



US Hybrid



Integrated Generator Control Unit “GCU100”

PRODUCT OVERVIEW:

GCU100 is a permanent magnet generator/motor designed for medium duty electric and hybrid vehicles and mobile generator applications. High torque and power density with excellent energy efficiency. It can operate in either torque or speed control mode with full control of DC current, power and operating voltage. The system offers extensive J1939 CAN compliance and RS232 diagnostics. GCU100 has been designed for direct engine mounting with SAEII, bell housing compliance. It can regulate either torque or the DC voltage, current or power via CAN/J1939. The unique design and control allow wide dynamic speed operation. The motor is offered for both medium voltage of 250-450V_{DC} or high voltage of 450-700V_{DC}.

FEATURES:

- Input voltage: 250 - 450V_{DC} or 450 - 700V_{DC}
- High Torque/power Density,
- Efficiency: 96% Generator / Motor, 98% Controller.
- CAN command, control and diagnostics.
- Output voltage can be regulated via CAN/Analog command.
- Vector controlled Torque or Speed Command.
- 4-Quadrant Operation, Motoring and Generation Capability
- Dual CAN bus, J1939 compatible
- Short Circuit, OC, O/U V and OT protection.
- Configuration management via CAN and RS232 interface.



APPLICATIONS:

Hybrid system APU for class 4-6 commercial vehicles, Medium duty off-road applications and alt-fuel stationary power.

MODEL NUMBER:

GCU100

Input Voltage
M: 250-450V_{DC}
H: 450-700V_{DC}

Rsvd

Motor Type	Permanent Magnet Motor
Torque	400 Nm
Power	80kW continuous
Speed	3000 RPM max
Weight (Generator) Weight (Controller)	65 kg 19kg
Input Voltage	M: 250-450 Vdc; H: 450-700 Vdc
Cooling	-40 °C to 65°C (50/50 WEG)
Efficiency (Generator) Efficiency (Controller)	96% 97%
Isolation resistance	> 2 MΩ at 700V _{DC}
Environment	IP65 rated (IP-67 optional)
Mounting	SAE-II Bell Housing
Shaft Interface	SAE / ANSI (Custom-Optional)

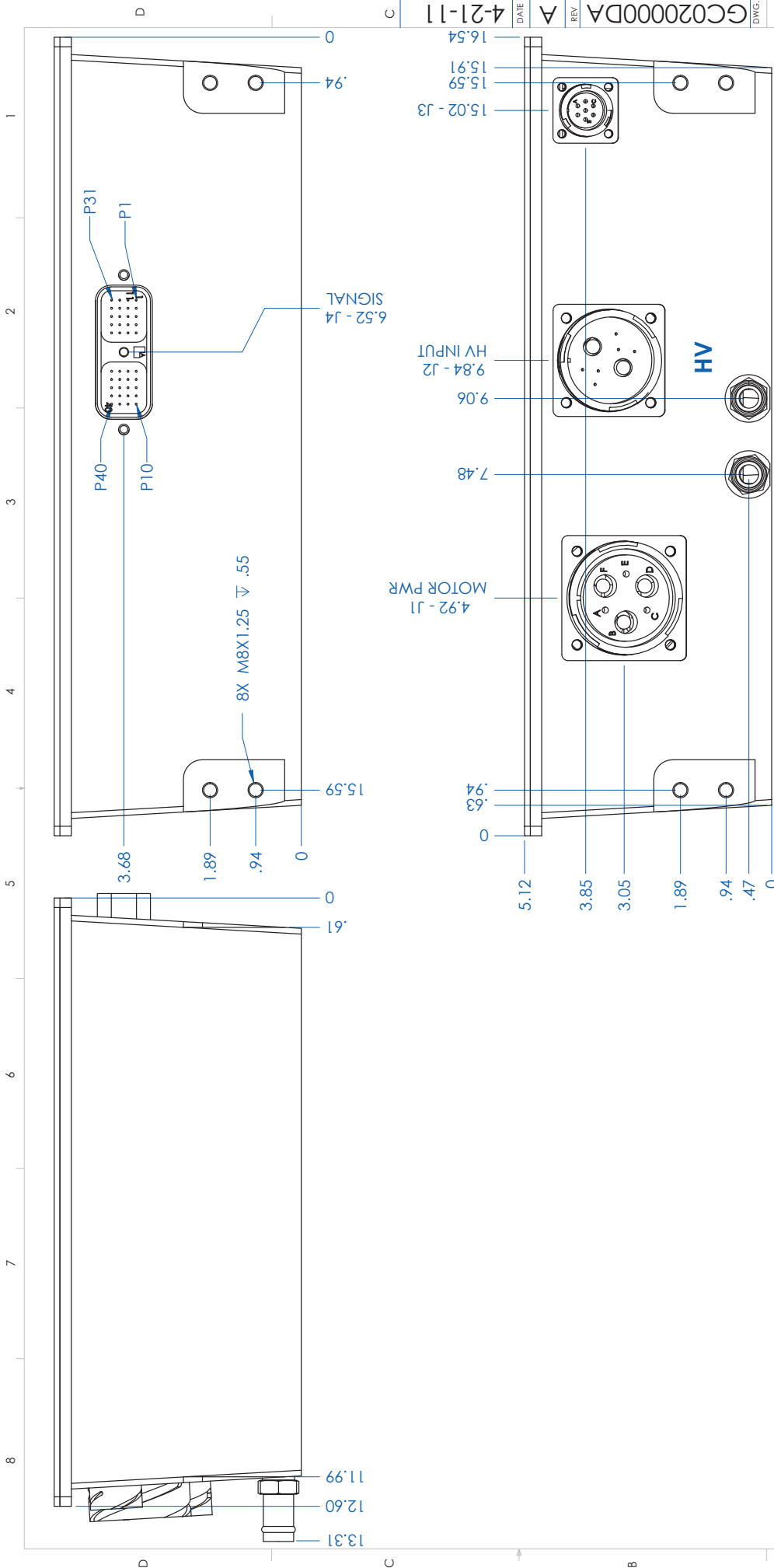
DATA SHEET REV: 130302, Specifications subject to change.

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Integrated Solutions for Clean Mobility & Energy Conservation

DATA SHEET REV: 1302, Specifications subject to change.

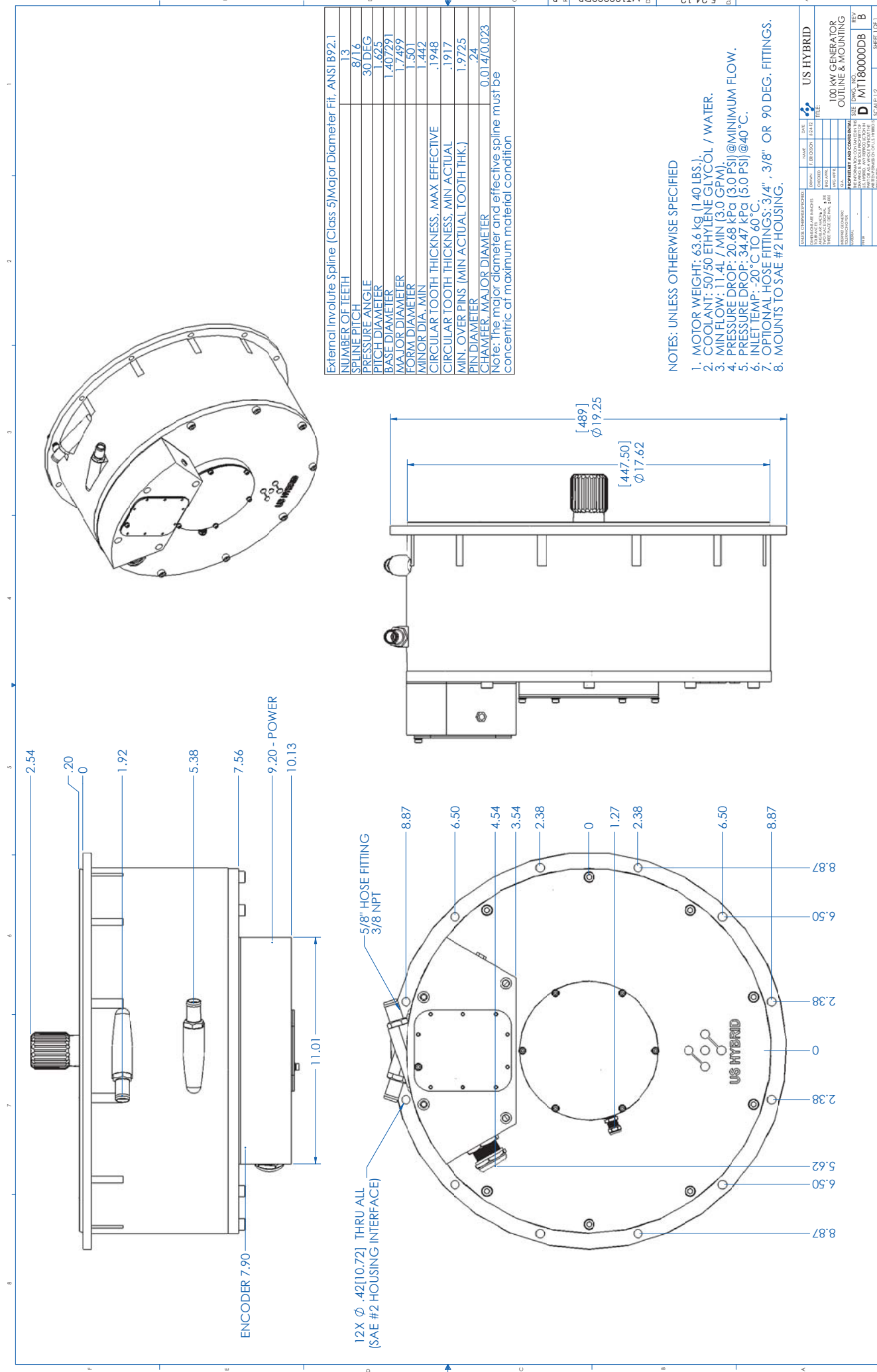
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- NOTES: UNLESS OTHERWISE SPECIFIED
1. DC/DC CONVERTER WEIGHT: 10.0 kg (22 LBS.).
 2. COOLANT: 50/50 ETHYLENE GLYCOL / WATER.
 3. MIN FLOW: 1.14L / MIN (3.0 GPM)
 4. PRESSURE DROP: 9.65 kPa (1.6 PSI) @ MINIMUM FLOW.
 5. PRESSURE DROP: 14.05 kPa (2.1 PSI) @ 40 °C.
 6. INLET TEMP: -20 °C TO 60 °C.
 7. OPTIONAL 3/8 NPT HOSE FITTINGS: 3/4" OR 90 DEG. FITTINGS.
 8. INPUT MATING CONNECTOR: TYCO HVA280 (P/N# 1587902-9).
 9. INPUT MATING CONNECTOR: TYCO HVA280 (P/N# 1587902-9).
 10. SIGNAL MATING CONNECTOR: DEUTSCH P/N# DRC23-40PA.

US HYBRID		NAME	DATE
DRAWN	FERRICKSON	4-21-11	
CHECKED			
ENG APPR:			
MFG APPR:			
Q.A.			
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TITLE:		GCU	
OUTLINE & MOUNTING		SIZE	DWG. NO.
		B	GC020000DA
		REV	A
SCALE: 1:2		SHEET 1 OF 1	

DWG: GC020000DA
 REV: A
 DATE: 4-21-11



DATE	NAME	DATE	DESCRIPTION
5/24/12

US HYBRID	100 kW GENERATOR OUTLINE & MOUNTING
REV B	DWGS. NO. MTT180000DB
SHEET 1 OF 1	SCALE: 1:2