

# Housings

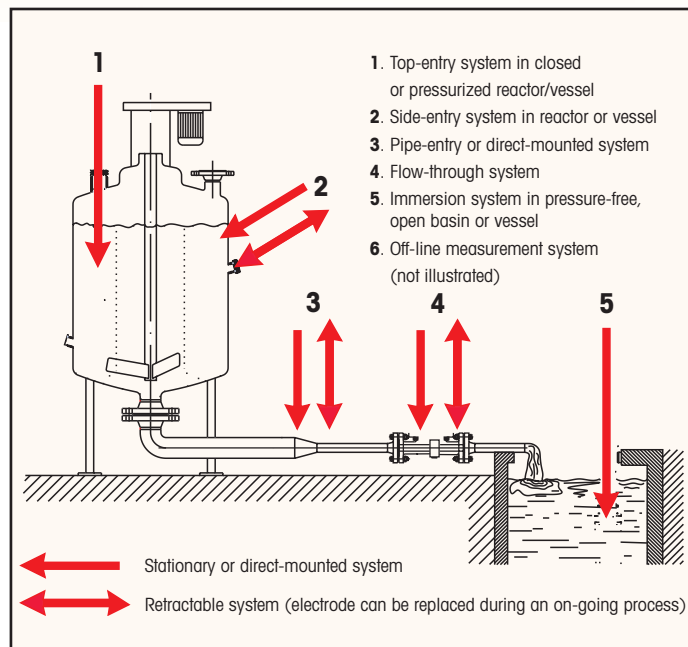
## Process Connection Hardware

Mettler-Toledo Ingold offers a comprehensive line of products to connect to all common process environments – open basins, pipes, closed tanks, chemical reactors, bioreactors, and fermentation vessels. Depending upon the application, each connection type can have specific requirements for strength, safety, cleanliness, optimized performance, corrosion resistance, insertion depth, or physical space. Process connection hardware ranges from simple drop-in immersion fittings to complex automated systems capable of cleaning and calibrating your measuring equipment. The choice is yours! Mettler-Toledo INGOLD and your local representatives have worked extensively with a wide variety of process environments and can assist you in selecting the best hardware for your application.

The primary considerations when selecting a housing are:

1. Stationary or Retractable Housing
2. Connection entry – top-entry, side-entry, etc. (Fig 1)
3. Connection style – Cap nut, threaded NPT, etc.
4. Diameter of connection hole (Bore Size)
5. Insertion Length (Housing Length H = in mm)
6. Wetted Parts Materials – stainless steel, PVC, etc.
7. Process Seal Material (O-rings/Gaskets)

This section has been organized according to the seven requirements listed above. To simplify selection, first decide if you prefer stationary, retractable, or flow through design and turn to the corresponding section that follows. A variety of different housings are available in each section to meet your specific entry-type, connection style, and other requirements.



Common Entry/Style	Threaded Cap Nut	Threaded NPT	ANSI Flange	Ladish (TriClamp®)	Tuchenhausen/Varivent®
Top Entry (1)	✓	✓	✓	✓	
Side Entry (2)	✓	✓		✓	✓
Pipe Entry (3)	✓	✓			
Flow Through (4)	✓	✓			
Immersion (5)					

Common Wetted Parts	Key	Common O-rings	Key
Stainless Steel 316L	SS 316L	EPDM FDA Listed	Ep
Stainless Steel 316L with Electro-polish	SS E-P	EPDM Peroxide Cured	Ep-pc
Stainless Steel 316L with Machined Surface	RAxx	Kalrez FDA Listed USP Class VI	Ka-FDA-USP VI
Hastelloy	HA-C22	Silicone FDA Listed USP Class VI	Si-FDA-USP VI
Titanium	Ti	Silicone Peroxide Cured	Si-pc
PVC	PVC	Teflon/Teflon Coated*	N/A
PVDF	PVDF	Viton	Vi
PTFE	PTFE		

\* As tested Teflon® materials failed to provide acceptable elastomeric sealing and are not recommended.

### Looking for a non-standard connection?

A growing number of projects co-locate redundant production facilities around the globe, occasionally standardizing on metric or other process connections not common to the North American market. Mettler-Toledo Ingold is an international company, working with clients world-wide to equip state-of-the-art processing facilities with liquid analytical systems.

If your project requires special process connections, we can help.

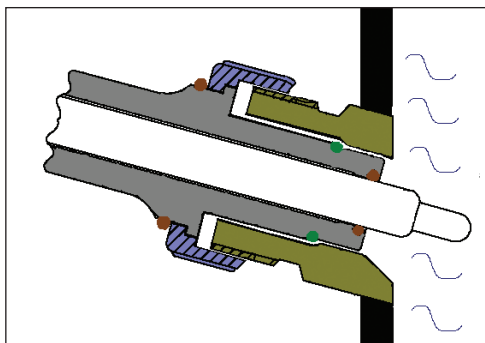
Call us at 1-800-352-8763 for more information.

## The INGOLD Socket and Safety Socket

Recognizing the need for a strong, sanitary, and safe process connection, INGOLD engineered a socket to exceed the requirements found in the most demanding process environments. The INGOLD Socket



quickly became a standard in the biotechnology and pharmaceutical industries. The original socket was enhanced in the late 1990's, by integrating a "stepped" inner bore with a revised thread design which provides an early warning signal if housing removal is attempted under unsafe conditions. When used with an appropriate housing, the INGOLD Safety Socket allows the housing o-ring to break its seal while the cap nut retains a safe thread engagement. Under pressure, the gap releases air or a small amount of medium, alerting the operator to an unsafe condition, and preventing the housing/sensor assembly from becoming a dangerous projectile (See diagram).



## INGOLD Housings

The hardware used to connect your analytical system to your process is now more important than ever and can actually improve your overall operating efficiency.

**Retractable housings**, first pioneered by Mettler-Toledo Ingold, have now evolved into highly-sophisticated components which are process-independent, making sensor maintenance possible at any time without interrupting your process. Pneumatically operated housings insert and retract sensors automatically and form the cornerstone of a fully autonomous analytical system, capable of unattended cleaning and calibration. With an automated system your highly-skilled maintenance staff is able to focus on mission-critical maintenance and repair projects rather than cleaning and calibrating sensors, raising the efficiency and productivity of your operation. For more information on automated maintenance systems, see page 12.

**Stationary housings** are widely used in all industries, providing a secure, durable, and safe way to position sensing devices in a process. Once connected, however, the stationary housing and sensor must be left in place until the process stops or flow is interrupted and the tank/pipe is drained.

### Retractable Housings

- **Secure**
- **Self-cleaning**
- **Process-independent**
- **Manual or automated**
- **Insertion lock without sensor**
- **For use in hazardous areas (ATEX, FM certificates)**

## TIP!

*Only a representative sample of INGOLD's extensive process connection products are included in this catalog. Please refer to the METTLER TOLEDO SpecBook and product literature for more information.*

### Don't see exactly what you need?

Mettler-Toledo Ingold has more than 50 years of experience engineering specialized components or altering existing products to meet specific project requirements. Whether your need is for process resistant metals, special finishes, or modified dimensions, challenge us — chances are we have already designed what you need.