TLS-Z Series F Model Variants Description

Rockwell Automation's Guardmaster TLSZ Guard Locking switch functions by locking its actuator, which prohibits the opening of a guard. The TLSZ guard locking switch utilizes radio frequency identification, RFID, coding to detect the appropriate target. The Series F of the TLSZ has 4 variants depending on the end user's requirements.

The four models are described below:

440G-TZS21UPRH \ 440G-TZS21UPLH \ 440G-TZS21UTRH \ 440G-TZS21UTLH

440	G	-	T	Z	S21	U	P	R	H
a	b		c	d	e	f	g	h	i

a	
Code	**Description**
440	Safeguards the product

b	
Code	**Description**
G	Guard locking switch

c	
Code	**Description**
T	Titan locking switch

d	
Lock Type	
Code	**Description**
Z	PLe rated, cascadable safety signals

e	
Connection Type	
Code	**Description**
S21	Solid-state outputs, 2 safety (OSSD), 1 aux

f	
Special Features	
Code	**Description**
U	Unique coded RFID target

g	
Lock Type	
Code	**Description**
P	Aux signal shows lock status
T	Aux signal shows door status

h	
Connection Type	
Code	**Description**
R	Power to Release
L	Power to Lock

i	
Special Features	
Code	**Description**
H	8-pin M12 QD connector

As section h, "Connection Type" describes, the TLSZ has a 'Power-To-Release' model and a 'Power-To-Lock' model. The PTR, 'Power-To-Release', model locks the actuator until a 24VDC signal is applied to the 'Lock' wire from the input cable. As for the PTL, 'Power-To-Lock', model, the device will only 'Lock' the actuator when 24VDC is applied to the 'Lock' wire at the input connector.

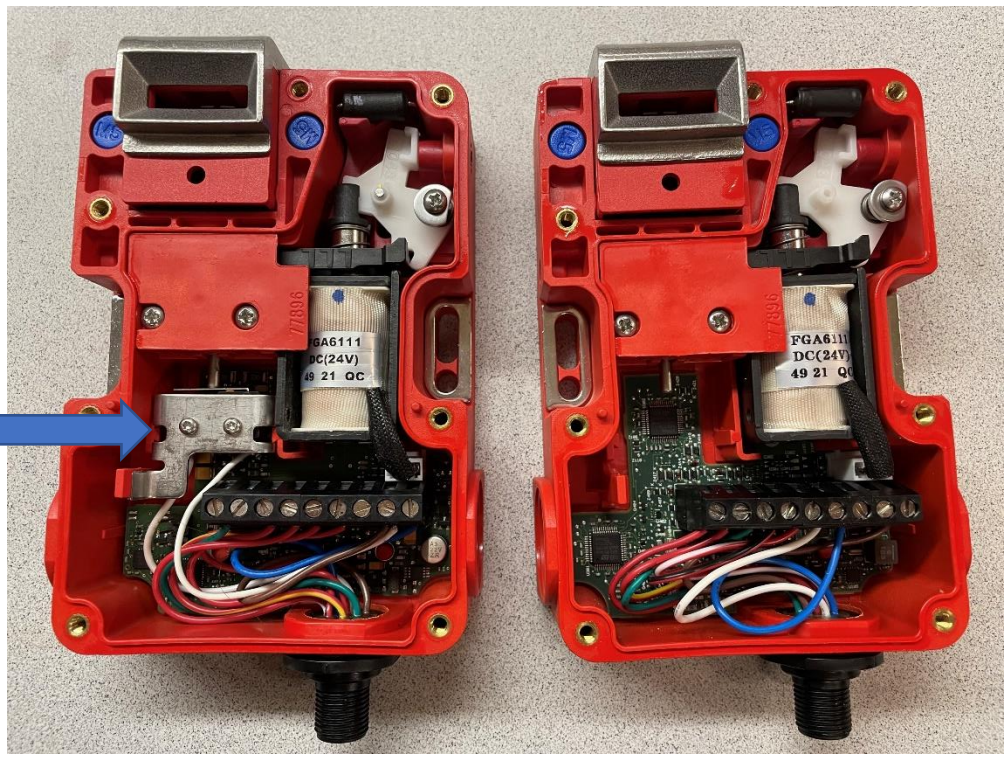
The difference between a PTR model and the PTL model is a single internal mechanical bar that functions as the mechanical locking bar that is connected to the solenoid. The firmware is the same for both PTR and PTL models with the only difference being the configuration that sets the firmware mode to PTL or PTR. Besides the mechanical locking bar difference all other components, including the printed circuit board, are identical.

The two variants of the mechanical locking bar are shown below.

There also exists two other variants that are specified by the end user's requirements – the 'P-Type' and the 'T-Type' TLSZ. Looking at section g on the chart, 'Lock Type', it details 'P-Type' as the Aux Signal showing the Lock Status of the TLSZ. The 'T-Type' outputs the status of the door – more specifically the presence of the actuator key within the locking switch. The only hardware difference between the 'P-Type' and 'T-Type' is a single miniature SPDT lever switch.

The mechanical switch in the 'T-Type' TLSZ is installed below the cam plunger that slides forward and backwards depending on whether the key is inserted or not. This switch allows the user to detect whether the key is physically inserted or not in the locking switch. The photo below shows the difference between a 'T-Type' TLSZ and a 'P-Type' TLSZ.

Switch on 'T-Type'



'T-Type' TLSZ on left vs 'P-Type' TLSZ on Right

The chart below summarizes the differences amongst the four variants of the TLSZ Guard Locking Switch.

Cat. No.	Function	Value
440G-TZS21U**P**RH 440G-TZS21U**P**LH	Lock Status	24V when actuator is unlocked 0V when actuator is locked
440G-TZS21U**T**RH 440G-TZS21U**T**LH	Actuator Status	24V when actuator inserted (gate closed) 0V when actuator removed (gate open)

Cat. No.	Switch Type	Function
440G-TZS21UP**R**H 440G-TZS21UT**R**H	Power to Release	24V unlocks the actuator 0V locks the actuator
440G-TZS21UP**L**H 440G-TZS21UT**L**H	Power to Lock	24V locks the actuator 0V unlocks the actuator