

Műszer Automatika Group

Railway product catalogue



Műszer
Automatika Ltd.

H-2040 Budaörs, Komáromi u. 22
<http://www.muszerautomatika.hu/>

tel: +36 23 414 922
mautom@muszerautomatika.hu

UTB family

Electronic Level Crossing Protection system

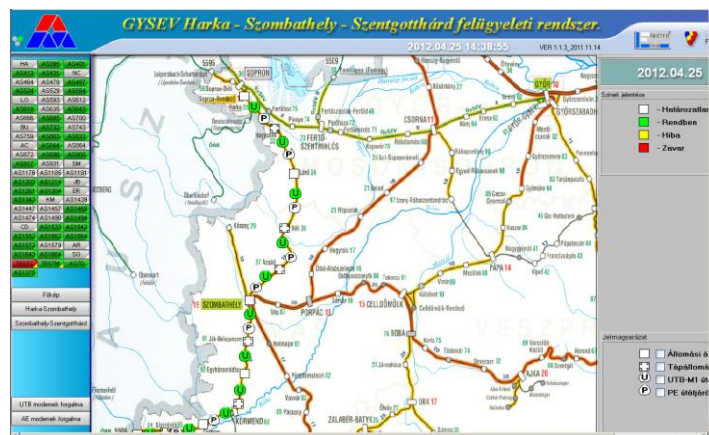


The UTB equipment of the Műszer Automatika Ltd. is the first full electronic railway safety equipment developed in Hungary. Its development began in 1994 with the support of the National Commission for Technical Development (OMFB). The prototype entered into operation in possession of the necessary permits and authority certificates in the month December of 2000. Since then our newer pieces of equipment have been taking over continuously. At present, have been 58 pieces of such equipment are operated already. Since 2008 level crossings protected by UTB operated already abroad as well. Available models of the equipment family: UTB, UTB-B1, UTB-M1 and UTB-M1+.



Installation limits of the equipment:

- 3 railway tracks (expandable)
- Track circuit or axle-counter train detection
- 16 road signals (expandable)
- 8 barrier drives (expandable)
- Light circuits with LED or bulb (35V, 330-475 mA)
- Road traffic control machine connection interface
- Electronic remote-handling interface
- Remote supervision



Advantages:

- > 5 × 10⁶ operation hours
- Compact modular structure
- Railway-specific certified multilayer software
- Low rate of failures
- Detailed error and operation logs
- Easy maintenance



RBLC-01

Relay Based Controller to for Level Crossing Protection Systems



The level crossing protection system RBLC is a modular, robust and reliable solution for all types of level crossings. The system is developed and certified according to standards EN 50126, EN 50128 and EN 50129 for the highest safety integrity level SIL4 as well as EN 50125-3 for outdoor conditions and EN 50121 -4 for EMC. There is possibility to connect up to 8 road signals; up to 2 pairs of barriers or half-barriers, functioning independently in time; up to 4 train driver's level crossing indicator. The system provides interfaces with any type of station interlocking system (relay or microprocessor based). The RBLC system can be equipped with different levels of diagnostics and remote monitoring, which can be configured by the customer. Test mode helps maintenance process of the system.

Technical data:

Operating voltage	24 VDC
Protection:	IP65
Environment	EN50125-3:2003
Vibration- and shock resistance:	EN50125-3:2003
EMC:	EN 50121-4:2017
Safety integrity:	SIL4
Lifetime:	>25years
Guarantee:	5 years

Advantages:

- Reactive fail-safe approach
- High MTBF
- Modular, robust and reliable construction
- Low energy consumption
- Modern diagnostics and remote monitoring
- Easy maintainability
- Installing is quick and cost-effective
- User friendly HMI
- Power supply and battery cabinet are delivered with the system



AFTC-13K

Audio Frequency Based Track Circuit



The AFTC-13K train detection system contains 1 transmitter unit (generator) that belongs to the 13kHz track electric circuit, and 1 receiver side electronics. It is manufactured in two versions with normal and shortened detection. The train detection system contains all the accessories that are necessary for the configuration of the track circuit. It is capable of directly operating the track relay or the electronic device which can replace the relay. The apparatus has high mechanical strength: it is mounted in a two-part enclosure of aluminum casting.

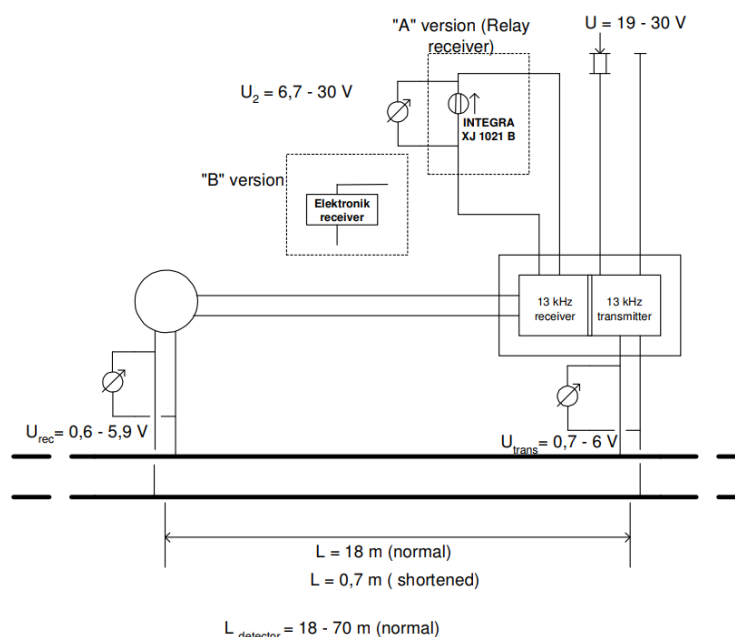
Technical data:

	Normal	Shortened
Models	AFTC-13K	AFTC-13KS
Supply voltage	24V DC	
Installation distance of Transmitter-Receiver	18 m	0,7m
Shunt sensitivity	0,2 ohm	
Rail voltage at receiver side	0,6 - 3,5 Veff	0,6 - 3,5 Veff
Track relay	XJ 1021B Integra	

Advantages:

- >30 years of operating experience
- > 1000 installation
- it can function in unfavorable environmental conditions
- robust and reliable construction
- high MTBF

Application example: installation layout of line level crossing protection equipment



MA-HSH-03

Hydraulic Barrier Drives with Barrier Boom for
Level Crossing Protection Systems



MA-HSH-03 barrier is an electrically controlled, hydraulically driven construction. The basic task of a barrier drive is the physical blockage of road traffic in the road-railway level crossings. The modularity of the system ensures easy adaptability and adherence to the control regulations of different regions and countries. The construction of the barrier drive is user-friendly; its installation is fast and cost-effective. The demand of maintenance is extremely low, there is no need for lubrication and it does not have any part that needs readjustment. Its reliability is ensured by the simple and careful design and dimensioned structure.

Main technical data:

Dimensions of the barrier drive :	300×300×1260 mm
Total weight of the drive:	about 170 kg
Operating pressure:	4-8 bar
Operating temperature range:	-30°C...+70°C
Ingress protection:	IP 54

Advantages:

- > 2700 installation
- Low energy consumption
- Modular construction
- No parts requiring lubrication
- Easy serviceability
- Easy adaptation to different interlocking systems
- Installing is quick and cost-effective



MADEL FAMILY

Semiconductor Based Optical Unit to
Level Crossing Protection Systems



The semiconductor based optics of MADEL Family have been developed for protection of railway level crossing systems. The basic models of the family have been designed for circuits which are the most frequently used at railway field. MADEL can be connected to the traditional relay based interlocking systems and to the modern electronic interlocking system as well.



Advantages:

- European product
- Reliable construction
- No need for blind optics
- Designed for applied light circuits
- Can be built in without disassembly
- Client friendly
- Favorable side visibility
- Short approval time of new models
- Manufacturer's support:
 - o Integrated design and approval
 - o On-site condition evaluation of circuits
 - o Light intensity measurement and check during operation



MADEL FAMILY

Semiconductor Based Optical Unit to
Level Crossing Protection Systems



Models	Color	Application	Nominal voltage	Nominal current
MADEL-35AC/P	red	Line/Station	AC 35V 50Hz, 75Hz	0,47A
MADEL-35AC/F	white			
MADEL-12DC/P	red	Line	DC 10,5...12V	operating current: 0,9A hold circuit: 0,45A
MADEL-12DC/F	white			
MADEL-24DC/P	red		DC 24V	
MADEL-24DC/F	white			
MADEL-2060DC/P	red	Line/Station	DC 24, 35, 36, 48V	0,3A
MADEL-2060DC/F	white			

Technical Data:

Light intensity:	Class 1/0 (100–200cd, temperature compensated) (EN12368:2015)
Light intensity distribution:	Category B, extra wide (EN12368:2015)
Dimensions:	Available in all standard sizes
Fastening:	Through-bolts (accessory)
Material of casing:	Painted aluminum casting (corrosion resistant), UV protected polycarbonate front panel
Protection:	Class 5.: IP65 (EN12368:2015, EN60529:2015)
Environment:	Class A/B (-25..+60°C, EN12368:2015) T1 (-25..+70°C, EN50125-3:2003)
Vibration-and shock resistance:	EN50125-3:2003
Impact strength:	IR3 (EN12368:2015)
EMC:	MSZ EN 50121-4:2017
Connection:	2 wired cable
Safety integrity:	SIL2
Lifetime:	> 10 years
Guarantee:	8 years



VF-02

Electric Points Heating and Sleeper Heating System



The purpose of the system is to prevent the formation of ice in the vicinity of the switch points – based on the measurement of the environmental factors – during cold periods and thereby ensure the adjustability of the switch points. The system is modular and can be easily adapted to any station interlocking system. One of the most significant benefits of the system is the manufacturer support: continuous development, production and service.

Components of the system:

Transformer station:

- With transformers of 25 kV/231 V, power ranges can be 16, 25, 50, 100, 160, 250 kVA
- Power measurement with remote-supervision is integrated in the system

District control cabinet:

- Automatic control of district heating input based on measured environmental parameters (e.g. temperature, humidity, etc.) and collection and transmission of status information to control and monitoring module
- Connection to the station data transfer system

Intervention and control unit:

- Optional deployment: schematic board or PC interface
- HMI with simple, graphical display
- Ensures connection with the remote supervision system

Remote supervision system:

- PC-based (SCADA) system which is capable of the monitoring more stations and/or open line heating systems

