



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



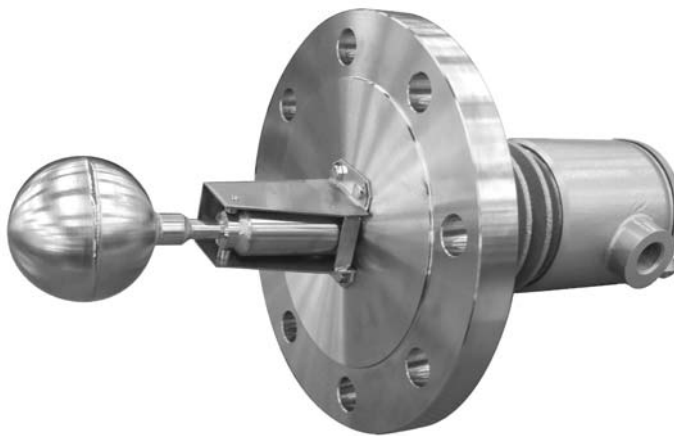
Solutions

Technical Information

CS5603/CS5613

Float Level Switch

High temperature and High pressure



Application

Float Level Switch CS5603/CS5613 is a float type compact level switch with explosion-proof feature. It is made of steel and is compatible with almost all types of liquids. Float Level Switch CS5603/CS5613 is especially suited for use with high temperature (max. 350°C), high pressure (max. 4.9MPa) and permits liquid level control in simple procedures.

Features and benefit

- Simple function
- Extremely compact design
- Safety operation
- Reliable mechanical contact
- Easy mounting
- High corrosion resistance (stainless steel)
- Automatic pump and valve control with Nivotester"FTW325"

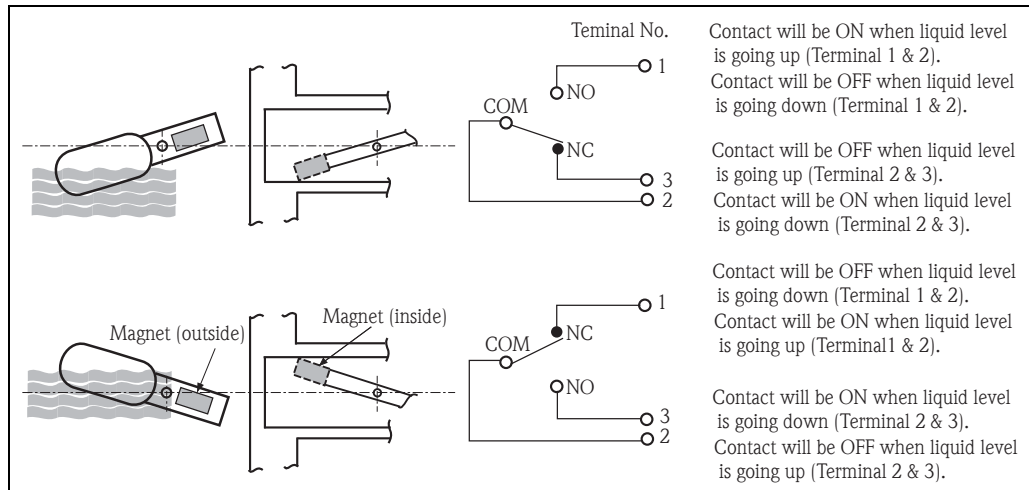
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Function and system design

Operating principle

Liquid level variation in a tank is detected with a float. Microswitch is activated with repulsive force produced between magnets attached to the float and the magnets arranged inside the housing. Operating signals are emitted as contact ON/OFF signals. Wiring is completed as shown the terminal No. 1 to 3 in the diagrams below. External output wiring is made so that it forms NO or NC circuit depending on utilization mode of the signals.

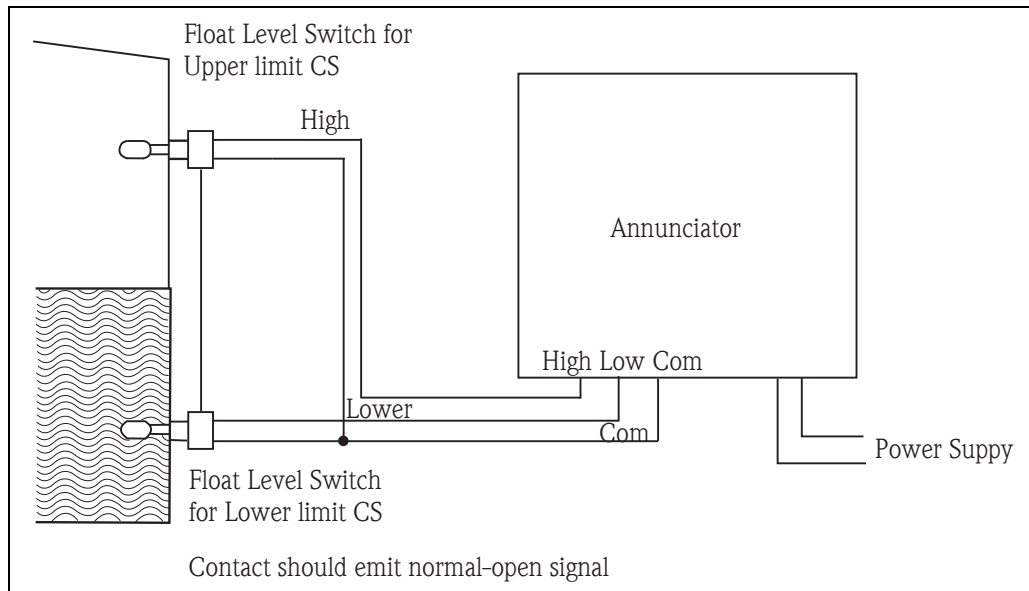


Application

- The best suited for high temperature and high pressure tank
- Wetted parts is high corrosion resistance (stainless steel)
- Reliable magnet repulsion performance
- Available Flame proof type

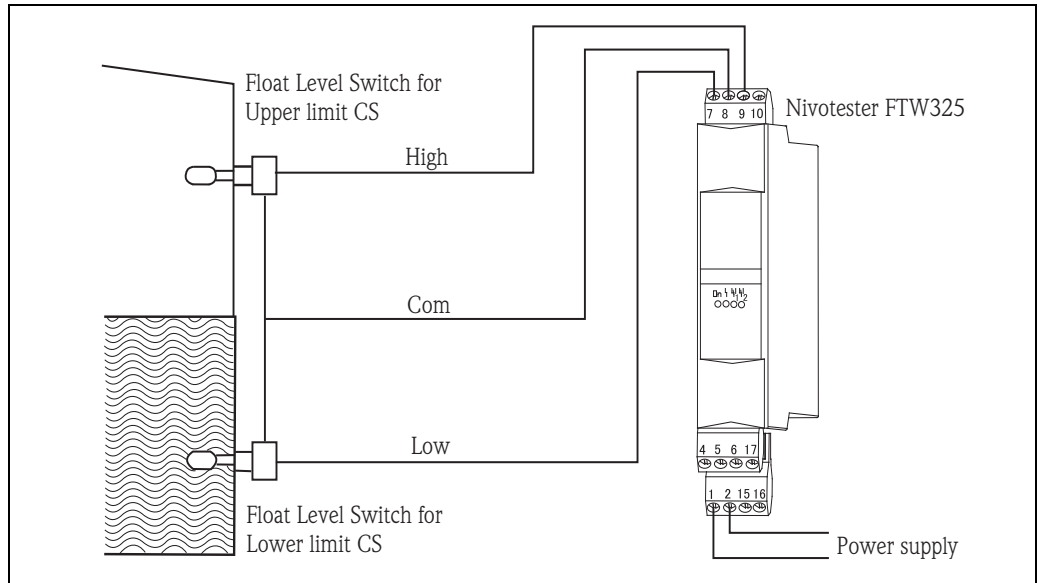
For alarming

When the float level switch is combined with annunciator, It is possible that a lamp comes on and sounds for alarming.



For controlling pump and valve

When the level float switch is combined with Nivotester FTW325, no control circuit is required. It is available that you only connect the contact output from Nivotester to pump and valve.
(See Nivotester FTW325 Operating Instruction)



Standard specification

Ambient temperature -10...+60°C (in case of liquid freezing, it is unmeasurable)

Measured liquid temperature -20...+350°C (in case of liquid freezing, it is unmeasurable)

Float shape Specifications depending on type of float.

| | Spherical | Cylindrical |
|---|----------------------------------|-------------------------------------|
| Level Accuracy (50 mm displacer) | ±5mm ($\rho = 1\text{g/cm}^3$) | ±8mm ($\rho = 0.8\text{g/cm}^3$) |
| Hysteresis | 10mm ($\rho = 1\text{g/cm}^3$) | ±16mm ($\rho = 0.8\text{g/cm}^3$) |
| Measured liquid specific density | $\geq 0.65\text{g/cm}^3$ | $\geq 0.45\text{g/cm}^3$ |
| Maximum allowable working pressure | 4.9MPa (at 200°C max.) | 2.35MPa (at 100°C max.) |
| Containment temperature | -20...350°C (at 4.41MPa max.) | -20...350°C (at 1.96MPa max.) |

Measured liquid specific density 0.45... 2.0g/cm³

Process Connection
 10K 80A RF, flange JIS B2220
 10K 100A RF, flange JIS B2220
 20K 80A RF, flange JIS B2220
 20K 100A RF, flange JIS B2220
 3" 150lbs RF, flange ANSI B16.5
 4" 150lbs RF, flange ANSI B16.5
 3" 300lbs RF, flange ANSI B16.5
 4" 300lbs RF, flange ANSI B16.5

Material
 Float (cylindrical, spherical) : SUS316
 Flange : SUS304, SUS316
 Body : SCS13, AC4CT6
 Cover : AC4A

Contact capacity
 AC250V 5A (resistance load)
 DC125V 0.3A (resistance load)

Contact configuration SPDT(microswitch)

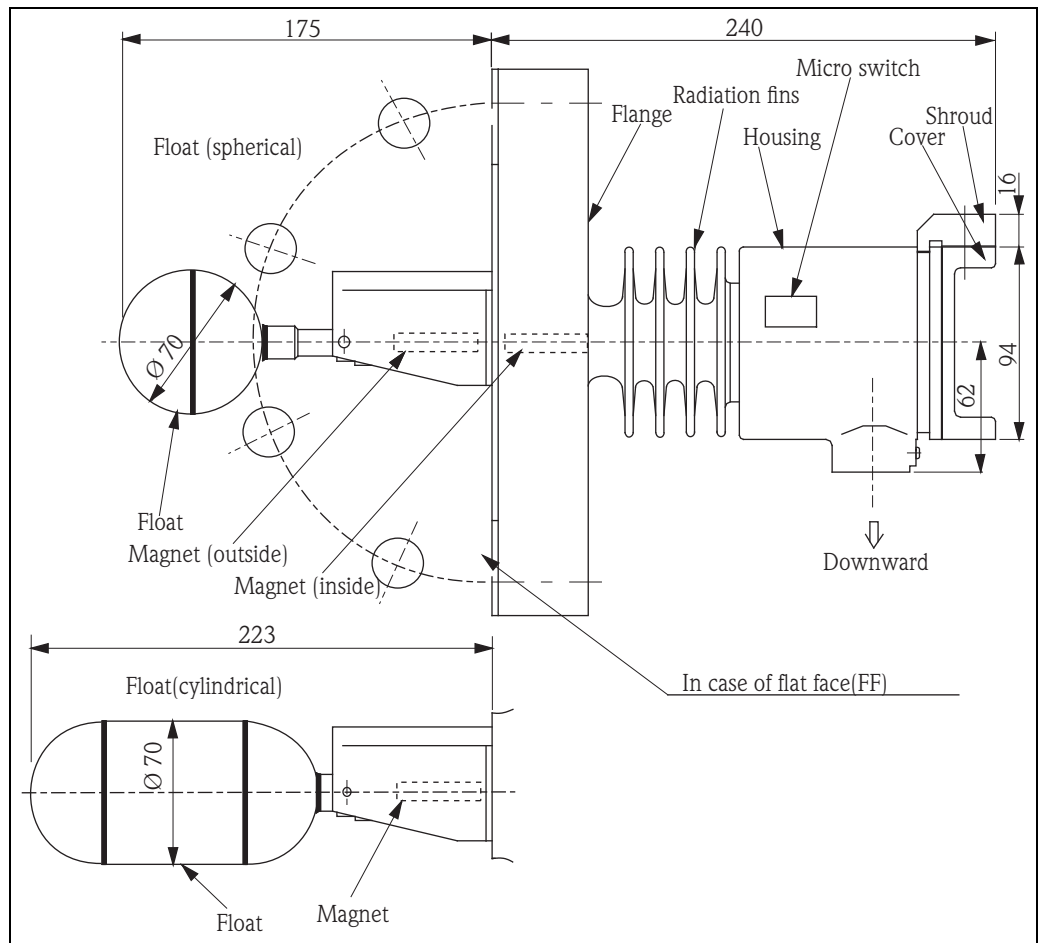
Cable entry PF(G)1/2

Weight Approx. 7.5kg (CS5603, 10K 80A RF, flange JIS B2220)

Paint colour Silver

Dimensions

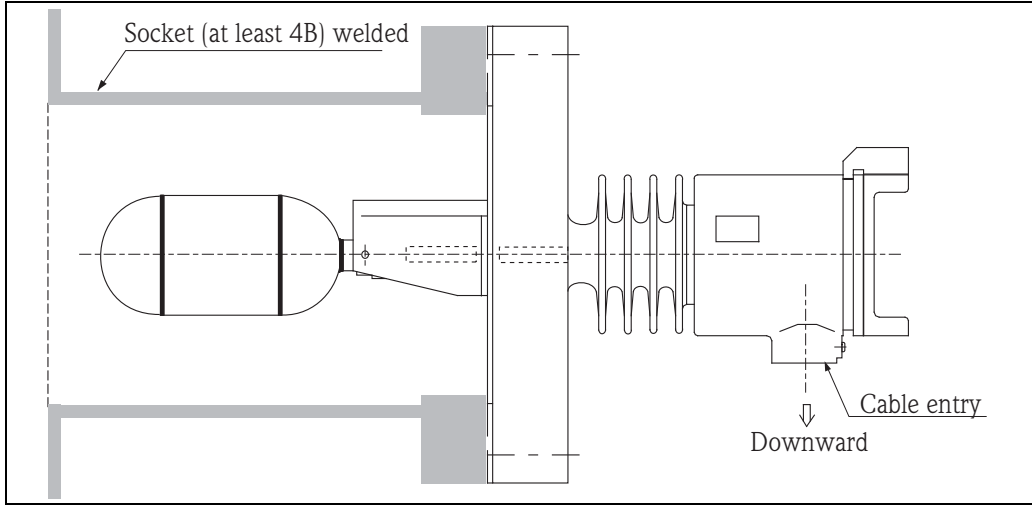
CS5603



Installation

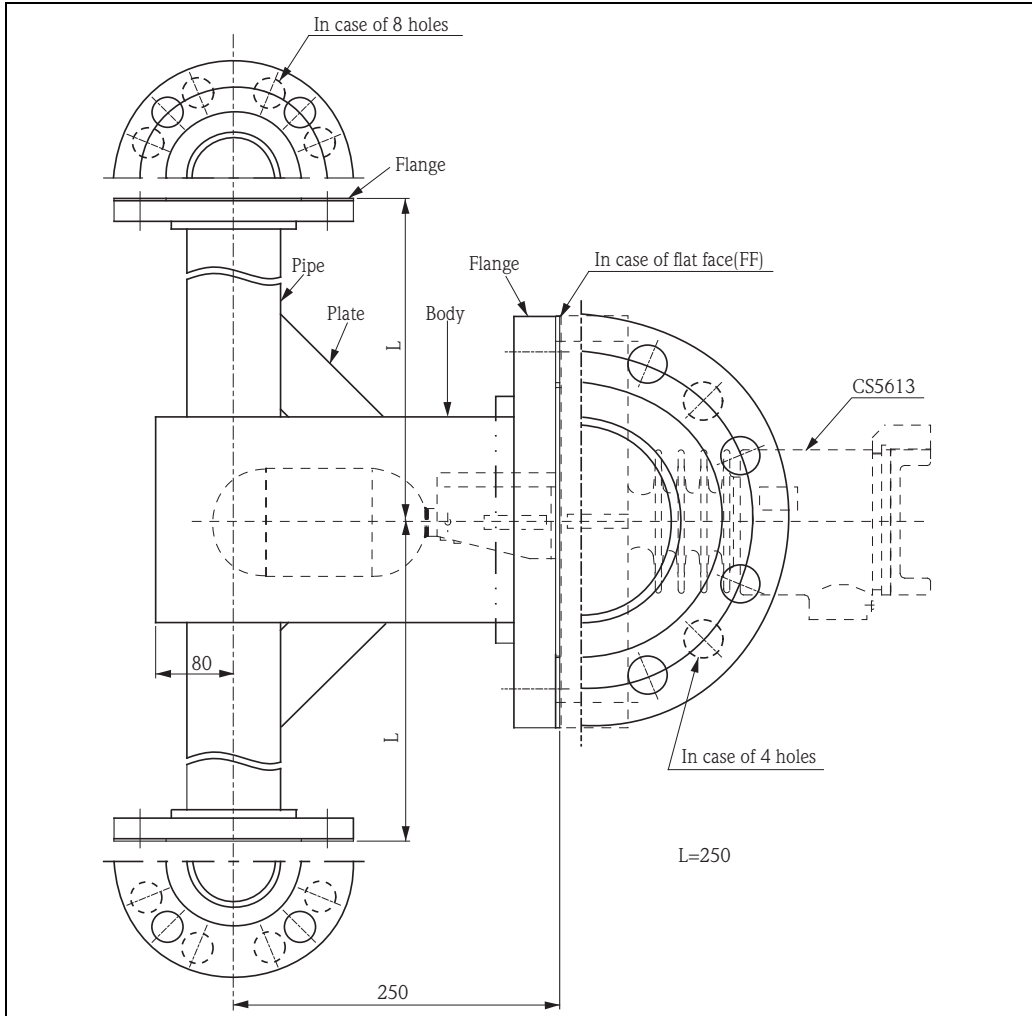
Flange connection type installation

The level float switch of flange connection must prepare a nozzle of at least 4B.



External chamber type installation CS5613

The pipe connection for the level float switch of external chamber type is flange connection.



Note!
The conduit connection must always be set downside.

Certification and approvals

| | |
|--------------------|--------------------------|
| Ex approval | TIIS TIIS d2G4 |
|--------------------|--------------------------|

| | |
|-------------------------|------|
| Protection class | IP65 |
|-------------------------|------|

Order Information

CS5603

| | | | |
|----------------|---|---|--|
| 010 | | Function: | |
| | 0 | Standard function | |
| | 1 | Non standard function | |
| 020 | | Process Connection: | |
| | 1 | 10K 80A RF, flange JIS B2220 | |
| | 2 | 20K 80A RF, flange JIS B2220 | |
| | 3 | 10K 100A RF, flange JIS B2220 | |
| | 4 | 20K 100A RF, flange JIS B2220 | |
| | 5 | 3" 150lbs RF, flange ANSI 16.5 | |
| | 6 | 3" 300lbs RF, flange ANSI 16.5 | |
| | 7 | 4" 150lbs RF, flange ANSI 16.5 | |
| | 8 | 4" 300lbs RF, flange ANSI 16.5 | |
| | 9 | Special version, TSP-no. to be spec. | |
| 030 | | Material Process Connection ; Float: | |
| | 4 | SUS304; SUS316,Spherical | |
| | 5 | SUS304; SUS316, Cylindrical | |
| | 6 | SUS316; SUS316, Spherical | |
| | 7 | SUS316; SUS316, cylindrical | |
| | 9 | Special version, TSP-no. to be spec. | |
| 040 | | Approval: | |
| | 2 | Flame proof d2G4 E ¹ , IP65 | |
| | 3 | Flame proof d2G4 EB ² , IP65 | |
| | 9 | Special version, TSP-no. to be spec. | |
| 050 | | External Chamber: | |
| | 0 | Not used | |
| | 9 | Special version, TSP-no. to be spec. | |
| 060 | | Cable entry: | |
| | 0 | PF(G)1/2 | |
| | 1 | PF (G)3/4 cable gland, TF16-11 | |
| | 2 | PF (G)3/4 cable gland, TF16-12 | |
| | 3 | PF (G)3/4 cable gland, TF16-9 | |
| | 4 | NPT1/2 | |
| | 9 | Special version, TSP-no. to be spec. | |
| 070 | | Colour | |
| | 0 | Silver | |
| | 9 | Special version, TSP-no. to be spec. | |
| CS5603- | | Order code | |

¹ TIIS d2G4 (E)

² TIIS d2G4 + cable gland (EB)

Standard

| Old | New |
|------------------|-------|
| PT male thread | R |
| PT female thread | Rc |
| PS | Rp |
| PF | PF(G) |
| | |

CS5613

| | | | | | | | |
|----------------|--|--|--|---|---|--|--|
| 010 | | | | Function: | | | |
| | | | | 0 | Standard function | | |
| | | | | 1 | Non standard function | | |
| 020 | | | | Switch Head Connection | | | |
| | | | | 3 | 10K 100A RF, flange JIS B2220 | | |
| | | | | 4 | 20K 100A RF, flange JIS B2220 | | |
| | | | | 7 | 4" 150lbs RF, flange ANSI 16.5 | | |
| | | | | 8 | 4" 300lbs RF, flange ANSI 16.5 | | |
| | | | | 9 | Special version, TSP-no.to be spec. | | |
| 030 | | | | Material Switch Head Connection ; Float: | | | |
| | | | | 4 | SUS304; SUS316, Spherical | | |
| | | | | 5 | SUS304; SUS316, Cylindrical | | |
| | | | | 6 | SUS316; SUS316, Spherical | | |
| | | | | 7 | SUS316; SUS316, Cylindrical | | |
| | | | | 9 | Special version, TSP-no. to be spec. | | |
| 040 | | | | Approval: | | | |
| | | | | 2 | Flame proof d2G4 E ¹ , IP65 | | |
| | | | | 3 | Flame proof d2G4 EB ² , IP65 | | |
| | | | | 9 | Special version, TSP-no. to be spec. | | |
| 050 | | | | External Chamber: | | | |
| | | | | A | STPG370, 10K 25A RF, SS400, flangeJIS B2220 | | |
| | | | | B | STPG370, 20K 25A RF, S25C, flangeJIS B2220 | | |
| | | | | C | STPG370, 1" 150lbs RF, SS400, flangeANSI B 16.5 | | |
| | | | | D | STPG370, 1" 300lbs RF, S25C, langeANSI B 16.5 | | |
| | | | | E | SUS304, 10K 25A RF, SUS304, flange JIS B2220 | | |
| | | | | F | SUS304, 20K 25A RF, SUS304, flange JIS B2220 | | |
| | | | | G | SUS304, 1" 150lbs RF, SUS304, flangeANSI B 16.5 | | |
| | | | | H | SUS304, 1" 300lbs RF, SUS304, flangeANSI B 16.5 | | |
| | | | | J | SUS316, 10K 25A RF, SUS316, flangeJIS B2220 | | |
| | | | | K | SUS316, 20K 25A RF, SUS316, flangeJIS B2220 | | |
| | | | | L | SUS316, 1" 150lbs RF, SUS316, flangeANSI B 16.5 | | |
| | | | | M | SUS316, 1" 300lbs RF, SUS316, flangeANSI B 16.5 | | |
| | | | | 9 | Special version, TSP-no. to be spec. | | |
| 060 | | | | Cable entry: | | | |
| | | | | 0 | PF(G)1/2 | | |
| | | | | 1 | PF (G)3/4 cable gland, TF16-11 | | |
| | | | | 2 | PF (G)3/4 cable gland, TF16-12 | | |
| | | | | 3 | PF (G)3/4 cable gland, TF16-9 | | |
| | | | | 4 | NPT1/2 | | |
| | | | | 9 | Special version, TSP-no. to be spec. | | |
| 070 | | | | Colour: | | | |
| | | | | 0 | Silver | | |
| | | | | 9 | Special version, TSP-no. to be spec. | | |
| CS5613- | | | | Order code | | | |

¹ TIIS d2G4 (E)

² TIIS d2G4 + cable gland (EB)

Standard

| Old | New |
|------------------|-------|
| PT male thread | R |
| PT female thread | Rc |
| PS | Rp |
| PF | PF(G) |
| | |

Documentation

Technical Information

TI 373F

Technical Information: Nivotester FTW325

Operating Instructions

BA 1015N

Operating Instructions: Float Level Switch CS5603/CS5613

KA199F

Compact Instructions: Nivotester FTW325

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