

- Suitable for industry-standard 1" handlebar
- Non-contacting throttle sensor
- 90° counter-clockwise, 20° clockwise rotational range
- Dual-redundant output signals
- Custom programming available
- Dedicated 5V and 0V supply, per output
- In-built vibration isolation
- Environmentally robust IP67



The WM-D10 provides an electronic, twist-throttle solution for a wide range of handlebar applications including Motorcycles, All-Terrain Vehicles (ATV) or Personal Recreational Vehicles (PRV).

The throttle utilises non-contacting, Hall-effect sensor technology to provide a dual-redundant-output architecture, with the second signal being a fixed relation to the main drive signal. A vehicle's Electronic Control Unit (ECU) can therefore perform comparisons between the throttle's two outputs, in order to ensure it is operating correctly. Both outputs are linear and are directly proportional to absolute sensor shaft rotation. In addition, each output has its own 5V and ground supply connections, thereby implementing a truly dual-redundant system. Incorporation of a vibration damper means the throttle sensor maintains a consistent signal

strength no matter how, or where, the vehicle is being driven.

The throttle has a rotation range of 90 degrees counter-clockwise, and a 20 degrees clockwise rotation to allow control of a cruise control function. The final rotational information can be programmed to meet a customer's exact requirements.

The design of the WM-D10 means it is exceptionally robust across a wide range of environmental conditions, including: water immersion, pressure washing, salt spray, a variety of chemicals, dust and mud; while connection to the unit is via an industry-standard integrated connector or flying lead.

SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS

SUPPLY VOLTAGE (V _{CC1} , V _{CC2})	-6.0Vdc to 6.0Vdc
OUTPUT CURRENT	10mA
OUTPUT SHORT-CIRCUIT DURATION TO GND	Indefinite
OUTPUT SHORT-CIRCUIT DURATION TO V _{CC}	Indefinite

TEMPERATURE

OPERATING TEMPERATURE	-20°C to 85°C
-----------------------	---------------

ELECTRICAL SPECIFICATIONS

Symbol	Parameter	Conditions	Minimum	Typical	Maximum	Units
V _{CC1} , V _{CC2}	APS Supply Voltage		4.5	5	5.5	V
I _{DD1} , I _{DD2}	APS Supply Current	Per APS circuit			10	mA
V _{CC1}	Cruise Cancel Output1, APS1	$\Theta = \Theta_{CC}$	20	22	24	%VDD
V _{CC2}	Cruise Cancel Output2, APS2	$\Theta = \Theta_{CC}$	9	11	13	%VDD
V _{CT1}	CT Output, AP31	$\Theta_{CT1} \leq \Theta \leq \Theta_{CT2}$	33.8	35.8	37.8	%VDD
V _{CT2}	CT Output, AP32	$\Theta_{CT1} \leq \Theta \leq \Theta_{CT2}$	15.9	17.9	19.9	%VDD
V _{WOT1}	WOT Output, APS1	$\Theta = \Theta_{WOT}$	82	84	86	%VDD
V _{WOT2}	WOT Output, APS2	$\Theta = \Theta_{WOT}$	40	42	44	%VDD
V _{OR1}	Output 1 Limit for Range	$\Theta > \Theta_{Or2}$	90	92	94	%VDD
V _{OR2}	Output 2 Limit for Range	$\Theta > \Theta_{Or2}$	44	46	48	%VDD
V _{OR3}	Output 3 Limit for Range	$\Theta > \Theta_{Or1}$	12	14	16	%VDD
V _{OR4}	Output 4 Limit for Range	$\Theta > \Theta_{Or1}$	5	7	9	%VDD
T _{CC}	Cruise Control Torque	$\Theta = \Theta_{CC}$	-0.8	-0.65	-0.5	Nm
T _{APPLY}	Apply Torque Half Way to WOT	$\Theta = \Theta_{WOT/2}$	-	REF	-	Nm
T _{RELEASE}	Release Torque Half Way to WOT	$\Theta = \Theta_{WOT/2}$	-	REF	-	Nm
T _{CT}	Apply Torque Out of CT	$\Theta = \Theta_{ML2}$	0.2	0.325	0.45	Nm
	Hysteresis	@ $\Theta = \Theta_{WOT/2}$; T _{RELEASE} / T _{APPLY}	0.25	0.425	0.6	-
T _{WOT}	Torque at WOT	$\Theta = \Theta_{WOT}$	0.4	0.525	0.65	Nm

REGULATORY VALIDATION

FMVSS-302 FLAMMABILITY	Per US federal regulations
FMVSS-124 RTI CERTIFICATION	Per US federal regulations

ENVIRONMENTAL

SEALING	IP67
---------	------

For further specifications, please contact Curtiss-Wright.