

TPWS Card; TEST 025: Useful information on where to test and the specification results required.

This is uncontrolled, it is not Network Rail endorsed. It is also NOT for testing, installation, maintenance or commissioning purposes.

Transmitter loop and Module Indications

Train Stop Sensor (TSS)										Over Speed Sensor (OSS)																
Centre pivot to signal	Loop centre Line in spec		Loop Height		Main signal Off Sub Signal On				Main signal On Sub Signal On				Arming to trigger loop	Trigger loop to Signal +/-	Loop Centre line in Spec		Loop Height		Main Signal Off Sub Signal On							
	Arm	Trig	Arming	Trigger	LED's	Arming Loop		Trigger Loop		LED's	Arming Loop				Trigger Loop		Arm	Trig	Arm	Trig	LED's	Arming Loop		Trigger Loop		
						O/P (mV)		O/P (mV)			f khz	O/P (mV)			f khz	O/P (mV)						O/P (mV)				
						CJ	MJ	CJ	MJ			CJ				MJ						CJ	MJ	CJ	MJ	CJ
Measured from centre of both aerials (where joined) to signal +/- 0.1m	Centre line of aerials between both rails is +/- 10mm.		Minimum: 60mm Maximum: 100mm		Fault light out, loop active light extinguished				# Measured with multimeter and TPWS aerial. Reading shall be no less than 29mV and no greater than 53mV Loop NOT energised Max: 2mV				I/P and loops showing yellow. Power light green	See table below for frequencies	See same instruction as left #	See table below for frequencies	See same instruction as left #	Measured from rear of both aerials. Max: 23m	Centre line of TSS to rear of OSS trigger. 350mm	Centre line of aerials between both rails is +/- 10mm.	Minimum: 60mm Maximum: 100mm	Fault light out, loop active light extinguished.				Measured with multimeter and TPWS aerial. Reading shall be no less than 29mV and no greater than 53mV Loop NOT energised Max: 2mV

Module	Colour	Pin-code	Arming loop frequency.	Trigger loop frequency.
A.C. SIM	Red	1035	-	-
OSM Normal direction	Yellow	1036	f1 64.250 kHz	f2 65.250 kHz
TSM Normal direction	Green	1038	f3 66.250 kHz	f2 65.250 kHz
OSM Opposite direction	Blue	1037	f4 64.750 kHz	f5 65.750 kHz
TSM Opposite direction	Brown	1039	f6 66.750 kHz	f5 65.750 kHz

Basic Information on Installation:

- Bolts securing aerials are tightened to 8Nm.
- Tab washers must be aligned into holes and bent over bolt heads.
- Tail cables come in 15 or 35m lengths only.
- Cable ties are no longer required to secure plug couplers together.
- Orange pipes for cables not to be used, cables are cleated to the sleepers.
- See document; **NR/L2/SIG/10173** for full installation requirements, specifications, testing of UPS system and SPOSM batteries.

Over speed Sensor (OSS)						Location Equipment						S/Box Equipment			
Main signal On Sub Signal On						Module Voltage Inputs (V)			Module Voltage Outputs (V)				Module Voltage Outputs (V)		
LED's	Arming Loop			Trigger Loop			SIM	Main Sig	Sub Sig Supp	TSS		OSS		LED's	BN12
	f khz	O/P (mV)		f khz	O/P (mV)					Arming Loop	Trigger Loop	Arming Loop	Trigger Loop		
	CJ	MJ		CJ	MJ										
No fault light lit. Loops active light lit.	See table above for frequencies			Measured with multimeter and TPWS aerial. Reading shall be no less than 29mV and no greater than 53mV Loop NOT energised: 2mV			AC input Voltage			Measure the outgoing voltage at each loop in the location case. Check the voltage is +/- 20% from last reading. The difference between the TSS arming loop and TSS trigger loop is less than 0.3v. The OSS arming loop voltage is greater than the OSS trigger loop voltage.		Power on light lit. Failed light extinguished		12v supply measured on rear of FIU and is between 9 & 15.6v	

Notes:

The actual card will state whether it requires a reading inputting or just a tick to say it is correct.

CJ: Commissioning jig

MJ: Maintenance jig

Loop frequencies max deviation is +/- 0.010kHz

To take measurements, position the aerial in the Maintenance Jig at the centre of and in the plane of the transmitter loop. Do not hold the meter directly above the loop so as not to affect the reading taken.