" FPT | 148F8018 | \$152 |
| DSVL 844 | 3/4" x 3/4" x 3/4" FPT | 148F8019 | \$160 |
| DSVL 845 | 1" x 1" x 1" FPT | 148F8020 | \$253 |

Accessory Kits for connecting SFVL and DSVL valves *

| Description | Part No. | List Price |
|------------------------------------------|----------|--------------|
| 1/2" Accessory fittings kit for DSVL 843 | 148F8032 | \$71 |
| 3/4" Accessory fittings kit for DSVL 844 | 148F8033 | \$71 |
| 1" Accessory fittings kit for DSVL 845 | 148F8034 | \$112 |

* Accessory kits include two 90° elbows and four nipples.



DSVL valves are specifically designed for a parallel installation of two safety relief valves. Only one safety relief valve can be shut off or isolated at any one time by front seating or back seating of the DSVL valve.

- Suitable for R717 (ammonia NH₃), HFC and HCFC refrigerant
- 400 psig rated
- -20°F to +300°F

EKC
Electronic Controllers

| Type | Description | Part No. | List Price |
|----------|-----------------------------------------------------------------------|----------|--------------|
| EKC 315A | Evaporator Controller (superheat) | 084B7086 | 929 |
| EKC 331 | Compressor or condenser capacity controller | 084B7104 | 693 |
| EKC 347 | Electronic Liquid Level Control. (1) | 084B7067 | \$782 |
| EKC 361 | Electronic Media Temperature Controller for stand alone control | 084B7060 | \$707 |
| EKC 366 | Interface Module that allows communication with customer supplied PLC | 084B7076 | \$353 |

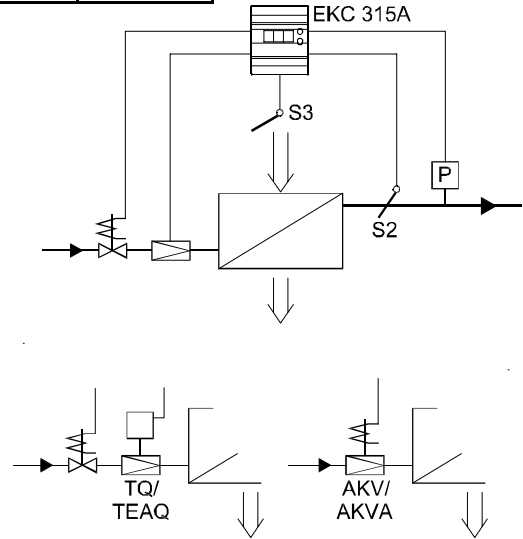
EKC 315

Application

The controller and valve can be used where there are requirements for accurate control of superheat and temperature in connection with refrigeration.

Functions

- Regulation of superheat
- Temperature control
- MOP function
- ON/OFF input for start/stop of regulation
- Input signal that can displace the superheat reference or the temperature reference
- Alarm if the set alarm limits are exceeded
- Relay output for solenoid valve
- PID regulation
- Output signal following the temperature showing in the display



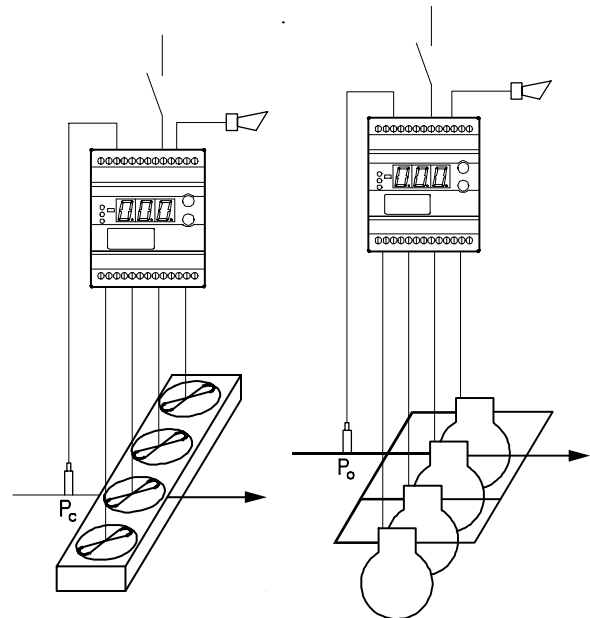
EKC 331

Application

The controller is used for capacity regulation of compressors or condensers in small refrigerating systems.

Functions

- Regulation
- Regulation with up to four relay outputs can be carried out. Regulation takes place with a set reference which is compared to a signal from a pressure transmitter.
- Relay module
- It is possible to use the controller as relay module, so that the relays are cut in or out by means of an external voltage signal.
- Alarm function
- A relay becomes activated when the set alarm limits are exceeded.
- Digital input
- The digital input can be used for:
- night operation where the suction pressure is raised
 - heat recovery where the condensing pressure is raised
 - external start/stop of the regulation.



EKC 347

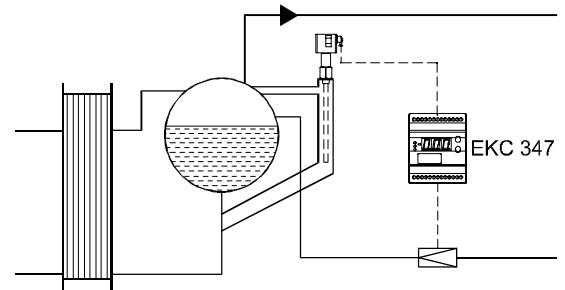
Application

The controller is used for regulation of the refrigerant level in:

- Pump reservoirs
- Separators
- Intermediate coolers
- Economizers
- Condensers
- Receivers

Functions

- Liquid level control
- Alarm if the set alarm limits are exceeded
- Relay outputs for upper and lower level limits and for alarm level
- Analog input signal which can displace the reference



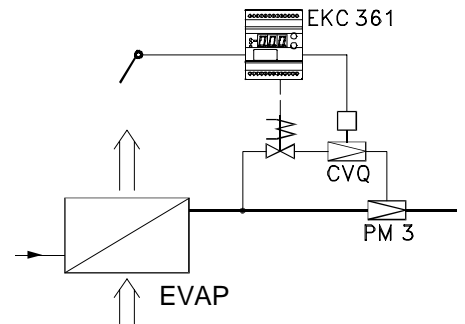
EKC 361

Application

The controller and valve can be used where there are stringent requirements to accurate temperature control in connection with refrigeration.

Functions

- Modulating temperature control
- ON/OFF input for start/stop of regulation
- Alarm if the set alarm limits are exceeded
- Relay output for fan
- Relay output for solenoid valves
- Input signal that can displace the temperature reference
- Output signal that follows the temperature showing on the display



EKC 366

Application

The controller is used for regulating a valve in a refrigerating system.

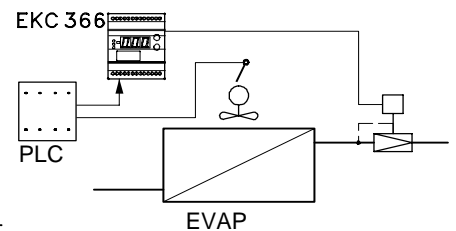
Function

The valve constantly receives feedback of the pressure in the evaporator. Whatever the variations in the suction pressure from the compressor, this feedback will produce the result that the evaporating pressure is kept constant.

In conjunction with the controller, an electronic constant-pressure valve is thus obtained.

Inserted between the controller and the actuator is a so-called inner regulating loop. This loop will - via an NTC resistance - constantly control the temperature in the actuator.

In an application where a PLC or similar device is used for regulating a media temperature, the regulating system will in this way be supplied with an outer regulating loop - which will result in great regulating accuracy.



TERMS AND CONDITIONS OF SALE

1. **Acceptance of Orders.** All sales made by H.A. Phillips & Co. ("Seller") of its products ("Products") are contingent upon the Buyer's acceptance of these Terms and Conditions of Sale ("Terms"). All orders placed by Buyer are subject to acceptance by an authorized representative of Seller at Seller's principal offices in Illinois. Any terms and conditions contained in Buyer's purchase order which are inconsistent with, or in addition to, these Terms, shall not be binding upon Seller unless, and until, Seller agrees to any such terms and conditions, in writing, signed by an authorized representative of Seller. These Terms cannot be modified or waived except by written agreement executed by an authorized representative of Seller at Seller's principal offices in Illinois.
2. **Prices.** Prices stated in Seller's price list are subject to change without notice. Prices listed in Seller's quotations or acknowledgements, or which are quoted verbally by Seller, shall remain firm for sixty (60) days unless Seller notifies Buyer to the contrary.
3. **Payment Terms.** Provided that Buyer has established a credit account with Seller, then payment terms for all Products are net cash (U.S. Dollars) thirty (30) days from date of invoice; otherwise payment is due upon delivery. These payment terms are independent of, and are not contingent upon, the time and manner in which Buyer receives payment from any of its customers. A finance charge of 1.5% per month (annual percentage rate of 18%) will be charged on all past due amounts. In the event suit or other proceeding is brought by Seller for the recovery of the purchase price, or any unpaid portion thereof, or for any breach of any of these Terms, Buyer shall pay to Seller, in addition to any damages provided by law, all collection or enforcement costs incurred by Seller, including reasonable attorney fees, and Seller shall be entitled to have such costs and fees included as part of any judgment obtained by Seller.
4. **Taxes.** Prices set forth in Seller's price list, or quoted by Seller, do not include applicable federal, state or local taxes or other charges. Buyer shall pay all such taxes and other charges, together with any penalties and interest, and file any returns with respect thereto, upon receipt of any invoice from Seller. In lieu of payment of any such taxes, Buyer shall provide Seller with an acceptable tax exemption certificate. Buyer agrees to indemnify Seller, and hold Seller harmless, and upon request, defend Seller, against any and all assessments, demands, causes of action, suits, or claims of any nature, whatsoever, including costs and attorney fees, incurred by Seller in connection with the payment or nonpayment of any applicable taxes, for the filing or failure to file any returns, which are required of Buyer by law or pursuant to this paragraph 4.
5. **Delivery and Shipment Dates.** Any dates and schedules for delivery of Products stated in Seller's quotation or acknowledgement represent Seller's best estimate made at the time of such quotation or acknowledgement, and are not binding upon Seller. Seller reserves the right to make deliveries in installments and to separately invoice Buyer for each installment. **Seller shall have no liability, whatsoever, to Buyer, Buyer's customers, or any third party for direct, liquidated, consequential, incidental or indirect damages, losses or expenses resulting from delays in shipment of any Products or installments of Products.**
6. **Freight.** All shipments are F.O.B., Seller's factory in Illinois. If Buyer specifies shipment by "Pre-paid Freight", freight charges plus 10% (but not less than \$3.00) will be added to Buyer's invoice.
7. **Security.** Seller shall have, and Buyer hereby grants to Seller, a security interest in all Products sold to Buyer until full and complete payment has been received by Seller from Buyer for the Products. Buyer agrees to do all acts necessary to permit Seller to perfect and maintain such security interest.
8. **Returns.** No returns of special or custom-made Products ordered by Buyer will be accepted by Seller. Seller will review Buyer's request to return standard Products for credit or repair. Prior to returning any standard Product, Buyer must obtain Return Material Authorization from Seller. A copy of Seller's Return Material Authorization Policy is available upon request.
9. **Indemnification.** Buyer shall indemnify and defend Seller, and hold Seller harmless, from and against any and all claims, demands, causes of action, loss, or damage, including reasonable attorney fees, arising from or relating to the improper use or installation of any Product or any acts or omissions of Buyer.
10. **Limitation of Liability.** **IN NO EVENT SHALL SELLER HAVE ANY LIABILITY, WHATSOEVER, TO BUYER, BUYER'S CUSTOMERS, OR ANY THIRD PARTY FOR SPECIAL, LIQUIDATED, CONSEQUENTIAL, INCIDENTAL OR INDIRECT LOSS OR DAMAGE OF ANY KIND, ARISING OUT OF, OR ALLEGED TO ARISE OUT OF, ANY PRODUCTS OR SELLER'S SALE THEREOF. SELLER'S LIABILITY FOR WARRANTY CLAIMS IS SOLELY AS SET FORTH IN SELLER'S LIMITED PRODUCT WARRANTY AS PROVIDED IN PARAGRAPH 11 OF THESE TERMS.**
11. **Warranty.** Seller warrants its Products in accordance with Seller's Limited Product Warranty, a copy of which Buyer acknowledges receipt with these Terms, and which is incorporated herein by reference. **SELLER DISCLAIMS THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES ARISING FROM COURSE OF PERFORMANCE, COURSE OF DEALING, OR USAGE OF TRADE. SELLER SHALL NOT BE LIABLE TO BUYER OR ANY OTHER PARTY UNDER THIS WARRANTY FOR DIRECT, SPECIAL, CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES OF ANY KIND.**
12. **Cancellation.** No order for Products may be cancelled by Buyer without the prior written consent of Seller. In the event Seller consents to cancellation of any order placed by Buyer, Buyer agrees to reimburse Seller for any expenses incurred in developing, engineering, or manufacturing any Products to Buyer's specifications and for any Products shipped to Buyer prior to Seller's receipt of any notice of cancellation.
13. **Choice of Law.** All agreements between Seller and Buyer with respect to any Products, or the performance thereof, shall be construed in accordance with, and governed by, the laws of the State of Illinois.
14. **Jurisdiction.** Seller and Buyer hereby acknowledge and agree that this sale is entered into in Kane County, Illinois, and hereby further agree to submit themselves to the jurisdiction of the courts of Kane County, Illinois, with respect to any claim, controversy or dispute, whether in law or in equity, which arises from, or is alleged to arise from, or is in any way related to, this sale.
15. **Waiver.** Waiver by Seller of Buyer's breach of any of these Terms shall not be construed as a waiver of any other breach.
16. **Severability.** In the event any provision of these Terms shall be declared invalid or unenforceable by a court of competent jurisdiction, the remaining provisions of these Terms shall remain in full force and effect.