MISRA AC SLSF:2023 Amendment 4

Revisions for MATLAB Release R2025a

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1 St James Court
Whitefriars
Norwich
Norfolk
NR3 1RU
UK

www.misra.org.uk

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MISRA Mission Statement

MISRA provides world-leading best practice guidelines for the safe and secure application of both embedded control systems and standalone software.

MISRA is a collaboration between manufacturers, component suppliers, engineering consultancies and academics which seeks to research and promote best practice in developing safety- and security-related electronic systems and other software-intensive applications.

To this end, MISRA conducts research projects and publishes documents that provide accessible information for engineers and management.

MISRA also facilitates the dissemination and exchange of information between practitioners through supporting and holding technical events.

Disclaimer

Compliance with these guidelines does not in itself ensure error-free robust software.

Compliance with the requirements of this document, or any other standard, does not of itself confer immunity from legal obligations.

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Ivan Ellis	Jaguar Land Rover
Alasdair Mitchell	BorgWarner
Chris Rowell	Ricardo UK

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David Ward	HORIBA MIRA

Contents

1 Introduction

The MISRA Autocode (AC) family of documents deals with the application of language subsets for automatic code generation purposes. MISRA AC SLSF, *Modelling design and style guidelines for the application of Simulink and Stateflow,* specifies modelling best practices intended to assist users of MathWorks' tools Simulink and Stateflow to produce high quality models using them.

Simulink and Stateflow receive updates as part of regular MathWorks MATLAB releases. The second edition of the guidelines, MISRA AC SLSF:2023 [1], takes account of MATLAB releases up to and including R2023a.

This Amendment to MISRA AC SLSF:2023 contains modifications that bring the guidelines up to date for MATLAB release R2025a. Specifically, this document contains updated versions of:

- Appendix C: Simulink diagnostic configuration
- Appendix D: Simulink window appearance settings
- Appendix E: Allowable Simulink and Stateflow blocks

When applying MISRA AC SLSF:2023 in developments using MATLAB release R2025a, the versions of the Appendices in this document should be used instead of those in MISRA AC SLSF:2023 and references in MISRA AC SLSF:2023 to Appendices C, D or E should be taken to refer to the versions in this document.

2 References

[1] MISRA AC SLSF:2023 *Modelling design and style guidelines for the application of Simulink and Stateflow,* ISBN 978-1-911700-07-4 (paperback), ISBN 978-1-911700-06-7 (PDF), The MISRA Consortium Limited, 2023

[2] MISRA AC SLSF:2023 *Amendment 3 Revisions for MATLAB Release 2024b,* ISBN 978-1-911700-18-0 PDF, The MISRA Consortium Limited, 2025

Appendix C: Simulink diagnostic configuration

The main menu options in the following table shall be set, per sub-rule MISRA AC SLSF 004 A, for "diagnostic configuration" in the Simulink window on completion of the model.[1]

The use of settings other than as specified here must be supported with documented deviations per Appendix F: Compliance. Specific exceptions to this requirement are instances where a setting that will prevent or halt a tool action is used instead of one that will not (e.g. an Error setting used in place of a Warning setting).

The required treatment of diagnostics is as follows:

- Errors and other conditions that prevent or halt tool actions:
  - Ordinarily, the causes of these will necessarily need to be corrected.
  - A diagnostic in this category can be suppressed only when supported by a deviation.

- Warnings and other conditions that generate a diagnostic message but do not prevent or halt tool actions:
  - The causes of these should be investigated and avoided as far as is reasonably practical.
  - A diagnostic in this category can be suppressed or left uncorrected without the need for a deviation.

Notes:

- The "Releases" column considers releases from 2020A onwards.
- Changes are highlighted with respect to MISRA AC SLSF:2023 Amendment 3 [2].
- This appendix is complete and does not depend on previous amendments being used.

Setting key	
	Diagnostic setting has changed to a more significant level
	Diagnostic setting has not changed
	Diagnostic setting has changed to a less significant level
	New diagnostic setting introduced

Menu options	Related rule	Setting	Releases
Diagnostics / Solver			
Algebraic loop	None	error	All
Minimize artificial algebraic loop occurrences	None	warning	– 2024B
Artificial algebraic loop occurrences not eliminated	None	warning	2025A –
Block priority violation	None	error	All
Min step size violation	None	error	All
Consecutive zero crossings violation	None	error	All
Automatic solver parameter selection	MISRA AC SLSF 003 A	error	All
State name clash	MISRA AC GMG 006 C	warning	All
Operating point restore interface checksum mismatch	None	warning	– 2024B
Extraneous discrete derivative signals	None	error	– 2023B
Diagnostics / Advanced			
Allow symbolic dimension specification	None	Unselected	All
Check undefined subsystem initial output	MISRA AC SLSF 007 A	Selected	– 2024B
Allow automatic unit conversions	None	Unselected	All
Allowed unit systems	None	SI	All
Units inconsistency messages	None	warning	All
Solver data inconsistency	None	warning	All
Ignored zero crossings	None	warning	All

[1] The grouping of the menu options varies between the different releases of Simulink. The options listed in the table may not be seen within the root of the menu but may be located at the second or third level of menu.

Menu options	Related rule	Setting	Releases
Masked zero crossings	None	warning	All
Initial state is array	None	warning	All
Insufficient maximum identifier length	None	warning	2020B –
Block diagram contains disabled library links	None	error	All
Block diagram contains parameterized library links	None	error	All
Operating point interface checksum mismatch	None	error	2025A –
Operating point contents checksum mismatch	None	error	2025A –
Use only existing shared code	None	error	2025A –
Combine output and update methods for code generation and simulation	None	Selected	All
Behavior when pregenerated library subsystem code is missing	None	error	2022B –
Behavior when a matching unit test for subsystem reference is missing	None	error	2023A –
Enable debug execution mode for FMU Import blocks	None	Unselected	All
Arithmetic operations in variant conditions	None	error	All
Variant activation time inherited from Simulink.VariantControl	None	error	2022B –
Variant condition mismatch at signal source and destination	None	error	2020B –
Variant configuration not used by top model	None	error	2022B –
Check runtime output of execution context	None	Selected	– 2020B
Check undefined subsystem initial output	None	Selected	– 2022A
Diagnostics / Sample Time			
Source block specifies -1 sample time	MISRA AC SLSF 009 D	error	All
Multitask rate transition	None	error	– 2020A
Multitask data transfer	None	error	2020B –
Single rate transition	None	error	– 2020A
Single task data transfer	None	error	2020B –
Multitask conditionally executed subsystem	None	error	All
Tasks with equal priority	None	error	All
Exported tasks rate transition	None	error	– 2023B
Enforce sample times specified by Signal Specification blocks	MISRA AC SLSF 009 D	error	All
Sample hit time adjusting	None	warning	All
Unspecified inheritability of sample time	MISRA AC SLSF 009 C	error	All
Diagnostics / Data Validity / Signals			
Signal resolution	None	Explicit only	All
Division by singular matrix	None	error	All
Underspecified data types	MISRA AC GMG 010 A, B, C	error	All
Inf or NaN block output	MISRA AC GMG 013 B	error	All
“rt” prefix for identifiers	MISRA AC GMG 006 D	error	All
Wrap on overflow	MISRA AC GMG 010 B	error	All
Saturate on overflow	MISRA AC GMG 013 A	error	All
Underspecified dimensions	None	error	All
Simulation range checking	None	error	All
String truncation checking	None	error	All
Diagnostics / Data Validity / Parameters			
Detect overflow	None	error	All
Bits of error threshold	None	Zero bit	2024A -
Detect precision loss	None	warning	All
Suppress double to single detection	None	Unselected	2024A -
Absolute difference threshold	None	0.0	2024A -
Relative difference threshold	None	0.0	2024A -
Detect underflow	MISRA AC GMG 010 D	error	All
Detect loss of tunability	None	warning	All
Detect downcast	MISRA AC GMG 010 D	error	All
Diagnostics / Data Validity / Data Store Memory Blocks			
Detect read before write	MISRA AC SLSF 045 C	Enable all as errors	All
Detect write after read	MISRA AC SLSF 045 C	Enable all as errors	All
Detect write after write	MISRA AC SLSF 055 D	Enable all as errors	All
Multitask data store	MISRA AC SLSF 005 C Data store blocks not permitted	error	All

Menu options	Related rule	Setting	Releases
Duplicate data store names	None	warning	All
Diagnostics / Data Validity / Advanced Parameters			
Multiple driving blocks executing at the same time step	MISRA AC SLSF 005 C Merge block not permitted	error	All
Underspecified initialization detection	MISRA AC SLSF 007 A	Classic	All
Array bounds exceeded	MISRA AC GMG 010 D	error	All
Model Verification block enabling	None	Use local settings	All
Detect non-reused custom storage classes	None	error	– 2022A
Detect ambiguous custom storage class final values	None	error	– 2022A
Parameter Writer block validation	None	Use local settings	2023A –
Diagnostics / Type Conversion			
Unnecessary type conversions	None	warning	All
Vector/matrix block input conversion	MISRA AC SLSF 015 C	error	All
32-bit integer to single precision float conversion	MISRA AC GMG 010 A	warning	All
Detect underflow	MISRA AC GMG 010 D	error	All
Detect precision loss	MISRA AC GMG 010 D	error	All
Detect overflow	MISRA AC GMG 010 D	error	All
Diagnostics / Connectivity / Signals			
Signal label mismatch	MISRA AC SLSF 027 B, C, D, E	error	All
Unconnected block input ports	MISRA AC SLSF 017 A	error	All
Unconnected block output ports	MISRA AC SLSF 017 A	error	All
Unconnected line	MISRA AC SLSF 017 B	error	All
Diagnostics / Connectivity / Buses			
Unspecified bus object at root Outport block	None	error	All
Element name mismatch	MISRA AC SLSF 027 B	error	All
Bus signal treated as vector	MISRA AC SLSF 016 D	error	All
Non-bus signals treated as bus signals	MISRA AC SLSF 016 D, E	error	All
Repair bus selections	None	Warn and repair	All
Diagnostics / Connectivity / Function calls			
Context-dependent inputs	None	error	All
Diagnostics / Compatibility			
S-function upgrades needed	None	error	All
Block behaviour depends on frame status of signal	None	error	All
Operating point object from earlier release	None	error	2021B –
SimState object from earlier release	None	warning	– 2021A
Diagnostics / Model Referencing			
Model block version mismatch	MISRA AC GMG 001 A	warning	All
Port and parameter mismatch	None	error	All
Unsupported data logging	MISRA AC SLSF 005 A To File & To Workspace blocks not permitted	error	All
No explicit final value for model arguments	None	warning	2020B –
Invalid root Inport/Outport block connection	None	warning	– 2023B
Diagnostics / Stateflow			
Unused data, events, messages and functions	MISRA AC SLSF 037 G	error	All
Unexpected backtracking	MISRA AC SLSF 043 I	error	All
Invalid input data access in chart initialization	MISRA AC SLSF 042 F	error	All
No unconditional default transitions	MISRA AC SLSF 042 D	error	All
Transition outside natural parent	MISRA AC SLSF 034 C	error	All
Undirected event broadcasts	MISRA AC SLSF 047 A	error	All
Transition action specified before condition action	MISRA AC SLSF 045 C	error	All
Read-before-write to output in Moore chart	None	error	All
Absolute time temporal value shorter than sampling period	None	error	All
Self transition on leaf state	None	warning	All
Execute-at-Initialization disabled in presence of input events	None	warning	All
Unreachable execution path	MISRA AC SLSF 043 C, E, F	error	All
Invalid default or entry path	None	error	2025A –

Menu options	Related rule	Setting	Releases
Diagnostics / Stateflow / Advanced Parameters			
Use of machine-parented data instead of Data Store Memory	None	error	– 2022B

Appendix D: Simulink window appearance settings

The following appearance options must be set, per sub-rule MISRA AC SLSF 019 C, in the Simulink window on completion of the model[2]:

Notes:

- Only MATLAB versions from release 2020A onwards are considered, but earlier versions may have these appearance settings.
- Changes are highlighted with respect to MISRA AC SLSF:2023 Amendment 3 [2].
- This appendix is complete and does not depend on previous amendments being used.

Setting key		
		Appearance setting has changed to a more significant level
		Appearance setting has not changed
		Appearance setting has changed to a less significant level
		New appearance setting introduced

D.1 Window Settings

Menu options	Related rule	Setting	Priority
Modeling > Environment			
Model Browser	None	Selected	Advisory
Explorer bar	None	Selected	Advisory
Smart guides	None	Selected	Advisory
Preserve alignment	None	Selected	Advisory
Toolstrip *[1]	None	Selected	Advisory
Status bar	None	Selected	Advisory
Modeling > Environment > Simulink Preferences			
Use classic diagram theme	MISRA AC SLSF 024	Selected	Required
Content preview displays for new hierarchical elements	None	Deselected	Advisory

D.2 Model Settings

Menu options	Related rule	Setting	Priority
Format			
Show Markup	None	Selected	Required
Background *[2]	MISRA AC SLSF 019	White	Required
Debug > Diagnostics > Information Overlays			
> Signal Display			
Signal dimensions	None	Deselected	Required
Signal Data Ranges	None	Deselected	Required
Propagated signal labels	None	Deselected	Required
Nonscalar signals *[3]	None	Selected	Required
Signal resolves to object	None	Deselected	Required
> Sample Time			
Colours	None	Deselected	Required
Text	None	Deselected	Required
Timing Legend	None	Deselected	Required
Automatic Rate Transitions	MISRA AC SLSF 058	Deselected	Required
> Library links			
Show All Links	None	Selected	Required

[2] The location of the options listed in the table varies between the different releases of Simulink. In the latest versions they are spread across different toolbars and the right-click menu on a selected block.

Menu options	Related rule	Setting	Priority
> Blocks			
Execution order *[4]	None	Deselected	Required
Reduced Blocks	None	Deselected	Required
Variant conditions	None	Deselected	Required
Variant Legend	None	Deselected	Required
Variant Fading	None	Deselected	Required
Reference Model I/O mismatch	None	Deselected	Required
Reference Model version	None	Deselected	Required
Connectors	None	Deselected	Required
Name in Tooltip	None	Deselected	Required
Description in Tooltip	None	Deselected	Required
Parameters in Tooltip	None	Deselected	Required
Show block name *[5]	MISRA AC SLSF 026	As per related rule	Required
Hide Automatic Block Names	MISRA AC SLSF 026	Deselected	Required
Execution Context *[6]	None	Deselected	Required
> Ports			
Units	None	Deselected	Required
Base Data Types	None	Deselected	Required
Alias Data Types	None	Deselected	Required
Port Number	None	Deselected	Required
> Signal Badges			
Logging & Viewers *[7]	None	Selected	Required
Test Point *[8]	None	Selected	Required
Linearization indicators	None	Selected	Required
C Code > Code Interface			
Storage Class Indicator	None	Deselected	Required

D.3 Block Settings

Menu options	Related rule	Setting	Priority
Format			
Auto name	MISRA AC SLSF 026	As per related rule	Required
Foreground Colour *[9]	MISRA AC SLSF 023	Black	Advisory
Background Colour *[9]	MISRA AC SLSF 023	White	Advisory
Shadow	MISRA AC SLSF 024	Deselected	Required
Zoom	MISRA AC SLSF 019	100%	Advisory
Content Preview	None	Deselected	Required
Port Labels	None	From Block Name / From Port Block Name	Required
Show Block Name	MISRA AC SLSF 026	Deselected	Required

Notes:

Key	Description
*[1]	This menu option was renamed from Toolbars.
*[2]	This menu option was renamed from Canvas Colour.
*[3]	This menu option was renamed from Wide non-scalar lines.
*[4]	This menu option was renamed from Sorted execution order.
*[5]	This menu option was removed in 2025a.
*[6]	This menu option was removed in 2021a.
*[7]	This menu option was renamed from Viewer indicator.
*[8]	This menu option was renamed from Testpoint and logging indicators.
*[9]	These menu options were renamed from Block Colours.

Appendix E: Allowable Simulink and Stateflow blocks

The table below details which Simulink and Stateflow blocks from MathWorks libraries are allowed in controller and plant modelling. The criteria for allowable blocks are detailed in rule MISRA AC SLSF 005.

A detailed description of each block can be found in documentation from MathWorks and can be used in conjunction with the criteria for allowable blocks to understand its assigned status.

Additional information for some blocks is provided in the notes section at the end of the table.

Notes:

- The release column considers releases from 2020A onwards.
- Changes are highlighted with respect to MISRA AC SLSF:2023 Amendment 3 [2].
- This appendix is complete and does not depend on previous amendments being used.

Status Key	
	Block status has changed to Not allowed (N)
	Block status has changed to Allowed (A)
	Block status has not changed
	New block introduced
	Block deprecated

Category	Block	Show block name	Can be re-sized	Controller modelling status	Plant modelling status	Releases
Additional Math and Discrete	Decrement Real World			N	N	All
	Decrement Stored Integer			N	N	All
	Decrement Time To Zero			N	N	All
	Decrement To Zero			N	N	All
	Fixed-Point State-Space			N	N	All
	Increment Real World			N	N	All
	Increment Stored Integer			N	N	All
	Transfer FcnDirect Form II			N	N	All
	Transfer FcnDirect Form II Time Varying			N	N	All
Continuous	Derivative [*1]	N	N	N	A	All
	Descriptor State-Space			N	N	All
	Entity Transport Delay			N	N	All
	First Order Hold			N	N	All
	Integrator Limited			N	N	All
	Integrator [*2]	N	N	N	A	All
	Integrator, Second-Order			N	N	All
	Integrator, Second-Order Limited			N	N	All
	PID Controller			N	N	All
	PID Controller (2DOF)			N	N	All
	State-Space	Y	N	N	A	All
	Transfer Fcn	Y	N	N	A	All
	Transport Delay	Y	N	N	A	All
	Variable Time Delay	Y	N	N	A	All
	Variable Transport Delay			N	N	All
	Zero-Pole	Y	N	N	A	All
Discontinuities	Backlash	Y	N	N	A	All
	Coulomb and Viscous Friction	Y	N	N	A	All
	Dead Zone	Y	N	N	A	All
	Dead Zone Dynamic			N	N	All
	Hit Crossing			N	N	All
	PWM			N	N	2020B –
	Quantizer	Y	N	A	A	All
	Rate Limiter			N	N	All
	Rate Limiter Dynamic			N	N	All
	Relay	Y	N	A	A	All
	Saturation	Y	N	A	A	All
	Saturation Dynamic			N	N	All

Category	Block	Show block name	Can be re-sized	Controller modelling status	Plant modelling status	Releases
	Variable Pulse Generator			N	N	All
	Wrap To Zero			N	N	All
Discrete	Delay			N	N	All
	Difference			N	N	All
	Discrete Derivative			N	N	All
	Discrete Filter			N	N	All
	Discrete FIR Filter			N	N	All
	Discrete PID Controller			N	N	All
	Discrete PID Controller (2DOF)			N	N	All
	Discrete State-Space	Y	N	A	A	All
	Discrete Transfer Fcn	Y	N	A	A	All
	Discrete Zero-Pole			N	N	All
	Discrete-Time Integrator			N	N	All
	First-Order Hold			N	N	– 2024A
	Enabled delay			N	N	All
	Memory	Y	N	N	A	All
	Propagation Delay			N	N	All
	Resettable Delay			N	N	All
	Tapped Delay			N	N	All
	Transfer Fcn First Order			N	N	All
	Transfer Fcn Lead or Lag			N	N	All
	Transfer Fcn Real Zero			N	N	All
	Unit Delay	Y	N	A	A	All
	Variable Integer Delay			N	N	All
	Zero-Order Hold	Y	N	A	A	All
Logic and Bit Operations	Bit Clear			N	N	All
	Bit Set			N	N	All
	Bit to Integer Converter			N	N	All
	Bitwise Operator	Y	N	A	A	All
	Combinatorial Logic			N	N	All
	Compare To Constant			N	N	All
	Compare To Zero			N	N	All
	Detect Change			N	N	All
	Detect Decrease			N	N	All
	Detect Fall Negative			N	N	All
	Detect Fall Nonpositive			N	N	All
	Detect Increase			N	N	All
	Detect Rise Nonnegative			N	N	All
	Detect Rise Positive			N	N	All
	Extract Bits			N	N	All
	Float Extract Bits			N	N	All
	Integer to Bit Converter			N	N	All
	Interval Test			N	N	All
	Interval Test Dynamic			N	N	All
	Logical Operator	N	Y	A	A	All
	Relational Operator	N	N	A	A	All
	Shift Arithmetic	Y	N	A	A	All
Lookup Tables	1-D Lookup Table	Y	N	A	A	All
	2-D Lookup Table	Y	N	A	A	All
	Cosine	Y	N	A	A	All
	Direct Lookup Table (n-D)	Y	N	A	A	All
	Interpolation Using Prelookup	Y	N	A	A	All
	Lookup Table Dynamic	N	N	A	A	All
	n-D Lookup Table	Y	Y	A	A	All
	Prelookup	Y	N	A	A	All
	Sine			N	N	All
Math Operations	Abs	N	N	A	A	All
	Add	N	Y	A	A	All
	Algebraic Constraint			N	N	All
	Assignment			N	N	All
	Bias			N	N	All

Category	Block	Show block name	Can be re-sized	Controller modelling status	Plant modelling status	Releases
	Complex to Magnitude-Angle	N	N	A	A	All
	Complex to Real-Imag	N	N	A	A	All
	Divide			N	N	All
	Dot Product	N	N	A	A	All
	Find Nonzero Elements			N	N	All
	Gain	Y	N	A	A	All
	Magnitude-Angle to Complex	N	N	A	A	All
	Math Function					All
	exp	N	N	A	A	
	log	N	N	A	A	
	2^u	N	N	A	A	
	10^u	N	N	A	A	
	log10	N	N	A	A	
	magnitude^2	N	N	N	A	
	square	N	N	N	A	
	pow	N	N	A	A	
	conj	N	N	N	A	
	reciprocal with Exact method	N	N	N	A	
	reciprocal with Newton-Raphson method	N	N	N	A	
	hypot	N	N	N	A	
	rem	N	N	A	A	
	mod	N	N	A	A	
	transpose	N	N	A	A	
	hermitian	N	N	N	A	
	Matrix Concatenate	N	Y	A	A	All
	Min Max	N	Y	A	A	All
	Min Max Running Resettable			N	N	All
	Permute Dimensions	Y	N	A	A	All
	Polynomial	Y	N	A	A	All
	Product	N	Y	A	A	All
	Product of Elements			N	N	All
	Real-Imag to Complex	N	N	A	A	All
	Reciprocal Sqrt			N	N	All
	Reshape	N	N	A	A	All
	Rounding Function	N	N	A	A	All
	Sign	N	N	A	A	All
	Signed Sqrt			N	N	All
	Sine Wave Function			N	N	All
	Slider Gain	Y	N	N	A	All
	Sqrt					All
	sqrt	N	N	A	A	
	signedSqrt	N	N	N	A	
	rSqrt	N	N	N	A	
	Squeeze			N	N	All
	Subtract			N	N	All
	Sum			N	N	All
	Sum of Elements			N	N	All
	Trigonometric Function	N	N	N	A	All
	Unary Minus			N	N	All
	Vector Concatenate	N	Y	A	A	All
	Weighted Sample Time Math			N	N	All
Matrix Operations	Array Processing Subsystem			N	N	2024A –
	Create Diagonal Matrix	N	N	A	A	All
	Cross Product	N	N	A	A	2021B –
	Expand Scalar	Y	Y	A	A	2024A –
	Extract Diagonal	N	N	A	A	2021B –
	Hermitian Transpose			N	N	2021B –
	IdentityMatrix	N	N	A	A	2021B –
	IsHermitian			N	N	2022A –

Category	Block	Show block name	Can be re-sized	Controller modelling status	Plant modelling status	Releases
	IsSymmetric	N	N	A	A	2021B –
	IsTriangular	N	N	A	A	2021B –
	Matrix Multiply	N	N	A	A	All
	Matrix Concatenate	N	N	A	A	All
	Matrix Square			N	N	All
	Neighborhood Processing Subsystem			N	N	2022B –
	Permute Matrix	N	N	A	A	All
	Pixel Processing Subsystem			N	N	2024A –
	Submatrix	N	N	A	A	All
	Transpose	N	N	A	A	2021B –
Messages & Events	Hit Crossing Probe			N	N	All
	Hit Scheduler			N	N	2022B –
	Message Merge			N	N	2021A –
	Message Polling Subsystem			N	N	2022A –
	Message Triggered Subsystem			N	N	2022A –
	Queue			N	N	All
	Receive			N	N	All
	Send			N	N	All
	Sequence Viewer			N	N	All
Model Verification	Assertion			N	N	All
	Check Discrete Gradient			N	N	All
	Check Dynamic Gap			N	N	All
	Check Dynamic Lower Bound			N	N	All
	Check Dynamic Range			N	N	All
	Check Dynamic Upper Bound			N	N	All
	Check Input Resolution			N	N	All
	Check Static Gap			N	N	All
	Check Static Lower Bound			N	N	All
	Check Static Range			N	N	All
	Check Static Upper Bound			N	N	All
Model-Wide Utilities	Block Support Table			N	N	All
	DocBlock	N	N	A	A	All
	Model Info	N	Y	A	A	All
	Timed-Based Linearization			N	N	All
	Trigger-Based Linearization			N	N	All
Ports and Subsystems	Atomic Subsystem	Y	Y	A	A	All
	Code Reuse Subsystem	Y	Y	A	A	All
	Configurable Subsystem			N	N	– 2024A
	Enable	N	N	A	A	All
	Enabled and Triggered Subsystem *[4]			N	N	All
	Enabled Subsystem *[4]			N	N	All
	For Each Subsystem			N	N	All
	For Iterator Subsystem			N	N	All
	Function Element			N	N	2022A –
	Function Element Call			N	N	2022A –
	Function-Call Feedback Latch	N	N	A	A	All
	Function-Call Generator	N	N	A	A	All
	Function-Call Split			N	N	All
	Function-Call Subsystem *[4]			N	N	All
	If			N	N	All
	If Action Subsystem			N	N	All
	In Bus Element	Y	N	A	A	All
	Inport	Y	N	A	A	All
	Model	Y	Y	A	A	All
	Out Bus Element	Y	N	A	A	All
	Outport	Y	N	A	A	All
	Resettable Subsystem	Y	Y	A	A	All
	Subsystem	Y	Y	A	A	All
	Subsystem Examples			N	N	All
	Subsystem Reference	Y	Y	A	A	All
	Switch Case			N	N	All

Category	Block	Show block name	Can be re-sized	Controller modelling status	Plant modelling status	Releases
	Switch Case Action Subsystem			N	N	All
	Trigger	N	N	A	A	All
	Triggered Subsystem			N	N	All
	Unit System Configuration			N	N	All
	Variant Assembly Subsystem			N	N	All
	Variant Model			N	N	All
	Variant Subsystem			N	N	All
	While Iterator Subsystem	Y	Y	A	A	All
Signal Attributes	Bus to Vector			N	N	All
	Data Type Conversion	N	N	A	A	All
	Data Type Conversion Inherited			N	N	All
	Data Type Duplicate			N	N	All
	Data Type Propagation			N	N	All
	Data Type Propagation Examples			N	N	All
	Data Type Scaling Strip			N	N	All
	IC			N	N	All
	Probe			N	N	All
	Rate Transition			N	N	All
	Signal Conversion	N	N	A	A	All
	Signal Specification	Y	N	A	A	All
	Unit Conversion			N	N	All
	Weighted Sample Time			N	N	All
	Width	N	N	A	A	All
Signal Routing	Bus Assignment	N	Y	A	A	All
	Bus Creator	N	Y	A	A	All
	Bus Element In	Y	N	A	A	All
	Bus Element Out	Y	N	A	A	All
	Bus Selector	N	Y	A	A	All
	Connection Port			N	N	All
	Data Store Memory			N	N	All
	Data Store Read			N	N	All
	Data Store Write			N	N	All
	Demux	N	Y	A	A	All
	Environment Controller			N	N	– 2024A
	From	N	Y	A	A	All
	Goto	N	Y	A	A	All
	Goto Tag Visibility			N	N	All
	Index Vector			N	N	All
	Manual Switch			N	N	All
	Manual Variant Sink			N	N	All
	Manual Variant Source			N	N	All
	Merge			N	N	All
	Multiport Switch	N	Y	A	A	All
	Mux	N	Y	A	A	All
	Parameter Writer			N	N	All
	Selector	Y	N	A	A	All
	State Reader			N	N	All
	State Writer			N	N	All
	Switch	N	N	A	A	All
	Two-Way Connection			N	N	All
	Variant End			N	N	2024A –
	Variant Sink			N	N	All
	Variant Source			N	N	All
	Variant Start			N	N	2024A –
	Vector Concatenate	N	Y	A	A	All
Sinks	Display			N	N	All
	Floating Scope			N	N	All
	Out Bus Element	Y	N	A	A	All
	Outport	Y	N	A	A	All
	Record			N	N	2021A –

Category	Block	Show block name	Can be re-sized	Controller modelling status	Plant modelling status	Releases
	Scope			N	N	All
	Stop Simulation			N	N	All
	Terminator	N	N	A	A	All
	To File			N	N	All
	To Workspace			N	N	All
	XY Graph			N	N	All
Sources	Inport	Y	N	A	A	All
	Band-Limited White Noise	Y	N	N	A	All
	Chirp Signal	Y	N	N	A	All
	Clock	N	N	N	A	All
	Constant	Y	N	A	A	All
	Counter Free-Running			N	N	All
	Counter Limited	Y	N	N	A	All
	Digital Clock	Y	N	N	A	All
	Enumerated Constant	Y	N	A	A	All
	From File	Y	N	N	A	All
	From Spreadsheet	Y	N	N	A	All
	From Workspace	Y	N	N	A	All
	Ground *3	N	N	N	A	All
	In Bus Element	Y	N	A	A	All
	Playback	N	N	N	A	2022B –
	Pulse Generator	Y	N	N	A	All
	Ramp	Y	N	N	A	All
	Random Number	Y	N	N	A	All
	Repeating Sequence	Y	N	N	A	All
	Repeating Sequence Interpolated	Y	N	N	A	All
	Repeating Sequence Stair	Y	N	N	A	All
	Signal Builder	Y	N	N	A	– 2022B
	Signal Editor	Y	N	N	A	All
	Signal Generator	Y	N	N	A	All
	Sine Wave	Y	N	N	A	All
	Step	Y	N	N	A	All
	Uniform Random Number	Y	N	N	A	All
	Waveform Generator			N	N	All
User-Defined Functions	C Caller			N	N	All
	C Function			N	N	All
	Fcn			N	N	– 2020A
	Function Caller			N	N	All
	Initialize Function			N	N	All
	Interpreted MATLAB Function			N	N	All
	Level-2 MATLAB S-Function	Y	Y	N	A	All
	MATLAB Function	Y	Y	N	A	All
	MATLAB System			N	N	All
	Python code	Y	Y	N	A	2025a
	Reinitialize Function			N	N	2022A –
	Reset Function			N	N	All
	S-Function	Y	Y	A	A	All
	S-Function Builder	Y	Y	N	A	All
	S-Function Examples			N	N	All
	Simulink Function			N	N	All
	Terminate Function			N	N	All
Stateflow	Chart	Y	Y	A	A	All
	Sequence Viewer			N	N	All
	State Transition Table			N	N	All
	Truth Table			N	N	All

Notes:

Key	Description
*[1]	Use of this block may impact simulation times, depending on the solver and its settings.
*[2]	The accuracy of this block's output may depend on the chosen solver.
*[3]	Use of this block may mask errors, and in some circumstances it will not output the expected value.
*[4]	Use Subsystem, Enable and Trigger blocks to create equivalents of these blocks following related rules on positioning of the Enable and Trigger blocks.