 TORUS		· Owner FLOW CONDITIONERS FC-111 / FC-121		Document No.	MEA-DS-002
				Revision / Date	A · September 29, 2026
				Issue purpose	Issued for Review
MEASUREMENT · FLOW CONDITIONERS FC-111 / FC-121					
Rev.	Date	Revision description	Prepared	Reviewed	Approved
A	2026-09-29	Issued for Review			

NOTES

1. This sheet defines the perforated-plate flow conditioners installed in the two meter tubes.
2. Values marked typical are budgetary. The vendor shall confirm them with its proposal and final data (HOLD H-15).
3. Units are US customary. Pressures are gauge unless stated as absolute; standard volumes are at 14.73 psia and 60 °F.
4. Operating cases C1 to C7 are defined in  GEN-DB-001, Basis of Design, Section 6.

GENERAL

Table 1-1: General Data

Item	Value	Item	Value
Tags	FC-111 (MR-110), FC-121 (MR-120)	Quantity	2 installed; spare gaskets only
Type	Perforated plate, AGA 9 installation-effects tested with the purchased meter model	Location	Between the U1 and U2 spools, 5D (47.75 in) upstream of the meter inlet face
Area classification	Class I, Division 2, Group D, T3 (API RP 500); electrical area classification drawing to confirm	Specification	 MEA-SPC-001

PROCESS DATA

Table 1-2: Process Data

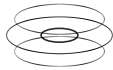
Item	Requirement
Flow range	10 to 120 MMSCFD per run; 5,012 to 68,973 acf/h
Pipe velocity	2.8 to 38.4 ft/s
Maximum ρV^2	5,232 lb/(ft-s ²) at C5
Operating pressure / temperature	887 to 1,137 psig / 44 to 119 °F
Design pressure / temperature	1,440 psig / -20 to 150 °F
Pressure drop	Loss coefficient about 2.0 on the pipe velocity head; 1.13 psi at C5, 0.55 psi at C2 ( MEA-CAL-001), typical, vendor to confirm (HOLD H-15)

CONSTRUCTION

Table 1-3: Construction

Item	Requirement
Size / rating	NPS 10, for installation between Class 600 RF flanges
Pipe ID match	9.562 in; conditioner bore within 1 % of the pipe ID
Thickness	About 0.13D (1.25 in), typical, vendor to confirm (HOLD H-15)
Material	316 SS or duplex stainless steel



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Item	Requirement		
Centering	Integral tab or ring locating on the flange bolts, with an anti-rotation feature		
Gaskets	Spiral-wound 316 SS / graphite with inner and outer rings, Class 600; inner ring shall not protrude into the bore		
Marking	Tag, flow arrow, serial number, size and class on the handle or tab		

TESTING AND DOCUMENTATION

Table 1-4: Testing and Documentation

Item	Requirement
Installation-effects evidence	AGA 9 perturbation tests: single elbow, two elbows out of plane, header tee and half-closed valve; same meter model and path configuration; 10D total upstream with the plate at 5D
Calibration	Calibrated in place in the meter tube assembly ( MEA-DS-010)
Documents	Drawing, hole pattern, material certificates, test report

OPEN ITEMS

Table 1-5: Open Items

HOLD	Item	Responsible party
H-15	Plate thickness, loss coefficient and test report	Vendor