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Glossary of terms of railway signalling

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Foreword

This Japanese Industrial Standard has been revised by the Minister of Land, Infrastructure, Transport and Tourism through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Railway Electrical Engineering Association (JREEA)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS E 3013 : 2001**), which has been technically revised.

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Glossary of terms of railway signalling

1 Scope

This Japanese Industrial Standard specifies the principal terms used for railway signalling (hereafter referred to as terms).

2 Normative references

There are no normative references in this Standard.

3 Classification

The terms are classified as follows.

- a) General terms
- b) Terms on signal apparatuses
- c) Terms on block instruments
- d) Terms on switch-and-lock movement apparatuses
- e) Terms on interlocking devices
- f) Terms on level crossing protection
- g) Terms on track circuit apparatuses
- h) Terms on other apparatuses

4 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

English equivalent in the rightmost column is informative. All English terms are in British English, unless followed by the indication “(American)”.

a) General terms

No.	Term (Japanese character)	Definition	English equivalent (informative)
1001	鉄道信号保安装置	means to maintain the safety of train operation or vehicle movement, which comprises signal apparatuses, block instruments, switch-and-lock movement apparatuses, interlocking devices, level crossing protections, track circuit apparatuses and so forth	railway signalling equipment
1002	列車	vehicles arranged for operation purpose on a permanent way outside the station	train

No.	Term (Japanese character)	Definition	English equivalent (informative)
1003	車両	locomotives, passenger cars, freight cars and special cars, used for railway business	rolling stock car, vehicle
1004	安全側線	permanent way installed in the station, with a purpose of preventing a train or vehicle from collision or contact, if it accidentally overruns the stop position	safety siding, safety track
1005	過走余裕距離	distance from a signal device or train stop indicator to the position of limit where there is no risk of collision, contact or derail due to the overrun of train or vehicle	safety allowance for over-running
1006	確認距離	distance from the position allowing the confirmation of aspects of signal device to that signal device	sighting distance
1007	車両接触限界	limit in which a vehicle on each permanent way does not interfere the other track in the area of permanent way junction or crossing	clearance limit, fouling point
1008	定位	1) regular state of apparatus 2) point direction regularly allowing to be in opening route	normal position
1009	反位	1) other (opposite) state than the regular state of apparatus 2) point direction other than the direction regularly allowing to be in opening route	reverse position
1010	連動図表	table representing such a technical content of interlocking device, using letter and graphical symbols for railway signals Note 1 to entry Consisting of an interlocking diagram describing such a wiring diagram and an interlocking table describing the technical content of interlocking.	interlocking table
1011	信号結線図	wiring diagram showing an electric circuit of railway signalling equipment, using letter and graphical symbols for railway signalling	signal circuit diagram
1012	進路信号方式	signal system to indicate the state of opening route to trains	route signal system, route signalling
1013	速度信号方式	signal system to indicate the operation speed to trains	speed signal system, speed signalling

No.	Term (Japanese character)	Definition	English equivalent (informative)
1014	対向	1) direction from front end to rear end of railroad switch 2) direction opposite to the proceeding direction of target train, in the direction of train operation	1) facing 2) opposing
1015	背向	direction from rear end to front end of railroad switch	trailing
1016	信号用リレー	relays used in railway signalling equipment, which comprise track relay, normal relay and so forth	signal relay
1017	フェールセーフ	property of apparatus, even if it fails, to enter into the right-side state and not to operate in the wrong-side Note 1 to entry On the apparatus failure in railway signal, the aspect represents the limit (train stop or speed reduction) side.	fail safe, fail-safe
1018	危険側故障	failures caused by systems, devices, components and so forth, which may cause serious consequences such as train collision, derailment	wrong-side failure
1019	安全側故障	failures caused by systems, devices, components and so forth, which does not cause serious consequences such as train collision, derailment	right-side failure
1020	フォールトトレランス	technologies or methods to maintain all or part of the required functions even if a part of the system fails	fault tolerance
1021	冗長構成	configuration method in which multiple facilities or apparatuses are prepared so that operations can continue even if a part of them fails	redundant configuration
1022	バス同期式	configuration for safety ensurance using a scheme that guarantees the coincidence of the data running on the buses in clock-synchronized multiple microprocessors by comparing them at each machine cycle	bus synchronization
1023	位相差同期式	configuration for safety ensurance using a scheme that guarantees the soundness of microprocessors, in which two microprocessors are synchronized with each other but their operations are half-cycle shifted and the comparison results of their output data are confirmed to be alternately consistent and inconsistent at every half-cycle	π -phase difference operation

No.	Term (Japanese character)	Definition	English equivalent (informative)
1024	マクロ同期式	configuration for safety ensurance using a scheme that guarantees the soundness of microprocessors, in which two microprocessors are synchronized with each other by a software and the software compares their computed results	task synchronization
1025	RAMS	acronym for reliability, availability, maintainability and safety, which means the approach for their total management Note 1 to entry Mainly used in the railway field. Note 2 to entry IEC 62278 defines a process for managing RAMS based on the railway system life cycle and applications in all relevant phases.	RAMS
1026	安全インテグリティレベル	safety grade required Note 1 to entry A small value corresponds to a lower grade, with 1 representing the lowest grade and 4 representing the highest.	safety integrity level (SIL)
1027	ディペンダビリティ	term that collectively unifies the availability performance, and the reliability performance and the maintainability performance which are the factors affecting the availability performance	dependability
1028	アシュアランス技術	technology that guarantees the stable system operation, which comprises technologies applicable to a system considering two factors : heterogeneity and adaptability Note 1 to entry Ability to permit the coexistence of different needs as opposed to heterogeneity. Note 2 to entry Adaptability is the ability to respond to the change in circumstances.	assurance systems engineering
1029	EMC	ability of apparatus or system to function satisfactorily without emitting the electromagnetic interference waves that would interfere with the device operations (emission control) and to withstand interference from the electromagnetic environment (immunity control)	electromagnetic compatibility

b) Terms on signal apparatus

No.	Term (Japanese character)	Definition	English equivalent (informative)
2001	鉄道信号	means to deliver the intention in railway, using a certain symbol or code of colour, shape, sound and the like, which comprises signals, signs and indicators	railway signal
2002	信号	aspect which represents the condition for a train or vehicle operation to an attendant	signal
2003	現示	representation of the signal indication	aspect
2004	表示	representation of the condition/state by means of sign, indicator or the like	indication
2005	信号装置	generic term for the apparatuses representing the aspect or the indication of railway signal	signal apparatus, signal device
2006	信号機	devices for representing signal aspects, which comprise fixed signals, cab signals and signal for work-site	signal, signal device
2007	信号機の外方	direction of the signalling aspect of signal device	rear of signal
2008	信号機の内方	direction in which a train or vehicle is protected	advance of signal
2009	常置信号機	signal devices fixed at a certain place, which comprise main signals, subsidiary signals and signal appendants	fixed signal
2010	主信号機	signal devices having a certain protective area, which comprise home signals, starting signals, block signals, call-on signals and shunting signals	main signal, running signal
2011	場内信号機	signal devices for a train intending to enter into the station	home signal, entry signal
2012	出発信号機	signal devices for a train intending to depart from the station	starting signal, exit signal
2013	閉そく信号機	signal devices for a train intending to enter into the block section	block signal
2014	誘導信号機	signal devices installed to allow other trains or vehicles to enter into the protective area of a home signal or a shunting signal, in which a train or vehicle is located without a sign	call-on signal, calling-on signal
2015	入換信号機	signal devices for a vehicle to be shunted	shunting signal
2016	従属信号機	signal devices being subsidiary to the main signals, which comprise distant signals, passing signals and repeating signals	subsidiary signal
2017	遠方信号機	signal devices, subsidiary to home signals, giving notice of signalling aspect of the principal signal at rear of signal	distant signal

No.	Term (Japanese character)	Definition	English equivalent (informative)
2018	通過信号機	signal device, subsidiary to a starting signal, giving notice of signalling aspect of the principal signal, at rear of signal, to inform the station passing permission or not	passing signal
2019	中継信号機	signal device, subsidiary to a home signal, starting signal or block signal, to relay the signalling aspect of the principal signal at rear of signal	repeating signal
2020	信号附属機	generic term for route indicator and preliminary route indicator, to be appended to main signal or subsidiary signal, which are provided for supplementing the conditions that the relevant signal should indicate	signal appendant
2021	進路表示機	indicator to be appended to home signal, starting signal, call-on signal or shunting signal, when used commonly for two or more routes, to indicate the route of train or vehicle	route indicator
2022	進路予告機	indicator to be appended to home signal, starting signal, block signal, distance signal or repeating signal, to notice the train route indicated by the next home signal or starting signal	preliminary route indicator
2023	臨時信号機	signal device temporarily provided when trains or vehicles cannot be operated owing to a permanent way failure or other reasons, which comprise slow speed signal, slow speed notifying signal and speed limit termination signal	signal for work-site
2024	徐行信号機	signal device to indicate slow speed for a train or vehicle intending to enter into the area in which slow speed operation is required	slow speed signal, speed limit execution signal
2025	徐行予告信号機	signal device giving notice of slow speed operation at rear of signal of the slow speed signal	slow speed notifying signal, slow speed approach signal, slow speed warning signal
2026	徐行解除信号機	signal device to indicate slow speed termination for a train or vehicle intending to depart from the area in which slow speed operation is required	speed limit termination signal, slow speed release signal
2027	二位式信号機	signal device to show the aspect of signal indicating the route condition for only one block section in advance of signal	two-position signalling system

No.	Term (Japanese character)	Definition	English equivalent (informative)
2028	三位式信号機	signal device capable of showing the aspect of signal indicating the route condition for two or more block sections in advance of signal	three-position signalling system
2029	色灯式信号機	signal device to show the aspect by means of colour lights	colour light signal
2030	灯列式信号機	signal device to show the aspect of the signal by means of arrangement of lights and their lighting positions	position light signal
2031	腕木式信号機	signal device to show the signal by means of semaphore	semaphore signal
2032	多灯形色灯式信号機	colour light signal using a separate light source for multiple colour lights	multiple colour light signal
2033	単灯形色灯式信号機	colour light signal using a single light source	searchlight signal
2034	車内信号機	signal device to show the aspect in a cab of a train and so forth	cab signal
2035	信号表示区間	independent section in a cab signal block, in which identical signal information is transmitted to the trains	cab signal section
2036	主体の信号機	signal device being principal for a subsidiary signal or a signal appendant	principal signal
2037	自動の信号機	signal device controlled automatically by means of track circuit and so forth	automatic signal
2038	手動の信号機	signal device controlled manually by operator	manual signal
2039	半自動の信号機	signal device controlled by track circuit and so forth, and also can be controlled by operator	semi-automatic signal
2040	保留の信号機	signal device which, after a semi-automatic signal once shows the stop signalling aspect, continuously shows the aspect of stop signal until the signal lever is handled	stick signal
2041	許容停止の信号機	signal device which, even in the aspect of stop signal, allows trains proceeding beyond it, under the prescribed condition	permissive signal
2042	絶対停止の信号機	signal device absolutely prohibiting trains from entering beyond it during the aspect of stop signal	absolute signal
2043	進行定位の信号機	signal to show the aspect indicating the proceed continuously, in general	normal proceed signal
2044	停止定位の信号機	signal to show the aspect indicating the stop continuously, in general	normal stop signal
2045	手信号	signal shown according to flag or lighting	hand signal, flag signal
2046	手信号代用器	apparatus used instead of hand signal	substitute apparatus for hand signal

No.	Term (Japanese character)	Definition	English equivalent (informative)
2047	特殊信号	signals to be used in an emergency, which comprise fusee signal, flashing light signal and alarm signal	special signal
2048	発炎信号	stop signal according to fire	fusee signal
2049	発光信号	stop signal according to flashing red light	flashing light signal
2050	特殊信号発光機	indicator to show the aspect of flashing light signal when the trains are urgently required to be stopped Note 1 to entry There are a rotation type and a flashing type.	obstruction warning indicator
2051	発報信号	stop signal according to audible alarm	alarm signal
2052	信号炎管	fusee to be used for the fusee signal	fusee
2053	合図	indication of the intention of signer to the other attendant mutually	sign
2054	合図器	generic term for devices used for signing	sign
2055	出発合図器	device used for issue of sign of departure	departure sign
2056	出発指示合図器	device used for issue of sign of departure for train guard	departure sign for train guard
2057	ブレーキ試験合図器	device used for issue of sign of brake test	brake test sign
2058	移動禁止合図器	device used for issue of sign of forbidden movement	forbidden movement sign
2059	入換合図器	device used for issue of sign of shunting	shunting sign
2060	標識	device to indicate the position, direction, conditions and so forth of an object to an attendant	indicator, marker
2061	閉そく信号標識	indicator to represent that it is an automatic signal device and also a block signal Note 1 to entry It is also referred to as identification lamp.	marker light
2062	場内標識	indicator, in a cab signal block, to indicate the starting end of permanent way to allow a train entering into the station	home signal position indicator
2063	出発標識	indicator, in a cab signal block, to indicate the starting end of permanent way to allow a train departing from the station	leaving-signal position indicator
2064	中継信号標識	indicator to represent that signal device is a colour light repeating signal	repeating signal marker
2065	出発反応標識	indicator to inform the aspect of starting signal	repeater of starting signal
2066	列車停止標識	indicator to indicate the positional limit of train stop, for the case where a starting signal cannot be provided at the prescribed position, or for the permanent way to which starting signal is not installed	train stop indicator