RFEA NO	REV	DESCRIPTION	REV BY	DATE	APPR BY	DATE
0555	A	TGIM Dim. Change, added certification info.; reformatted	dma	09/26/00	DCS	09/26/00
0636,0695	B	Added ATEX certification details, other minor corrections	dcs	09/18/02	DCS	09/18/02
0812	C	Added pressure spec, SS type, IP65, Chng Temp Repeat	SRL	09/18/03	DCS	9/18/03
0868	D	Changed operating temperature range, probe length	dcs	7/16/04		

MODEL 6290 LTD TANK GAUGING SYSTEM SPECIFICATIONS

SYSTEM

- Industrial PC based tank gauging system for level, temperature, and density
- Media: LNG, Propane, Butane, Ethylene, Various Cryogenic Liquids
- Measurement Specifications

	Level	Temperature	Density
Range of Measurement	45 Meters*	-200 to 0°C	400 to 600 KG/M3
Resolution	0.001M	0.01°C	0.01 KG/M3
Repeatability	±0.001M	±.05°C	0.1% of Range
Accuracy	±0.002M	±0.1°C	0.1% of Range, ±0.5 KG/M3

  *Level range in excess of 45 Meters is available as an option
- Programmable profile data collection of temperature and density, 200 points maximum

TANK TOP MECHANICAL UNIT

- Anodized aluminum mechanical housing (118 x 74 x 40 cm), 234 kg
- Anodized aluminum probe housing with viewing window, 5", 150 lb, RF flange
- Cast aluminum buna lined pinch valve for tank isolation for service, 5" flange (52 kg)
- Anodized aluminum transition piece (5", 150 lb, RF flange to customer specified size)
- Stainless steel hollow helical drive cable (AISI type 321), contains all sensor wires.
- Spring motor driven helical cable take-up reel
- Magnetic switch on take-up reel for positive LTD probe movement detection
- Sealed, oil-filled gear drive assembly
- Intrinsically safe, certified to ATEX standards as follows:

  Ex II 1 G EEx ia IIC T4 (-20°C<Ta>+50°C)
- Maximum operating pressure: 0.25 bar, test pressure = 150% of operating pressure

MULTISENSOR PROBE ASSEMBLY

- Stainless steel probe (AISI type 316) (57.15 x 429 mm), 4 kg
- Solid-state level sensors for liquid/vapor interface detection
- Calibrated Platinum RTD for temperature measurement
- Oscillating spool densitometer for density measurement
- Hermetically-sealed bottom reference switch for zero level reference
- Safety certification included in mechanical unit certification

SCIENTIFIC INSTRUMENTS INC.
West Palm Beach
Florida 33407

ISO 9001 CERTIFIED

Material	Finish	Scale	Dwn: dma	10/29/99
			Appr: DCS	10/29/99

Tolerance	Title				
	Model 6290 LTD Tank Gauging System Specifications				
	FSCM NO.	SIZE	Dwg No	Rev	Sheet
	53547	A	020-111	D	1 of 3

CONTROL UNIT

- Microprocessor-based 386SX, PC/104 format
- Access point for handheld PC system control
- Explosion-proof stepping motor for driving the probe assembly
- Host DCS Communications: two (2) RS485 links standard, MODBUS format
- User Communications Link: RS485, SI protocol
- Zener safety barriers for all signal wires into mechanical unit (zone 0)
- Operating temperature: -35 to +50°C, ATEX certification temperature ranges specified below
- Gland entries into flameproof box: 1xM32, M32/1" NPT Brass adapter installed
- Power requirements: 100-240 VAC (±10%), 50-60 Hz (±5%), 50 watts
- Sealed in flameproof box, ATEX certified as follows:

   II 2 G EEx d IIB T6 (-20℃<Ta>+30℃)
- With I.S. barrier option, ATEX certification is：

   II 2 G EEx d IIB T6 (-20℃<Ta>+50℃)
- Environmental protection: NEMA IP65

TANK GAUGE INTERFACE MODULE

- Rail mounted field wiring termination card block
- Provides plug-in access for hand-held configuration unit on all communication lines
- Connection point for modem communications for remote diagnostic analysis
- Remote power control switch for tank mounted control unit
- Dimensions: 129 x 70 x 220 mm
- Mounting: standard DIN rail mount, optional 19" rack mount, 6U high
- Operating temperature: 0 to 40 degrees Celsius
- Maximum humidity: 90% at 40℃
- Power requirements: 24 VDC (±10%), 10 watts

HAND-HELD PC

- Hand-held 286 PC for system configuration and diagnostics
- Display: 16 rows x 24 columns (192 x 128 pixel), Supertwist Nematic LCD
- Plug-in capability either in control room or on the tank top
- Communication link is RS485
- Only one unit is required per site for multi-tank systems
- Case construction: Durable General Electric Cycolac® ABS
- Size (210 x 104 x 30 mm), 482 gm
- Powered from system equipment when plugged in

USER INTERFACE UNIT (OPTIONAL)

- PC based operator interface, independent of Host DCS
- PC may be standard desktop unit or industrial rack-mount
- Optional relay alarm outputs

SHIPPING INFORMATION

- Mechanical unit (including probe enclosure, control unit, legs, and hardware)
  (Net weight 218 kg, gross weight 273 kg, outside dimensions 130 x 87 x 122 cm)
- Tank Interface (including pinch valve and transition piece)
  (Net weight 87 kg, gross weight 109 kg, outside dimensions 79 x 72 x 97 cm)
- Electronics (including TGIM, tool kit, manuals, and spare parts)
  (Typical: Net weight 21 kg, gross weight 44 kg, outside dimensions 97 x 56 x 54 cm)
- Standard packaging: Wooden crating (plywood and framing) suitable for air transport or sea container. Packaging is designed for inside storage, but weatherproofing is suitable for temporary outside storage (covered area is recommended).

FIELD WIRING

- Specified on drawing 050-235 (typical connection is a single 6-pair shielded cable)
- Maximum distance from control room to tank top: 1200 meters standard
  (Longer distances can be accommodated by using RS485 repeaters.)

SYSTEM CONFIGURATION AND DIAGNOSTIC TOOL KIT

(One unit required per site)

- Hand-held PC (Specified above)
- Stand-alone modem for diagnostics
- Sensor replacement card
- Miscellaneous small tools
- Miscellaneous spare hardware
- Packaging: Structural resin foam-padded carrying case