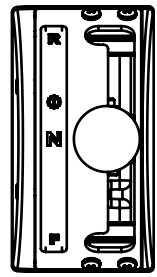
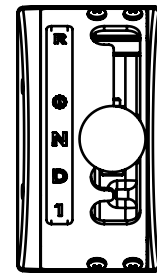


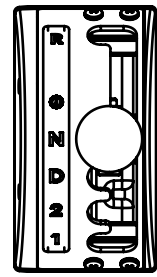
SHIFT GATE CONFIGURATIONS (RIGHT HAND)



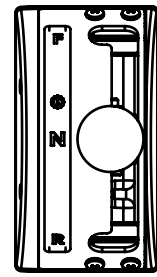
TOP VIEW
FNR / DNR GATE
SCALE: 1:4



TOP VIEW
RND1 GATE
SCALE: 1:4



TOP VIEW
RND21 GATE
SCALE: 1:4



TOP VIEW
RNF (EUROPE) GATE
SCALE: 1:4

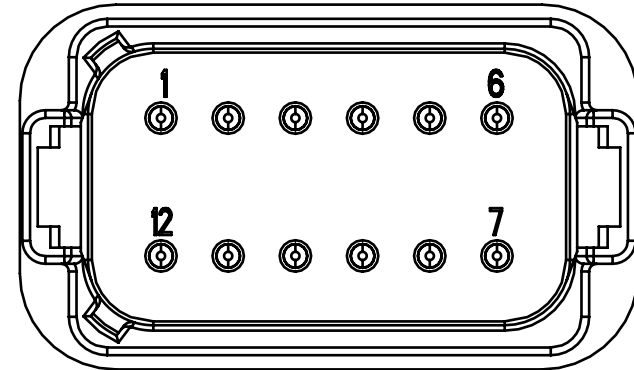
ASSEMBLY PART NUMBERS

CONFIGURATION	PCS PART NUMBER
FNR - RH	IES2030
FNR - LH	IES2031
DNR - RH	IES2032
DNR - LH	IES2033
RNF (EUROPE) - RH	IES2034
RNF (EUROPE) - LH	IES2035
RND1 - RH	IES2040
RND21 - RH	IES2050

* SEE NOTES 6 AND 7.

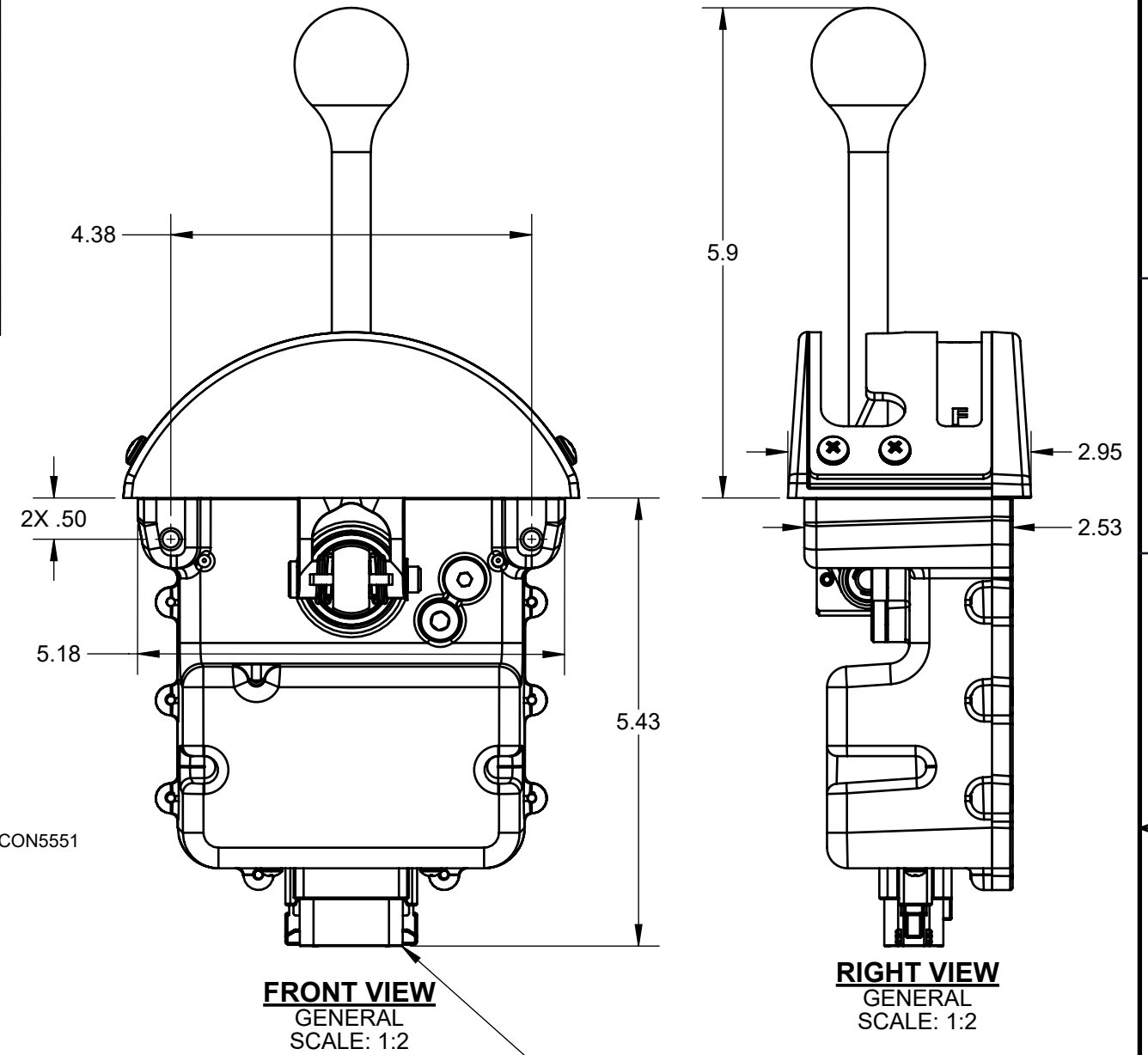
INDUSTRIAL ELECTRONIC SHIFTER PINOUT

PIN	NAME	DESCRIPTION	TYPICAL APPLICATION
1	RELAY 1	SOLID STATE RELAY, 10A MAX (SEE NOTE 8)	NEUTRAL SAFETY CIRCUIT
2			
3	OUTPUT 1	OUTPUT - BATTERY VOLTAGE (HIGH) OR GROUND (LOW). PWM, 1 AMP MAX.	ACTIVE LOW IN NEUTRAL POSITION
4	OUTPUT 2	OUTPUT - BATTERY VOLTAGE (HIGH) OR GROUND (LOW). PWM, 1 AMP MAX.	ACTIVE LOW IN REVERSE POSITION
5	RELAY 2	SOLID STATE RELAY, 10A MAX (SEE NOTE 8)	REVERSE / BACKUP LIGHTS
6			
7	POWER	SWITCHED (IGNITION), 8-32V DC	-
8	GROUND	GROUND	-
9	OUTPUT 3	OUTPUT - BATTERY VOLTAGE (HIGH) OR GROUND (LOW). PWM, 1 AMP MAX.	ACTIVE LOW IN FORWARD POSITION
10	CAN HI	CAN (J1939 OR CONFIGURABLE)	-
11	CAN LO		-
12	INPUT 1	DIGITAL INPUT (CONFIGURABLE)	SHIFT INHIBIT



INTEGRATED RECEPTACLE: DEUTSCH DT13-12PB
RECOMMENDED HARNESS CONNECTOR: DEUTSCH DT06-12SB-P012 / CON5551
RECOMMENDED TPA: DEUTSCH W12S-P012 / CON5508

DETAIL VIEW
CONNECTOR
SCALE: 2:1

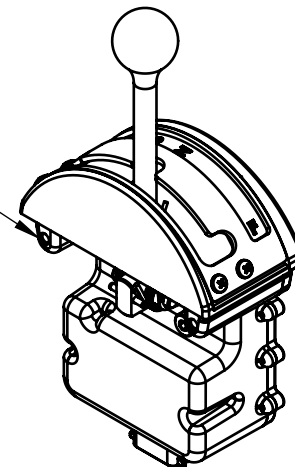


HARNESS CONNECTOR SHOWN.
ADDITIONAL WIRE CLEARANCE REQUIRED.

NOTES:

- THIS DRAWING IS INTENDED AS A GENERAL REFERENCE FOR ANY VEHICLE WITH OR INTENDING TO HAVE A PCS "INDUSTRIAL ELECTRONIC SHIFTER" PACKAGE INCLUDING (BUT NOT LIMITED TO) THE FOLLOWING FEATURES:
-DIRECT PHYSICAL REPLACEMENT TO THE TRADITIONAL GSE MECHANICAL SHIFTERS.
-CONFIGURABLE "NEUTRAL-LOCK" RATED FOR 890N (200LB) KNOB LOAD DURING "SHIFT-INHIBIT" CONDITIONS.
-DESIGNED AND TESTED FOR INDUSTRIAL ENVIRONMENTS.
-INGRESS PROTECTION RATING OF IP66.
-TEMPERATURE RATING OF -40 TO 85°C (-40 TO 185°F).
-BUILT IN (LED ILLUMINATED) RANGE POSITION LIGHTS.
-BUILT IN (LED ILLUMINATED) TRANSMISSION DIAGNOSTIC LIGHT (ALSO PROVIDES J1939 DIAGNOSTIC CODES).
-BUILT IN NEUTRAL-SAFETY SWITCH (RELAY 1, CAN BE PROGRAMMED FOR OTHER APPLICATIONS).
-BUILT IN BACKUP-LIGHT CONTROLLER (RELAY 2, CAN BE PROGRAMMED FOR OTHER APPLICATIONS).
-AVAILABLE FORWARD / NEUTRAL / REVERSE OUTPUTS FOR RANGE NOTIFICATION TO OTHER VEHICLE SUB-SYSTEMS.
- A PCS GENIII (3) VALVEBODY, PCS TRANSMISSION CONTROLLER, AND PCS APPROVED CALIBRATION ARE REQUIRED TO OPERATE THE 4LHD TRANSMISSION SYSTEM UNDER WARRANTY. CONSULT PCS FOR OTHER TRANSMISSION APPLICATIONS.
- THE NEUTRAL-LOCK FEATURE WILL PREVENT THE SHIFT LEVER FROM LEAVING NEUTRAL (AND THUS THE TRANSMISSION) DURING UNSAFE SHIFTING CONDITIONS AND LOSS-OF-12V-POWER. ATTEMPTING TO BYPASS THIS FEATURE ELECTRONICALLY OR PHYSICALLY WILL VOID THE WARRANTY.
- THE SYSTEM REQUIRES SWITCHED (IGNITION) 8-32V DC, PROTECTED BY ITS OWN 10A FUSE (RELAYS EXEMPT AND REQUIRE THEIR OWN 10A FUSES). ELECTRICAL CONNECTIONS BETWEEN THIS SYSTEM AND THE POWER SOURCE MUST BE SECURELY FASTENED USING AN APPROVED CONTACT METHOD.
- THE SHIFTER IS TO BE SECURELY FASTENED TO THE VEHICLE BODY WITH A MINIMUM TWO OF THE 1/4"-20" MOUNTING HOLES.
- FURTHER FEATURES CAN BE ENABLED OR DISABLED WITH THE CALIBRATION. CONTACT PCS FOR CALIBRATION ASSISTANCE.
- REMINDER: RIGHT HAND SETUPS (SUCH AS IES2030) ARE THE MOST COMMON IN GSE VEHICLES.
- CONSULT PCS ENGINEERING FOR HIGHER RELAY CURRENT APPLICATIONS UP TO 15 AMPS.

4X 1/4"-20 TAPPED HOLES.
1" LONG BOLTS RECOMENDED.
TORQUE BOLTS TO 45 IN-LBS.
THREADLOCKER RECOMMENDED.



ISOMETRIC VIEW
GENERAL SCALE: 1:2

CURRENT DRAW PER FUNCTION	
IDLE	0.2 A
SHIFT-ENABLE INRUSH	2.5 - 3.0 A
SHIFT-ENABLE STEADY	1.0 A
DIGITAL OUTPUT (1 OF 3 ACTIVE)	1.0 A MAX

MAX THEORETICAL: 4.2 A



INDUSTRIAL ELECTRONIC SHIFTER

USED ON	NEXT ASSEMBLY

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DRAWN BY	JJK	4/11/2018
ENG APPR.	MFP	11/20/2018
DIMENSIONS ARE IN INCHES		SCALE: 1:2 SHEET 1 OF 3

SIZE	DRAWING NO.	REV
B	SEE CHART	J