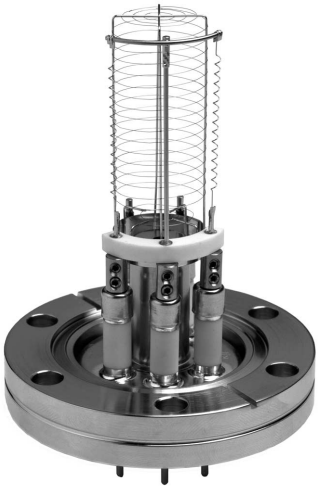
Bayard-Alpert Ionization Gauges

SRS nude and glass tubulated ionization gauges



Nude-UHV Gauge

Glass Tubulated Gauge

Nude Gauge

SRS Ion Gauges

To select the appropriate gauge, follow the steps below using the Model Numbers / Selection & Cross-Reference Table (next page).

1) Select the type of gauge: glass tubulated, nude or nude-UHV

2) Select filament type: ThO_2/Ir or tungsten, single or dual

3) Note the SRS part number

Once you have selected a gauge, choose the appropriate cable using the pin connector diagram.

SRS offers three types of gauges for the IGC100 Ion Gauge Controller: glass tubulated, nude, and nude-UHV Bayard-Alpert ionization gauges. We also supply convection-enhanced Pirani gauges.

Single and Dual Filaments

All single, hair-pin shaped filaments used in SRS gauges are spring tensioned to eliminate filament sag. This allows the user to mount the gauge in any orientation. Dual-filament assemblies provide security against filament burnout.

NIST Traceable Calibration

SRS offers NIST traceable calibration on all of the gauges we sell. Calibration data is stored on a memory card, and is used in conjunction with the IGC100 Ion Gauge Controller. We offer a 6 % full-range calibration, and a high-precision, 3 % calibration.

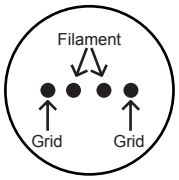


Figure 1.
Glass-Tubulated Gauge
Single ThO_2/Ir Filament
IGC100 Cable: **O100C1**

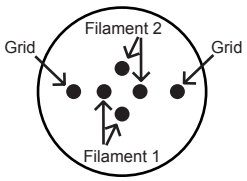


Figure 2.
Glass-Tubulated Gauge
Dual-Tungsten Filaments
IGC100 Cable: **O100C2**

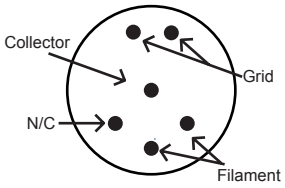


Figure 3.
Nude Gauge
Single ThO_2/Ir Filament
Bi-Filar Helical Anode Grid
IGC100 Cable: **O100C3**

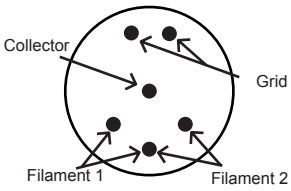


Figure 4.
Nude Gauge
Dual ThO_2/Ir or W Filament
Closed-End Anode Grid Cage
IGC100 Cable: **O100C3**

Bayard-Alpert Gauge Model Numbers / Selection and Cross-Reference Table

Type	Filament	Connection	Pin config.	SRS part #	Granville-Phillips	ETI	Duniway Stockroom	Kurt J. Lesker	Varian
Glass-tubulated	ThO_2/Ir (single)	Kovar (0.75" dia. tube)	Fig. 1	**GR-075K**	274003	4336K	I-075-K	G075K	K2471305
Glass-tubulated	ThO_2/Ir (single)	Pyrex (0.75" dia. tube)	Fig. 1	**GR-075P**	274002	4336P	I-075-P	G075P	K2471304
Glass-tubulated	ThO_2/Ir (single)	2.75" CF (1" dia. side tube)	Fig. 1	**GR-100F**	274008	4336F/1	I-CFF-275	G100F	K2471303
Glass-tubulated	tungsten (dual)	2.75" CF (1" dia. side tube)	Fig. 2	**GW-100F**	274018	4336TF/1	T-CFF-275	G100TF	K7360307
Nude	ThO_2/Ir (single)	2.75" CF (bi-filar helix)	Fig. 3	**NR-F**	274028	8140	I-NUDE-BAC	G8140	L5150-302
Nude UHV	ThO_2/Ir (dual)	2.75" CF (closed-end cage)	Fig. 4	**NR-F-UHV**	274023	8130	I-NUDE-F	G8130	971-5007
Nude UHV	tungsten (dual)	2.75" CF (closed-end cage)	Fig. 4	**NW-F-UHV**	274022	8130T	T-NUDE-F	G8130T	971-5008

Bayard-Alpert Gauge Specifications

	Glass-Tubulated	Nude	Nude-UHV
Physical			
Connection	Side tube or 2.75" CF flange	2.75" CF flange	2.75" CF flange
Side tube diameter	1"	N/A	N/A
Envelope	Nonex 7720 glass, 2.25" dia. × 5.25" long	Nude	Nude
Mounting position	Any, vertical preferred (*1)	Any	Any
Collector	Tungsten, 0.05" dia.	Tungsten, 0.05" dia.	Tungsten, 0.05" dia.
Filament	Single ThO_2/Ir (*2) or dual tungsten	Single ThO_2/Ir (*2), replaceable	Dual ThO_2/Ir or dual tungsten
Grid	Tungsten, bi-filar helix configuration	Tungsten, bi-filar helix configuration	Tantalum and Pt/Moly support, closed-end "squirrel"cage
Overall length (max.)	6.0"	4.13"	4.13"
Insertion length (max.)	N/A	3.30"	3.00"
Operating			
Operating pressure	2×10^{-10} to 1×10^{-3} Torr	4×10^{-10} to 1×10^{-3} Torr	2×10^{-11} to 1×10^{-3} Torr
Sensitivity for N_2, (nom.)	10/Torr	10/Torr	25/Torr
X-Ray limit	2×10^{-10} Torr	4×10^{-10} Torr	2×10^{-11} Torr
Degas power (@500 V)	70 W (nom.), 100 W (max.)	70 W (nom.), 100 W (max.)	40 W (max.)
Resistance heated degas	6.3 to 7.5 V @ 10 A	6.3 to 7.5 V @ 10 A	N/A
Bakeout temperature	250 °C	450 °C	450 °C
Electrical (*3)			
Anode grid bias voltage	180 VDC	180 VDC	180 VDC
Collector bias voltage	0 VDC	0 VDC	0 VDC
Filament bias voltage	30 VDC	30 VDC	30 VDC
Filament supply current	4 to 6 A	4 to 6 A	4 to 6 A
Filament supply voltage	3 to 5 VDC	3 to 5 VDC	3 to 5 VDC

**1: Vertical orientation provides strain relief for electrode structures, and increases long-term stability.*
**2: Single filaments are hair-pin shaped and spring loaded to eliminate sagging.*
**3: Direct current (DC) bias and supply voltages are recommended for all electrical connections.*

Ordering Information

GR-075K	Kovar, 0.75" side tube, single ThO_2/Ir
GR-075P	Pyrex, 0.75" side tube, single ThO_2/Ir
GR-100F	2.75" CF, 1" side tube, single ThO_2/Ir
GW-100F	2.75" CF, 1" side tube, dual-tungsten
Option 01	6 % NIST calibration (glass gauges)
Option 02	3 % NIST calibration (glass gauges)
NR-F	Nude, bi-filar, single ThO_2/Ir
NR-F-UHV	Nude, closed-cage grid, dual ThO_2/Ir
NW-F-UHV	Nude, closed-cage grid, dual tungsten
Option 01	6 % NIST cal w/ nipple (nude gauges)
Option 02	3 % NIST cal w/ nipple (nude gauges)

O100RFADW	Dual-tungsten replace. fil. for NW-F-UHV
O100RFASR	Single ThO_2/Ir replace. fil. for NR-F
O100RFADR	Dual ThO_2/Ir replace. fil. for NR-F-UHV
O100C1	10' cable for glass, single-filament gauges
O100C1/1	25' cable for glass, single-filament gauges
O100C2	10' cable for glass, dua-filament gauges
O100C2/1	25' cable for glass, dual-filament gauges
O100C3	10' cable for nude or glass gauges
O100C3/1	25' cable for nude or glass gauges
O100CA1	Adapter for Micro-Ion® gauge